ANNEX 9

PARTICIPATORY RUTAL APPRAISAL (PRA)
SURVEY AND IA STRENGTHENING ACTION PLAN

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

ANNEX 9

PARTICIPATORY RURAL APPRAISAL (PRA) SURVEY AND IA STRENGTHENING ACTION PLAN

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ANNEX 9 PARTICIPATORY RURAL APPRAISAL (PRA) SURVEY AND IA STRENGTHENING ACTION PLAN

1. Procedure of the PRA Survey

The second field survey and study was conducted for about 5.5 months from September 17, 2002 to March 1, 2003. The PRA survey was conducted in six (6) NISs, involving 17 IAs. Questionnaires involving the NISO, local agencies and IAs were prepared and used to collect the required information. The activities involved in the survey and study for each NIS-IA consisted of the following:

1) Preparatory action
   - Collection of data and information on target NIS-IAs
   - Coordination with relevant agencies on the support services needed by IAs
2) Field survey (September – December 2002)
   - Collection and analysis of basic information on socio-economy, irrigation systems, and activities of NISO, IA and LGUs
   - Field coordination meeting with relevant institutions covering methods of survey, schedule and potential assistance from LGUs
   - Preparation of resource and inventory maps based on walk through survey and field interview
   - Field survey for individual target IAs through problem and objective analyses, preparation of PDMs and action planning by IAs using project cycle management method (PCM)
   - Wrap-up workshop through presentation of IA strengthening action plans and team building among IAs and local agencies
3) Analysis of the data collected and formulation of action plans for strengthening the target NIS-IAs

The composition of the field survey team and corresponding activities are shown in Figure 1.1.

2. Socio-Economy of Selected NIS Areas

The Province has been chosen as the basic administrative boundary to describe the social and economic progress of the selected NIS areas. For this purpose, the human development index (HDI), minimum basic needs (MBN) and other socio-

economic indicators are presented to permit comparison of social and economic progress in the seven (7) provinces1.

2.1 Selected Economic Indicators

(1) Human Development Index

HDI by province is presented below. AMRIS is situated in the most progressive provinces, followed by San Fabian, where the HDIs are above and almost equal to that of the nationwide average, respectively. Development wise, there has been deterioration in social and economic progress in all provinces between the periods 1994 and 1997. If public investments were to be made to usher progress, the priority provinces would be those with lower HDIs, among which are Negros Occidental, Zamboanga del Sur, Bukidnon and Davao del Sur.

Human Development Index

Country and Province	NIS	Human Development Index			
		1994		1997	
		Index	Rank*	Index	Rank*
Philippines		0.660		0.665	
1 Pangasinan	San Fabian	0.629	18	0.611	13
2 Bulacan	AMRIS	0.763	5	0.700	4
3 Pampanga	AMRIS	0.731	6	0.646	8
4 Negros Occidental	Bago	0.577	34	0.539	43
5 Zamboanga del Sur	Labangan	0.543	44	0.521	55
6 Bukidnon	Pulangui	0.560	38	0.533	47
7 Davao del Sur	Mal	0.518	51	0.517	57

Source: 1999 Philippine Yearbook

* Out of 78 Provinces

(2) Minimum Basic Needs

Selected indicators depicting MBN as of 1999 for the bottom 40% of Filipino families is presented below. Access to basic social services (health and housing) is high for Bulacan and Pampanga. Income potential of families is also high, as reflected by the higher percentage of family above the poverty threshold, which may be due to income accruing from small businesses instead of employment. Participation in organization, however, is the lowest, an indicative that families may likely be averse to organizing activities. Higher proportion of families is

[1] HDI serves as an "aggregate measure of how well a country/province has performed not only in terms of real income growth, but also in terms of social indicators such longevity, knowledge and skills, and standard of living or access to resources. MBN defines the minimum criteria for attaining a decent quality of life. It refers to survival requirements such as health, food and nutrition, clothing, water and sanitation, shelter, education and peoples participation in community affairs".

observed in Bukidnon and Davao del Sur which may potentially indicate the receptiveness of families towards group organization.

Nationwide Ranking of Provinces According to Selected Indicators of Minimum Basic Needs Met for the Bottom Forty Percent of Filipino Families: October 1999

Province	With Access to Health Facilities		With Housing Unit		With Gainfully Employed Family Head		With Income above Poverty Threshold		With Membership in any PO /NGO/Coop	
	Percent of Family	Rank*	Percent of Family	Rank*	Percent of Family	Rank*	Percent of Family	Rank*	Percent of Family	Rank*
1 Pangasinan	38.6	35	88.1	10	78.5	73	18.7	57	14.3	47
2 Bulacan	51.0	10	72.4	32	84.1	65	50.3	2	10.6	57
3 Pampanga	65.5	2	71.7	35	67.8	77	40.6	8	1.9	75
4 Negros Occidental	29.6	62	45.4	73	86.4	58	27.8	29	15.6	44
5 Zamboanga del Sur	25.9	69	65.9	46	92.5	26	18.4	59	18.8	35
6 Bukidnon	36.8	42	78.4	25	98.6	3	14.4	70	27.1	22
7 Davao del Sur	30.2	59	64.7	49	89.5	48	24.7	41	22.8	28

Source: 1999 Philippine Statistical Yearbook *Out of 78 Provinces

(3) Population and Employment

The population growth and employment in agriculture (as industry) and by type is given below. Bulacan and Pampanga, which are proximate to urban centers have posted high population growths. In contrast, the provinces of Negros Occidental and Zamboanga del Sur which belong to the less developed provinces posted the lowest population growths. This is due to out-migration brought about by unstable peace and order situation.

With the exception of Bulacan and Pampanga, the employment pattern is basically agriculture. Paddy farming is dominant in Pangasinan, Bulacan and Pampanga, while corn farming is common in Bukidnon, Davao del Sur and Zamboanga del Sur. Sugarcane farming prevails in Negros Occidental.

Annual Population Growth and Percent of Families Employed in Agriculture As a Sector and By Type: 2000

Province	Annual Population Growth (1995-2000)	Employment in Agriculture and Forestry (%)	Employment in Agriculture (%)					
			Paddy Farming	Corn Farming	Coconut Farming	Banana Farming	Sugarcane Farming	Animal Husbandry
Philippines	2.9	39.0	44.3	24.4	9.3	2.1	2.1	5.7
1 Pangasinan	2.2	40.4	91.5	1.1	0.1	0.2	0.2	3.3
2 Bulacan	4.6	12.8	74.4	1.0	0.5	0.0	0.0	14.4
3 Pampanga	2.9	15.3	76.7	0.9	0.4	1.4	2.1	6.7
4 Negros Occ	1.0	51.2	26.7	20.6	1.0	0.9	40.8	4.0
5 Zamboanga del Sur	1.8	69.8	35.7	39.5	7.7	0.3	0.1	6.7
6 Bukidnon	2.4	77.8	11.0	64.5	0.4	0.3	2.9	6.0
7 Davao del Sur	2.3	64.4	11.1	46.6	17.2	2.0	3.0	12.3

Source: National Statistics Office, 2000 Census of Population and Household

(4) Poverty Incidence

The incidence of poverty between 1997 and 2000 is given below. Bulacan and Pampanga have the least proportion of population below the poverty threshold. In contrast, severe poverty is noted in the provinces of Negros Occidental, Zamboanga del Sur and Bukidnon, where 40% to 50% of the population is below the poverty line in 2000. The level of poverty has deteriorated in 2000 for Pampanga, Negros Occidental, and Zamboanga del Sur.

Poverty of Incidence: Per cent of Population below the Poverty Threshold

Country and Province	1997	2000	Change (%)
Philippines	33.0	34.0	1.0
1 Pangasinan	39.5	37.2	-2.3
2 Bulacan	10.7	7.5	-3.2
3 Pampanga	9.7	18.2	8.5
4 Negros Occidental	41.2	50.2	9.0
5 Zamboanga Del Sur	34.3	43.3	9.0
6 Bukidnon	48.3	39.6	-8.7
7 Davao del Sur	28.2	21.8	-6.4

Source: National Statistics Office, Annual Poverty Indicator System

2.2 Distribution of Farmers and Farm Sizes by Tenure

The distribution of farmers and farm sizes by tenure is given below. With the exception of Negros Occidental, owner cultivators representing above 40% of farmers prevail in all of the provinces. The exception of Negros Occidental is primarily due to sugarcane cultivation (which incidentally is the main crop and employs production-labor sharing). The incidence of tenancy is more than 50% and following closely are the provinces of Zamboanga del Sur, Bukidnon and Davao del Sur. Tenancy has been empirically proven a major structural constraint to increasing productivity.

Distribution of Farmers and Farm Sizes by Tenure

	Distribution of Farmers (%)				Average Farm Size (ha)			
	Owner	Amortizing Owner	Lessee	Tenants & Others	Owner	Amortizing Owner	Lessee	Tenants & Others
Philippines	43.4	33.0	2.5	21.1	2.4	2.1	2.2	1.7
Pangasinan	40.5	24.5	5.2	28.3	1.1	1.3	1.4	1.2
Bulacan	49.8	9.0	13.4	27.9	1.2	1.7	1.5	1.4
Pampanga	46.9	7.6	12.6	32.9	1.6	2.6	2.0	2.1
Negros Occidental	36.3	2.9	5.7	55.1	4.4	2.4	4.4	1.4
Zamboanga del Sur	48.4	5.2	3.4	43.1	3.1	3.2	2.1	2.2
Bukidnon	48.3	6.7	5.9	39.0	3.7	2.4	8.2	2.1
Davao del Sur	47.3	4.2	4.7	43.8	2.6	2.5	2.0	1.3

Source: National Statistics Office, 1990 Census of Agriculture and Fishery

2.3 Paddy Production

The direct input in growing paddy is irrigation water. Paddy production, harvested area, and yield, including their growth rates are given below. In general, production of irrigated paddy was favorable during the period 1999-2001 with the growth varying from 2% to as high as 40% for all provinces (except Bukidnon). Favorable climate may have influenced the good production. Despite decreases in area harvested, yield for irrigated paddy posted slight increases. Production of rainfed paddy was not as stable as irrigated paddy. The increases in yield were outpaced by decreases in area harvested.

Paddy Production, Area Harvested and Yield

	Production (1000 ton)				Area Harvested (1000 ha)				Yield (ton/ha)			
	Irrigated		Rainfed		Irrigated		Rainfed		Irrigated		Rainfed	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
Philippines	8,918	9,790	2,869	3,165	2,665	2,727	1,335	1,339	3.4	3.6	2.2	2.4
Pangasinan	505	534	161	208	145	143	62	73	3.5	3.7	2.6	2.8
Bulacan	200	205	60	75	57	53	21	21	3.5	3.9	2.8	3.6
Pampanga	203	239	10	9	57	58	4	3	3.6	4.1	2.7	2.8
Negros Occ.	252	258	83	70	80	73	30	23	3.2	3.5	2.8	3.1
Zamboanga del Sur	163	226	72	108	54	70	30	40	3.0	3.2	2.4	2.7
Bukidnon	248	236	6	5	66	65	3	3	3.8	3.7	1.9	1.8
Davao del Sur	102	107	2	2	24	24	1	1	4.3	4.5	1.7	1.6

Source of Data: Bureau of Agricultural Statistics

Growth in Paddy Production, Area Harvested and Yield (1999-2001)

	Growth in Production (%)		Growth in Area Harvested(%)		Growth in Yield(%)	
	Irrigated	Rainfed	Irrigated	Rainfed	Irrigated	Rainfed
Philippines	9.8	10.3	2.3	0.3	5.9	9.1
Pangasinan	5.9	29.1	-1.4	17.4	7.5	10.1
Bulacan	2.6	25.1	-6.7	-1.3	10.2	27.1
Pampanga	17.9	-15.1	2.2	-19.3	15.4	4.5
Negros Occ.	2.3	-15.7	-8.3	-24.2	11.7	10.9
Zamboanga del Sur	38.5	49.6	28.7	32.4	7.7	13.0
Bukidnon	-5.0	-24.6	-1.4	-20.3	-3.7	-5.9
Davao del Sur	4.9	3.7	-0.5	7.1	5.6	-3.6

2.4 Farmgate Prices of Palay

Farmgate prices of paddy during the period 1995-2000 are given below. Real prices (constant 2000 prices) have been growing by about 7% annually.

Current and Constant 2000 Farmgate Prices of Palay

	Current Prices(Php/kg)						Constant 2000 Prices (Php/kg)						Annual Real Growth (%)
	1995	1996	1997	1998	1999	2000	1995	1996	1997	1998	1999	2000	1995-2000
Philippines	7.12	7.54	7.52	8.12	7.89	8.14	6.04	7.53	6.90	7.99	7.15	8.14	7.3
Pangasinan	7.16	6.08	6.95	7.81	7.94	8.08	6.08	6.07	6.38	7.68	7.20	8.08	6.9
Bulacan	6.95	7.46	7.49	8.22	7.87	7.52	5.90	7.45	6.87	8.09	7.13	7.52	7.1
Pampanga	6.00	7.18	7.15	8.51	8.75	8.35	5.09	7.17	6.56	8.37	7.93	8.35	7.1
Negros Occ.	8.86	7.43	7.82	7.75	7.55	7.35	7.52	7.42	7.18	7.63	6.84	7.35	7.3
Zamboanga del Sur	6.54	7.59	7.63	6.15	7.15	8.14	5.55	7.58	7.00	6.05	6.48	8.14	6.7
Davao del Sur	6.82	7.57	8.20	8.90	8.52	8.13	5.79	7.56	7.52	8.76	7.72	8.13	7.5
Bukidnon	6.75	7.83	7.56	7.43	7.59	7.75	5.73	7.82	6.94	7.31	6.88	7.75	7.0

Source: Bureau of Agricultural Statistics

On a monthly basis, the slight to moderate fluctuation in current prices for both paddy and rice in 2001 (as shown in Figure 2.4.1) is largely induced by production surpluses during peak harvest, especially for paddy. Rice prices, while deregulated, are tempered by NFA's buffer stock.

During peak harvest periods, paddy prices are really depressed. And since most farmers are indebted to rice traders (as their primary source of short-term credit), and the produce are taken as outright payment for borrowed loans, the potential gains from postponing the selling of the produce or for further processing is often thwarted. Other factors that cause the dampening of prices include scarcity of solar dryers and warehouses, and poor condition of farm-to- market roads. The latter directly influences the prohibitive cost of transport.

2.5 Marketing Development for Paddy and Rice

The NFA, a government-controlled corporation, protect paddy and corn farmers through a price support mechanism. It intervenes in the market nationwide when prices of these commodities are depressed. The NFA undertakes intensive procurement at support prices normally above the prevailing market prices. The volume procured, however, is limited. During the periods 1999, 2000 and 2001, the procurement rates were 4.8%, 5.4% and 3.7%, respectively which are way below the 10% of the marketable surplus as mandated by law. NFA's performance was affected very badly by the late release of its subsidy, forcing the agency to contract loans from commercial banks at market rates.

NFA has available warehouses and drying facilities where agricultural cooperatives and other organized farmers can stock and dry to improve the

moisture content of their paddy, respectively. Despite this program, access to these facilities by farmers is restricted.

From the consumer's side, rice prices have been deregulated. NFA intervenes only when there is sudden upsurge in retail rice prices by releasing its buffer stock. The buffer stock is met through imports and domestic procurement. There has been move by government to fully deregulate rice importation by allowing the private sector, including organized farmers group to do importation instead of NFA. The guidelines with respect to the current rice importation are:

1) NFA will first domestically source its buffer stock, and whatever volume can not be supplied locally is subject to imports. These imports are open to the private sector. Between 1999-2000, the average volume of rice imports ranges from 600,000 to 800,000 tons annually
2) NFA will announce the volume of rice to be imported per quarter three (3) weeks prior to opening of letter of credit (LC) for each quarter.
3) Importation will be made on a first come and first serve basis. LBP will cease to issue LCs once the NFA's prescribed volume per quarter has been satisfied. Each importer is allowed a maximum of 10,000 tons for the whole year of 2003. All imports are subject to tariff and other fees.
4) Any entity intending to import rice will first secure a license from NFA, and instead of the import permits, all import will be covered with LCs to be opened only with the LBP.
5) For the first quarter volume in 2003, LCs will be opened with LBP beginning January 16 to February 16. Farmers organized group will be given the first privilege to open LCs between January 16-31. The unavailed balance will be given to other importers on February 1-15, 2003. This procedure will be followed in the succeeding quarter, giving always first priority to farmers group.
6) All imports for the year should arrive on or before June 30, 2003. All imports beyond that date are subject to a penalty of 50% of the landed cost.

Market networking and intelligence is very weak, as a support mechanism to farmers groups. There is no national information network that can render a sharing of database on producers and buyers, as well as information and business leads gathered from local/international trade fair and missions. Assembly marketing is barely practiced.

3. Present Condition of Pilot NISOs

3.1 Manpower

The manpower per pilot NISO is given in the table below. In terms of workload, there is unequal distribution of staff per NISO. San Fabian and Mal NISOs have the lightest workload, while Labangan NISO has the heaviest workload. The inequity is further seen between Bago and Labangan NISOs. The workload per staff is about the same and yet the service area of Bago is about four times bigger than Labangan. In terms of delivery of service, obviously a number of the staff is overworked. This becomes more distinct when the staffing is reviewed based on function. An O and M staff in Labangan NISO has about 600 ha compared to about 300 ha in San Fabian, Pulangui and Mal NISOs. Under institutional, there is a deliberate attempt to decapitate this function, and this could be the foremost consideration why this activity has been neglected. Table 3.1 shows the manpower of the pilot NISOs.

Present Manpower Staffing of Pilot NISOs

Pilot NISO	Number of Staff			Service Area (ha)	Manpower-Output Ratio (ha per Staff)		
	Total	O & M	Institutional		Total	O & M	Institutional
San Fabian	20	12	1	3,594/a	180	300	3,594
Angat	143	125	6	31,485/b	220	252	5,248
Bago	49	28	3	12,700	259	454	4,233
Labangan	11	5	1	3,195	290	639	3,195
Pulangui	56	36	1	11,415	204	317	11,415
Mal	15	8	1	2,613	174	327	2,613

Source: National Irrigation Systems Office, /a Covers Dumuloc RIS, /b Covers Maasim RIS

3.2 Budget Allocation, Income and Expenditure

The average budget allocation and the actual income and expenditures are given in the table below, the details of which are given in Table 3.2 and illustrated in Tables 3.3 and 3.4. As usual, the budget allocation is always above the expenditure level. There is a tendency among NISO superintendents to overstate their budget request, but in reality they can only spend up to their income level. During the periods 1999-2001, only Pulangui, Labangan and Mal were more than able to cover their expenditures. The incomes of the three (3) other NISOs, notably San Fabian, Angat and Bago failed to satisfy their expenditures.

Average Budget Allocation, Income and Expenditure of Pilot NISOs: 1999-2001

Pilot NISOs	Budget Allocation (Php '000)	Income (Php '000)	Expenditure (Php '000)	Surplus/Deficit (Php '000)
San Fabian	5,521	1,317	4,070	-2,753
Angat/a	37,985	31,218	34,669	-3,450
Bago	/b	5,718	7,599	-1,881
Labangan	3,426	2,590	2,248	342
Pulangui	17,475	13,867	11,119	2,748
Mal	2,582	3,662	2,020	1,642

Source: National Irrigation Systems Office, /a Includes Maasim, /b No data

The income is derived mainly from ISF collection and rental earnings from equipment. Angat is an exception, having income coming from the use of water for hydropower. In terms of expenditures, salaries for personnel (80-90%) account for the bulk and very little for maintenance and other operating expenses (MOOE). Direct expenses for maintenance of irrigation facilities are practically nothing. For instance, Angat which is the biggest system spent an average of measly 1% of its MOOE. Unless the national government provides subsidy to NIA, there is virtually no fund available for maintenance of the irrigation facilities.

Table 3.5 shows the comparative rehabilitation and maintenance cost of the pilot NISOs. Inventory of equipment mainly used for maintenance is given in Table 3.6.

Breakdown of Income and Expenditure: 1999-2001

Pilot NISOs	Income (%)				Expenditure (%)		
	ISF	Rental	Others	Total	Personnel	MOOE	Total
San Fabian	81	16	3	100	44	56	100
Angat	54	14	32	100	87	13	100
Bago	97	2	1	100	92	8	100
Labangan	65	21	14	100	84	16	100
Pulangui	77	21	2	100	85	15	100
Mal	76	23	1	100	93	7	100

Source: National Irrigation Systems Office
/a No breakdown of expenditure

4. Profile of Pilot IAs

4.1 Organization

4.1.1 Years of Existence and Membership

The reckoning period for the juridical existence of an IA is when it was registered with the SEC. The average age of pilot IAs is about 9 years, while the rate of membership (defined as percentage of actual members to total farmers) is barely 40%. This observation becomes highly variable when the IAs are stratified according to hydrological location and NIS type as shown below. By NIS type, the lowest rate of membership is 20% and yet they comprised the oldest IAs. On

the contrary, the youngest IAs have the highest rates of membership at 80%. The variability becomes more distinct when the IAs are compared individually (Ref. Table 4.1).

The perceived rate of active members is generally low, except for market-away. There is thus reason to believe that responsibilities of being a member are not well appreciated.

Upstream and midstream IAs have likewise no distinct advantage over downstream IAs. Downstream IAs with membership rate of about 50% are faced with shortage of water during critical dry months, and this could be the reason why members opt to bond together to get a better leverage with the upper stream IAs.

Age and Membership Profile of Pilot IAs

Item	Age (Years)	Membership Rate (%)	Perceived Active Member (%)
1. All 17 IAs	9	43	28
2. By NIS Type			
• Water constraint	14	22	28
• Unexplored potential	9	42	21
• Market away	4	82	52
3. By hydrological location			
• Upstream IA	7	40	25
• Midstream IA	10	33	23
• Downstream IA	11	51	37

Source: Table 3.1.1

The following observations can be inferred from the above information:

1) Age and location has nothing to do with membership expansion. The campaign for membership expansion has never been a priority because of the little understanding about responsibilities and obligations of being a member.
2) There is a misconception among leaders of who constitute the legitimate members. The master list of most pilot IAs has not been updated and the current practice by original members to delegate the cultivation of their farms to caretakers and tenants makes it difficult to distinguish genuine from *pseudo* members.
3) The intensity of members' participation given by the very low perceived rate of active member is practically akin to *de-facto* organizations. This is likened to the IAs in San Fabian RIS, where leaders and members are only paying lip service to the associations' activities.

4.1.2 Landholding, Yield and Cropping Intensity

A summary of landholding, yield and cropping intensity is given in the table below. The mean landholding is about 1.4 hectares, which is almost the size by hydrological location. The size becomes slightly variable by NIS type, ranging from 0.50 to 1.6 hectares. Fragmentation of landholding becomes distinct on an individual IA (Ref. Table 4.2).

Farm Size, Cropping Intensity and Yield Data of Pilot IAs (Average Crop Year 1999-2000)

Item	Farm Size (ha)	Cropping Intensity (%)			Palay Yield (ton/ha)	
		Wet	Dry	Annual	Wet	Dry
1. All 17 IAs	1.36	78	69	147	3.78	4.00
2. By NIS Type						
• Water constraint	0.53	88	50	138	3.8	4.1
• Unexplored potential	1.58	59	60	119	3.7	3.9
• Market away	1.12	90	70	160	4.1	4.2
3. By Hydrological location						
• Upstream IA	1.36	87	76	163	3.7	4.0
• Midstream IA	1.02	75	69	144	3.9	4.0
• Downstream IA	1.08	73	62	136	3.6	3.7

Source: Tables 4.2 and 4.3

The average yield of palay is about 4.0 tons/ha for both the wet and dry seasons, while the cropping intensity is roughly 150% for all IAs. Cropping intensity becomes critical during the dry season, especially for water constraint NIS and downstream IAs, which is indicative of the inequity in the distribution of water. This problem appears to be critical compared to lack of water supply *per se* as the cropping intensity drops markedly from 80% (upstream) to 60% (downstream).

The following two (2) organizational implications are evident from the above findings:

1) The landholdings and crop productivity of members are relatively low. Members have not taken advantage of better farming technologies to increase yield levels, and consequently lower levels of farm income. The low income is oftentimes the argument used by members to neglect and postpone ISF payment.
2) Water shortage or lack of water supply does not necessarily be the reason for obtaining low cropping intensity. Given the experiences of the 17 pilot IAs, it is sometimes brought about by improper management of water demand. The ill-timed allocation of water results in inequitable distribution, prejudicing the downstream farmers of getting the right volume of water.

4.1.3 Land Tenure

About 50% of total members are reported as owner-cultivator in all systems. With the exception of the three (3) IAs in San Fabian RIS and Balucoc IA in Agno RIS, the proportion of owner-cultivator is high in the other IAs, about 40-75% of total members (Ref. Table 4.4). However, this number may not be reflective of the true situation. Owner-cultivators have actually delegated their cultivation rights to tenants, caretakers and/or hired farm managers. In other instances, a member may be cultivating several lands, and he registers himself as member in one or two IAs covering the lands where he is the cultivator. However, the real cultivator is a caretaker. The real owner-cultivators may just be a small fraction of total farmers.

Tenant as reported by the NISO is rather understated. Combining the tenants with the caretakers and transients laborers, who are technically similar in most respects relative to production sharing and labor-landlord relationship, the proportion is about two-fifth of the total members, whether by system or hydrological location. High incidence of tenancy is prevalent in Malkaira, Labakafia, Picaba and Sandata IAs, where tenancy ranges from 50% to 70%.

Land Tenure Status of Actual Members in Pilot IAs

All 17 IAs	%
• Owner-cultivator	49
• Amortizing landowner	11
• Tenants caretakers, transient, etc.	40
Total	100

Source: Table 4.1.4

The present land tenure structure where there is a perceived incidence of absentee landowners affects the quality of participation in most IA activities. Because tenants and caretakers are just proxies to the real owner-cultivators, they seldom participate in IA activities, like canal clearing and attendance in meetings. Caretakers do not bother about following rules and regulations on water delivery and distribution. Their priority, which is basically survival, is to use water at all cost at the expense of legitimate members. From an organizational standpoint, legitimizing caretakers and tenants as members of the IA is a further step in enhancing the base of the organization. What to do with the absentee landowner without necessarily diminishing their right and ownership status, is to introduce a land sharing arrangement (farmland trust) where they will entrust the custody of their lands to the caretakers who have become members of the IAs.

4.1.4 Turnout Service Area (TSA)

TSA is important, as it is the basis for TSAG formation. A leader or chairman chairs each TSAG. From an organizational point of view, TSAG is the point of convergence of IA members, and the cohesiveness of an IA depends to a large extent on how well the coordination mechanisms of several TSAGs is working. The size of TSA, as shown in the table below, influences the extent of coordination a TSA leader can effectively manage, especially in the enforcement of O&M policies. The area per TSA is sometimes a better indicator in looking at the effectiveness of the IA (in terms of coordination) rather than the service area per se. The number of TSA is also IA's parameter in determining the number of BOD.

The average service area per TSA is about 50 ha, and the number of farmers per TSA is about 40. The size ranges from 25 ha (Labakafia IA) to 90 ha (Kahugpungan IA). There are at least 4 IAs having TSAs that are above the average, and 13 IAs within the average (Ref. Table 4.5). Grouped according to NIS type and hydrological location, the TSA sizes are within the average, except for water constraint and market away NIS as shown below.

Indicative Parameters of TSA of Pilot IAS

Item	Area(ha)/TSA	Farmer/TSA
1. All 17 IAs	49	36
2. By NIS Type		
• Water Constraint	33	62
• Unexplored Potential	53	34
• Market away	29	26
3. By hydrological location		
• Upstream IA	55	40
• Midstream IA	47	31
• Downstream IA	53	36

Source: Table 7.4.5

In practice, however, the reported sizes may no longer be the same, as there are plenty of illegal turnouts being constructed by farmers inside the service area just to be able to draw as much water as possible. The proliferation of illegal turnouts is one of the major hindrances in enforcing equitable distribution of water. This subsequently makes it difficult to implement synchronous planting.

The current sizes of TSA were presumably determined based on topography, irrigation efficiency, availability of water, etc. Notwithstanding these accepted parameters, the need to review them becomes imperative in light of existing organizational concerns. NIA has neither defined an appropriate TSA size nor an

appropriate service area for an IA. Large TSAs and consequently becoming the basic unit for TSAG formation are unwieldy to manage, especially if the leader's role is expanded to providing agricultural extension services, over and above the usual O& M activities. Further, too many small TSAs exacerbated by the proliferation of illegal turnouts also yield similar problems. The ideal situation is to define a manageable TSAG that is both cost-effective and efficient to manage. Emerging examples of IAs that need TSA restructuring and eventually spinning off new IAs are Muchrist and Sandata IAs in Labangan, Atidu and Bunasabala IAs in Bago and Kahugpungan IA in Pulangui. The service areas of these IAs are quite large and yet there are very few TSA.

4.1.5 Functionality Rating

The functionality rating of 17 IAs is given in Table 4.6. With the exception of Malkaira IA in Mal RIS, and the three (3) IAs in AMRIS, whose evaluation were very satisfactory and satisfactory, respectively, the rest have been rated from fair to poor. The general observation is that these IAs, despite their long existence are dormant organizations, characterized by poor governance. They have been unable to perform basic services required for its members. Factors that tend to support the very low level of functionality of the pilot IAs (culled from the results of the PCM workshops) are described in Chapter 6.

4.1.6 Leadership and BOD Culture

Good leadership influence is a key factor in bringing the members closely within the organization. The results of the problem tree analysis would tend to show that the leaders are not good role models who can portray right behavior. This stems from the poor selection of leaders. The traditional practice of putting a leader closely associated with politicians is a case evident in Scientific Farming IA in San Fabian and Balucoc IA in AMRIS. The leaders were arbitrarily designated without the benefit of an election. Under this circumstance, it is common to note overstaying leaders whose interests have become parochial to the association. IAs in AMRIS, Bago, Labangan and Pulangui RIS have manifested this concern as a consequence of the absence of regular election of officers.

In most IAs, the number of BOD is equated with the number of TSA. This practice appears arbitrary. It is to be noted that the size of the BOD has nothing to do with organizational effectiveness. Designation of BOD based on merit and functional responsibilities may be a better alternative rather than this existing practice.

4.1.7 Record Keeping

The results of the PCM workshops indicate neglect of basic record keeping. Records of IAs such as day-to-day records (minutes of meetings, by-laws, etc.) to the more sophisticated water management records (cropping calendar, water delivery schedule, program of work for maintenance, etc) and financial data are often missing and/or incomplete. This stems from the following: (a) poor knowledge about filing system; (b) inability or poor skills in tracking essential data or information; (c) arbitrary handling of records due to limitation and absence of custodian officer especially when officers are replaced after elections; and (d) no permanent office for depository. For reportorial requirements, it is difficult to monitor and evaluate performance and at the same time get the information required for preparing O&M plans. The argument often posed by the IAs (if anybody inquires about particular record) is to pinpoint the NISO as the source of information. The NISO, however, does also have incomplete records.

From an organizational concern, the dearth of good records has badly affected formulation and implementation of O&M plans and policies. Conflicts about water delivery and irregular planting schedules are partially due to absence of records that could pinpoint exactly the scope, date and duration of critical water shortage. Financial and other records supposedly to be submitted to SEC are ignored. Eight out of 17 pilot IAs have not regularly submitted their SEC reports. The SEC may already have revoked the licenses of these IAs.

4.2 Operation and Maintenance

4.2.1 Water Management

The preparation of cropping calendar and water distribution plan, a practice normally connected with water management, is observed. With the exception of Balucoc and Josephian IAs (AMRIS), the rest have water distribution plan, and all pilot IAs have cropping calendar. Low compliance to implementation of cropping calendar (about 20 to 40%) was reported for the three (3) IAs in San Fabian, while high compliance, about 70 to 100% was reported for the remaining IAs (Ref. Table 4.7). Notwithstanding the knowledge about preparation of these plans, the more important concern pertains to quality of preparation and enforcement of both plans. The execution of these plans is far from satisfactory, based on the results of the PCM workshop. Clearly, while the IAs have water distribution plan and cropping calendar there is a deliberate attempt to ignore the rules and policies by

themselves. The upstream IAs abuse the water allocated, using more than the required volume due to all sorts of illegal practices. Thus, competition for water becomes very keen among farmers within the same IA, particularly at the downstream IAs.

The perennial conflict in water distribution is an offshoot about membership and leadership flaws, many of which were cited in the previous section. The voluntary membership, for one, does not prevent a non-member from using the water. Non-members can use the water as long as they pay the ISF, and have also been perceived responsible for illegal practices. Second, the upstream IAs are bound to use excess water unless the lower stream IAs are strongly empowered to block any attempt by the upstream IAs to get more than they need. This brings the importance of the SMC as the venue for arbitrating conflict in water usage. However, most SMCs are dormant. Third, the preparation of water distribution and cropping calendar plans is essentially NISO-driven, that is water supply based and hardly does incorporate crop-water needs. IA leaders are immersed in the preparation, but members are not. And often there is a communication gap, between leaders and members, and the latter are tempted to commit infraction. Water conservation is out of the picture and a strong advocacy instilled in the minds of the IAs is a good step to proper water management.

4.2.2. Maintenance

The costlier part of O&M is maintenance. Maintenance work is reinforced through Type I contract. With the exception of Muchrist and Sandata IAs in Mal and Scientific Farming IA in San Fabian RIS, the rest have Type I contract with NIA. Indirectly, this practice has somehow exacerbated negligence among members to do their share in maintenance. To the extent that NIA has the funds and can be disbursed on time, the IAs at least commit themselves to clean secondary canals. NIA has more often failed than fulfilled its obligations. The agency takes about two-three cropping seasons to generate funds to pay for services rendered to IAs. This has prompted IAs to abandon their responsibility in canal clearing. The neglected condition of canals and other laterals, including major facilities is now very evident. Canals and its embankments are being used as dumping ground for garbage, planting trees and wallowing of carabaos. The worst situation is being used as squatting ground, very prevalent on lateral D along the boundaries of the three (3) IAs in AMRIS as well as in Kahugpungan IA in Pulangui RIS.

The low priority in maintenance work by IAs can not be overemphasized. The sense of ownership attached to the facilities is wanting primarily because of the poor quality of membership, and the assets do not belong to the farmers, unlike in CIS. From an organization standpoint, the problem on poor maintenance can be attributed to the significant proportion of non-members. Non-members can not be relied upon to clean the facilities, and in fact they perpetrate the most number of infraction. In the same vein, the current practice of original landowners to assign proxy members, delegating cultivation rights to tenants, caretakers and hired labor, has aggravated the problem. These proxy cultivators can not be expected to render care and attention in the same way as the real owners can provide because of uncertainty in tenurial security. IA leaders as well have to be blamed because their interest in maintenance is restricted to collection of the compensation, and the money collected is not re-used for maintenance.

4.2.3 Attendance to Meeting

The participation rate to meeting is one indication of the association's cohesiveness. Only the three (3) IAs in Mal RIS regularly conduct BOD and GA meeting. The other IAs bother to hold BOD meeting while GA meeting is held on a need basis, based on the observed frequency and rates of attendance (Table 4.8). TSA meeting, which particularly emphasizes O&M practices are not held as often as possible. This is again an offshoot of the poor discipline among members caused by the absence of good role model leaders.

4.3 Finance

4.3.1 Revenue Generating Activities

The main source of revenue is remuneration from Type I and II contracts. Of the 17 pilot IAs, only Muchrist and Sandata IAs in Labangan do not have contracts. Collection of membership fees is negligible for two reasons. One is the meager amount of membership fee, and second, there is no seriousness on the part of the IAs to collect membership fees. Realization of Type I earnings is dependent on the timely payment by NIA. NIA is more than remiss of its obligation due to fund constraint, however.

As regards Type II contract, the earnings are not likewise favorable because of low ISF collection efficiency by IAs. The effective ISF collection efficiency for both the wet and dry seasons during 1999-2001, based on physical area was barely 30-40% (Ref. Table 4.9). The only exception were two IAs in Mal RIS (dry season),

and Labangan IAs (wet and dry seasons), where ISF collection efficiency were above 50%. The outlook is even poorer, if the IAs are grouped according to hydrological location and by NIS type. The dismal performance was enough to disqualify the IAs from participating, and worse can not receive any commission because ISF collection rate is below the threshold of 50%. Thus, the net incomes are negligible (Ref. Table 4.10).

ISF collection is basically a NISO activity. It is performed by almost all of the staff assigned in NISO because of the pressure to generate income mainly for salaries, even under Type II contract. ISF collection is likewise a favorable breeding ground for corruption (for NISO staff) because of anomalous reporting of both the billing and collected areas. Unless the records are accurate it would be difficult to increase efficiency. The anomalous reporting starts from the billing because the current system allows for exemption.

4.3.2 Market-related Activities

There is practically no activity involved in trading (Ref. Table 4.11). Palay is being sold directly to traders without the benefit of further processing, except for the IAs in Pulangui RIS, where 50% to 90% of production are sold as milled. The quality of palay being sold can not command the premium price because of high moisture content. Solar drying is done on multi-purpose pavement. During wet season, however, solar drying is limited because of preponderance of rain. This puts pressure on the IAs to dispose of their produce immediately right after harvest, at a time that prices are unfavorable. This is the argument raised by IAs about the low income received from palay production. Consequently, members postponed ISF payment.

5. Agricultural Production and Marketing of Pilot NIS Areas

5.1 Palay Production

Total estimated palay production in 2000 and the relative share to the provincial production for the six (6) pilot NIS is given below. With the exception of San Fabian and Labangan NISs, the production share of the other NISs is significant ranging from 20% to 30% of the total provincial production. Production in these NISs can thus influence the provincial output.

Palay Production in Six (6) Pilot NISs and Province

Pilot NIS	Estimated Total Production in 2000 (1000 ton)	Production Share to Province (%)	Province	Average Total Production in 1999-2001 (1000 ton)
San Fabian	10	2.0	Pangasinan	519
Angat	128	30.2	Bulacan	203
			Pampanga	221
Bago	66	25.9	Negros Occidental	255
Pulangui	80	32.9	Bukidnon	243
Labangan	18	9.3	Zamboanga del Sur	194
Mal	20	19.1	Davao del Sur	105

Sources of Data: National Irrigation Systems Office, Bureau of Agricultural Statistics (Sec. .2.3)

The significant contribution to provincial output of Angat, Bago, Pulangui, and Mal is largely due to their sizeable service area. In addition, the yield levels are within the provincial averages. The table below shows the service area and yield level vis-à-vis provincial data.

Service Area, Harvested Area and Yield of Palay: Six (6) Pilot NIS and Province

Pilot NIS	Service Area	Per cent share of Service Area to Harvested Area	2000Yield (ton/ha)	Province	1999/2001 Irrigated Harvested Area (1000 ha)	1999/2001Yield (ton/ha)
San Fabian	2,261	1.6	3.2	Pangasinan	144	3.6
Angat	25,715	22.8	4.2	Bulacan	55	3.7
				Pampanga	58	3.9
Bago	13,415	17.4	4.1	Negros Occidental	77	3.4
Pulangui	11,742	17.8	3.4	Bukidnon	66	3.8
Labangan	2,760	4.5	3.9	Zamboanga del Sur	62	3.1
Mal	2,781	11.6	4.0	Davao del Sur	24	4.4

Sources of Data: National Irrigation Systems Office
Bureau of Agricultural Statistics (Sec 2.3)

5.2 Livestock and Poultry Population

The population of selected livestock and poultry is given in the table below. The population gives an indicative parameter on the extent of growing the animals either for commercial purpose and/or supplementary source of income. It is noted that San Fabian and Angat are extensively in broiler production, while Pulangui is extensively in cattle, swine and duck production. Labangan is in goat raising. It can be inferred that families in these NISs are engaged in the fattening of these animals, and the introduction of livestock raising as supplementary source of income is likely to be welcomed.

Livestock and Poultry Population in Six (6) Pilot NISs: Year 2001 (In heads)

Pilot NIS	Livestock				Poultry		
	Cattle	Carabao	Goat	Swine	Broiler	Layer	Duck
San Fabian	2,569	1,173	5,343	9,920	162,856	6,245	4,436
Angat	711	589	475	6,646	134,571	24,761	24,440
Bago	433	421	2,682	13,940	77,587	43,508	38,650
Pulangui	66,265	11,603	12,723	103,321	78,155	41,832	284,916
Labangan	2,356	4,022	38,485	32,352	5,880	684	2,876
Mal	7,063	11,057	13,325	30,742	2,378	3,993	10,936

Source: Bureau of Agricultural Statistics
National Irrigation Systems Office

5.3 Marketing of Palay and Other Farm Products

The usual trader-farmer relationship dominates the marketing of palay. This practice persists because most farmers are heavily indebted to LBP (under the old lending program on cooperatives). The easiest way to get their short-term credit is to go to traders, and in return, pay their loans with their production during harvest period. There are two implications of this practice: (a) farmers normally secure their short-term credit at prohibitive interest rate (more than 10% per month); and (b) deprives them of postponing and even further processing the selling of their palay for higher prices. Compared with the provincial average in 2000, farmgate prices of palay in San Fabian, Bago, Labangan and Mal were lower by about 8% (Sec. 2.4). On the other hand, farm gate prices in Angat and Pulangui were higher by about 6% to 9%, respectively.

The destination of palay and other farm products is given below. There exist a number of multi-purpose agricultural cooperatives within the vicinity of the pilot NISs. An interesting observation is that most of these cooperatives are active. However, most of them are bankrupt and hence can not perform marketing services to farmers. The operating income of these cooperatives is given in the table below.

Destination and Landing Centers for Palay, Rice, Corn and Livestock

Pilot NIS	Trading Centers
San Fabian	Dagupan, Pozurrubio and Urdaneta
Angat	Malolos and Baliuag
Bago	Bacolod and Bago
Labangan	Labangan and Pagadian
Pulangui	Valencia and Malaybalay
Mal	Digos and Matanao

Source: National Irrigation Systems Office

Number of Multi-Purpose Agricultural Cooperatives

in the Vicinity of Six (6) Pilot NIS

Pilot NIS	Agricultural Coops		Financial (In Php)		
	Number	Per cent Active	Income	Expenses	Operating Income
San Fabian	10	100	1,634	5,508	-3,874
Angat	32	38	/a	/a	/a
Bago	7	70	2,830	1,840	990
Labangan	11	90	1,240	12,250	-11,010
Pulangui	20	90	16,685	53,992	-37,307
Mal	44	80	12,348	39,794	-27,446

Source: Cooperative Development Authority, /a No data

5.4 Rice Supply and Demand

The estimated supply and demand for rice is given in the table below. The estimated available supply in crop year 2000 in the pilot NISs is more than adequate to meet the demand in the municipalities where the NISs are located, with the exception of San Fabian. Large volume of surpluses is evident in Angat, Bago and Pulangui. These pilot NISs are relatively stable rice suppliers, and thus the excess supply is likely to satisfy inter-regional market requirements.

Estimated Supply and Demand in Pilot NISs, Crop Year 2000

Pilot NIS	Supply/a (In 1000 ton)	Municipality	Demand /b (In 1000 ton)	Surplus/Deficit (In 1000 ton)
San Fabian	6.5	Manaog and San Jacinto	10.3	-3.8
Angat	83.2	Baliuag and Apalit	33.5	49.7
Bago	42.9	Bago City	21.3	21.6
Labangan	11.7	Labangan	2.8	8.9
Pulangui	52.0	Valencia	11.5	40.5
Mal	13.0	Hagonoy and Matanao	6.3	6.7

Source: JICA Study Team and Bureau of Agricultural Statistics, /a Estimated using 65% milling recovery, / b Estimated using the provincial per capita consumption of rice

5.5 Post-Harvest Facilities

Solar dryers (concrete floor) and small-scale rice mill are the common facilities, and both are privately owned by influential people in the pilot NISs. The cost for drying palay is roughly 1.00 peso per 50-kg (cavan). Information obtained from sampled pilot NISs revealed that the capacity of existing rice mill in the villages is adequate. A single unit of rice mill normally services about 50 to 150 ha in the pilot NIS, depending on capacity. What are perceived to be lacking are solar dryers, mechanical dryers and warehouses. Sampled NIS in Pulangui and Mal showed that solar dryers normally provide service to about 40 to 150 ha.

Compounding this acute lack of dryers is the poor condition of farm-to-market roads. The prohibitive cost of transport dampens the farmgate prices of palay.

Because of inadequate drying and warehousing facilities, the practice (by IAs) of consolidating farmers production and bring them to nearby trading areas for possible auction from private traders is hardly resorted to as part of the marketing strategy. Exploring this avenue at the provincial level merits favorable opportunities.

5.6 Crop Budget

Based on the data collected through the survey, crop budget was prepared to show the potential income from paddy production. The net income is directly influenced by yield. The change in net income is very significant when the average yield is increased. This implies the critical importance of timely delivery of water, which affects directly higher achievement of yield. In addition, the cropping intensity is also improved.

6. Problem and Objective Analyses Made by IAs

6.1 Elements of the Problem and Objective Trees

Table 6.1 summarizes the substantive elements of the problem and objective trees prepared by the IA leaders, members and non-members. The discussion below provides an integrated description of the problem and its causes, and the objective to address the problem.

6.2 Organization

The core problem is essentially poor governance, the extent or degree of seriousness of which depends on quality of leadership (management) and members. The so-called core management team is either missing or if it were existing, the system (absorptive capacity) is far from satisfactory. It is actually de-facto organization. Descriptions put forward to describe this problem include non-functional association (San Fabian IAs), weak leadership and management and inability to execute rules and procedures (IAs other than San Fabian). The immediate causes are given in the table below.

Immediate Causes of Poor Governance

Membership Flaws	Leadership Flaws	System and Procedural Flaws
• Low membership • Few active members • High incidence of absentee cultivators • High incidence of tenancy, caretakers, etc. • Low awareness about responsibilities • Low level of skills	• Low level of skills • Dearth of role models • Low awareness about responsibilities • Dearth of potential cadre of leaders • Inactive BOD, TSAG and other officers • Incompetent Officers	• Dearth of record keeping • Irregular elections • Irregular meetings and assemblies • Defective formulation of policies, rules and regulations • Weak information communications program (membership and obligations) • Weak coordination (inter and intra linkage) • Arbitrary and ad-hoc relationship among committees and day-to-day activity • Unwieldy TSAG size and IA boundary • Absence of financial control (transparency and audit)

Source: Table 6.2.1

Consequently, the objective advanced by the IAs is to have strong and viable associations capable of providing services to improve the income of members.

6.3 Operation and Maintenance

The core problem is generally low performance on O and M. This stemmed from the inability to manage properly water demand and undertake essential maintenance. While shortage of water supply may also be a contributing factor, the over use of water, particularly in upstream areas normally results in inequitable allocation. The immediate causes are given in the table below.

Immediate Causes of Low O and M Performance

Water Management Flaws	Maintenance Flaws
• Inequitable water usage • Uncontrolled water distribution • Cropping calendar and water delivery infractions • Limited skills in formulating of O and M plans and policies • Weak enforcement of O and M plans • Limited dissemination of crop and water technologies (agricultural extension) • Limited capacity of canals	• Willful neglect in canal clearing • Rampant infractions (illegal turnouts, dumping of garbage, illegal checking, etc.) • Limited penalties and sanctions

Source: Table 6.3.1

The objective stressed by the IAs is essentially to enhance the use of better water management practices (e.g. water conservation) and undertake their obligations in

essential repairs and maintenance to increase effectively the cropping area and prolong the economic life of the facilities, respectively.

6.4 Finance

The core problem is the low level of financial viability. The IAs is basically cash-strapped or suffers from the problem of having unstable source of quick or liquid funds. Access to formal credit sources is difficult due to unsettled arrears of members (from previous government lending program), and being a mere association (and not as a cooperative) make them also ineligible to the lending window of LBP, the government's main supplier of agricultural credit. The immediate causes are given in the table below.

Immediate Causes of Low Financial Viability

Low Revenue	Financial Planning
• Poor collection of ISF	• Low skills in book keeping, basic accounting and other record keeping
• No collection of membership dues	• Low skills in financial/ investment management
• Restricted income (besides Type I and II contracts)	• Dearth of financial records
• No capital build-up (CBU)	
• Delayed compensation by NIA of Type I and II contracts	

Source: Table 6.4.1

The objective stressed by IAs is to become financially viable under a two-pronged approach: (a) greater and active collection efforts to increase ISF collection and other dues, and gradually expand to other income-generating activities and (b) continuous education on financial planning and project preparation/execution.

7. Assessment of IA Action Plans

7.1 Procedure

Under the supervision of the Study Team, the 17 pilot IAs prepared individual action plans based on the results of the problem and objective tree conducted in the PCM workshops. Participants in the PCM workshop were expanded to include members and non-members as well, particularly tenants and caretakers to be able to get an objective assessment of the recurring problems of the IAs relative to their organizations and activities. These individual action plans were integrated to become the IA strengthening action plans covering the six (6) pilot NISs.

Three (3) broad areas of concerns, notably organization, operation and maintenance (O and M) and financial performance which emerged during the conduct of the workshop on Framework Action Plan on July 18 – 19, 2002 (Ref. Chapter 8) were used to stratify the intervention areas. The PDMs and plan of operations covering five (5) sub-projects under the broad areas of concerns were then prepared as follows:

1. IA Organization
   Sub-project 1.1 Building Productive IAs
   Sub-project 1.2 Installing Management Competencies
2. IA O and M Activities
   Sub-project 2.1 Formulating Rational O and M plans and policies
   Sub-project 2.2 Implementing Effective O and M
3. IA Financial Performance
   Sub-project 3.2 Collection Enhancement of ISF and IA Dues

7.2 Outputs of Action Plan

For each pilot IAs, the integrated outputs and activities covering five (5) sub-projects are presented in Table 7.1. The outputs emerged as a result of consensus building among the members and officers of the IAs. The Study Team recommended the adoption of outputs in other NISs to the extent that they are essential based on the analysis of the problem tree.

7.2.1 Sub-Project 1-1: Building Productive IAs

The components of building productive IAs are summarized in the table below. It should be noted that the components are basic to formation of organizational structures. Virtually all of the pilot IAs (with the exception of the IAs in Mal) would require such intervention. The implication is that there has been serious deterioration in the absorptive capacities of these IAs. They can not be relied upon to assume the greater role of NIA in future IMT activities unless fundamental restructuring is restored.

Outputs Required by Pilot IAs, Sub-Project 1-1

Components/Outputs	Water Constraint NIS	Potentially Un-exploited NIS				Market -Away NIS
	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
1. Activation of members						
• Updated master list	○	○	○	Δ	Δ	
• Mandatory registration of water user/farmers	○	Δ	○	Δ	○	○
• Mandatory participation of farmers in all activities	○	Δ	○	○	○	○
2. Improvement of leadership quality and functions						
• Regular election of officers and TSAG leaders	Δ	○	Δ	Δ	Δ	Δ
• Regular meetings and establishment of functional committees	○	○	Δ	Δ	○	Δ
• Review of by-laws	Δ	○	○	Δ	Δ	
3. Reorganization						
• Re-delineation of service area based on hydrological feature	Δ	○	○	○		

○-IA Recommendation Δ- Study Team Recommendation

7.2.2. Sub-Project 1-2 : Installing Management Competencies

The components of installing management competencies are summarized below. In general, the pilot NISs would require most of the elements (sub-components) of the major components, especially training of leaders, record keeping and networking with support institutions. It is to be noted that these are consistent, as a preparatory step, in the establishment of management competencies. The case of Mal is rather an exception due to its higher state of organizational maturity vis-a-vis other NISs.

Outputs Required by Pilot IAs, Sub-Project 1-2

Components/Outputs	Water Constraint NIS	Potentially Un-exploited NIS				Market-Away NIS
	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
1. Improvement of systems and procedures						
• Systematic record keeping and update administrative records	○	○	○	○	○	○
• Establishment of working/standing committee	○	Δ	○	Δ	Δ	
• Reconfirmation of juridical status with SEC	○	Δ	Δ	Δ	Δ	Δ
2. Setting-up of networking system						
• Formation of IA council(s)	○			○		
• Establishment of linkages with NIA, LGUs, inter-IAs, etc	Δ	○	Δ	○	Δ	Δ
3. Training						
• Skilled/trained officers and leaders	○	○	○	○	○	○
4. Infrastructure Support						
• Establishment of a permanent office			○	Δ		

○-IA Recommendation Δ- Study Team Recommendation

7.2.3 Sub-Project 2-1 : Formulating Rational O and M Plan and Policy

The components of formulating rational O and M plan and policy are given in the table below. The components are essentially divided into enhancing the skills of officers and members in the formulation of O and M and establishing the support systems for execution. In general, the pilot NISs would require majority of the elements in the two (2) components, except in the adoption of integrated cropping calendar and extensive application of Type I and II contracts.

Outputs Required by Pilot IAs, Sub-Project 2.1

Components/Outputs	Water Constraint NIS	Potentially Un-exploited NIS				Market-Away NIS
	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
1. Improvement of skills in plan and policy formulation						
• Written and practical O&M policies & regulation	○	○	○	○	○	○
• Adoption of integrated cropping calendar	○	Δ	Δ	Δ		
• Adoption of water delivery and distribution schedule	Δ	○	○	Δ	Δ	
2. Support mechanism to plan and policy execution						
• Establishment of coordination among Inter-IAs	○	Δ	Δ	Δ	Δ	○
• Extensive application of Type I and II contracts			○	○		○
• Mandatory/active participation of members in O&M	Δ	Δ	○	○	Δ	○

○-IA Recommendation Δ- Study Team Recommendation

7.2.4 Sub-Project 2-2 : Implementing Effective O and M Plan and Policy

The components of implementing effective O and M plan and policy are summarized in the table below. The components are essentially strict enforcement of water management and maintenance policies and setting up the means for proper execution. In general, the pilot NISs would require practically all of the elements of the major components. An exception is in San Fabian, where there is a perceived need to control the use of shallow tube wells as a supplementary source of irrigation water during the dry season.

Outputs Required by Pilot IAs, Sub-Project 2.2

Components/Outputs	Water Constraint NIS	Potentially Un-exploited NIS				Market -Away NIS
	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
1. Strict enforcement of O&M plan and policies						
• Effective and equitable water distribution schedule	○	○	○	○	○	○
• Preventive maintenance of irrigation canals and farm ditches	○	○	○	○	○	○
• Repair and rehabilitation of irrigation canals and roads	○	○	○	○	○	○
• Sanctions and penalties for O&M violations	○	Δ	Δ	○	○	○
• Shallow tube wells as supplementary	○					
2. Restoration of conflict and service committees						
• Resolution of conflict between upstream and downstream IAs in water distribution	Δ	Δ	○		Δ	Δ
• Activation of service committees and TSA groups for effective execution	Δ	○	○	○	Δ	

○-IA Recommendation Δ- Study Team Recommendation

7.2.5 Sub-Project 3-2 : Collection Enhancement of IA's Dues and ISF

The components of are summarized in the table below. The components are focused on improving collection systems and procedure; enhancing the skills of leaders and officers on basic accounting and financial management; and expanding market-related and other income activities. The Pilot NIS would generally require practically all of the elements of the three (3) major components. The only exceptions are renewal of Type I and II contracts and operation of assembly markets, where these sub-components would be needed only in Bago, Labangan, and Mal and Pulangui.

Outputs Required by Pilot IAs, Sub-Project 3-2

Components/Outputs	Water Constraint NIS	Potentially Un-exploited NIS				Market-Away NIS
	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
1. Improvement of collection systems and procedures						
• Formulation of sound policies and procedures on ISF collection and members' dues	○	○	○	○	○	○
• Setting-up financial control-recording, budgeting and audit	○	○	○	○	○	○
2. Improvement of Skills						
• Training of officers and leaders-bookkeeping, financial management, project preparation, etc.	○	Δ	Δ	○	Δ	Δ
3. Establishment of market-related and other income activities						
• Fund raising project	○	○	Δ	Δ	Δ	Δ
• Enhancement of CBU scheme	○	Δ	Δ	Δ	Δ	
• Extension/renewal of Type I and II contracts			○	○		○
• Micro-lending (livelihood) assistance	○	○	○	○	○	Δ
• Operation of assembly markets			Δ		Δ	○

○-IA Recommendation Δ- Study Team Recommendation

7.3 Action Plan Inputs

The inputs required to implement the components are summarized in Table 7.2. The nature of the inputs recommended by the IAs is variable, and seemingly specific to the conditions of the IAs. The technical assistance may thus vary from one IA to another. For purposes of global programming of budget, the inputs can be broadly categorized into manpower and logistics support.

8. Resources of Government Agencies and Agreement with IAs

Table 8.1 presents a summary of the potential resources of government agencies (other than NIA) which the IAs can avail of to support their technical and financial requirements. The resources provide a menu of possible assistance. This was decided upon in a one-day workshop in every pilot site where the IAs presented their action plans to the concerned public agencies. The agreements with the IAs focused on the following:

(1) As regards training, it is open to any IA as long as the requesting party is able to satisfy the minimum requirements. This requires counterpart support, not necessarily in the form of monetary consideration. IAs have plentiful options coming from the various training assistance by concerned government agencies.

(2) As regards credit, the main suppliers are LBP and QUEDANCOR. The foremost requirement is that, the members must not have any pending arrears with both credit suppliers, after which the IAs will have to satisfy the other eligibility requirements. The requirement on "being cooperative" can be waived through a special lending window for recognized group of farmers.

(3) As regards marketing assistance for palay, NFA can give priority to IA as long as the minimum volume is met, which implies the need for consolidation of IAs production.

(4) Assistance from municipal and barangay LGUs, especially settlement of conflicts and disputes on water distribution and other infractions can be negotiated through amicable settlement rather than the tedious process of legal suits. In addition ordinances to prevent infractions can be initiated at the barangay level.

(5) Direct monetary support for maintenance of access road and other minor repairs of irrigation facilities can be secured from the development fund of concerned LGUs, to the extent that they are available. IA leaders were thus

encouraged to coordinate with their respective barangay captains for programming of funds.

9. Procedure for Action Planning

The NIA counterparts and JICA Study Team jointly prepared the action plan framework for IA strengthening based on the results of workshops and studies undertaken during the first field survey. The framework of the action plan was finalized incorporating the results of the detailed PRA surveys conducted during the second field survey. The action plans prepared by the pilot IAs in six (6) NISs, and subsequently reviewed and analyzed by the Study Team constituted the integrated IA Strengthening Action Plans.

The highlights of the workshops and studies conducted since the commencement of the Study are described below:

1) Outcome of the Orientation Workshop Held on May 14-15, 2002
   Technical staff of NIA's central and regional offices identified the support requirements for IA strengthening. The objectives, weaknesses, recommendations and responsibilities, including the schedule required to implement specific components were identified per broad area of concern: organization, operation and maintenance (O and M) and financial performance.
2) Inventory data of 2,048 IAs and results of the functionality survey of 1,769 in 2001were collected and analyzed by the JICA Study Team. This facilitated in the classification and selection of pilot NISs and IAs.
3) The assessment of 200 IA questionnaire survey prepared by the JICA Study Team facilitated in the stratification of IAs included in the pilot IAs.
4) Outcome of the Framework Action Plan Workshop held on July 18 -19, 2002
   The workshop resulted in the preparation of the problem and objective trees on organization, O and M and financial performance, including the individual project design matrix. This was prepared applying the project cycle management (PCM) method. The participants of the workshop comprised of fifteen (15) NIS Superintendents, three (3) regional IDD staff (Region III, VIII and IX), twelve (12) IDD staff and JICA counterparts.
5) Post Workshop Activities for Preparation of Draft Action Plan Framework
   Three (3)-working groups were organized to verify and revise jointly with the JICA Study Team the problem and objective trees and PDM of each area of concern, together with the plan of operations (PO). After a consensus was decided, the JICA Study Team finalized the problem and objective trees and

the PDMs. The action plan framework was mainly prepared considering the overriding objective on how NIA can assist the IAs to become viable and self-reliant organizations.

6) PRA Survey and Finalization of the IA Strengthening Action Plans

The PRA survey gave the opportunity to reflect the opinions and suggestions of a diverse group of participants composed of IA leaders, members, non-members, including the NISO staff and personnel from local agencies in the finalization of the strengthening action plans. The participants were mainly chosen from the 17 pilot IAs (six NISs) and invited local agencies. The pilot IAs prepared their action plans per NIS and these were assessed and used for preparing the final version of the IA strengthening action plans.

10. Framework of the Action Plan for IA Strengthening

10.1 Framework Preparation

The workshop held on July 18 and 19, 2002 provided the major inputs in the drafting of the framework of the action plan. This was further substantiated in a series of post workshops. The major highlights of the assessment given below served as the foundation of the action plan framework.

1) Assessment of problem trees

The major findings of the problem trees comprised as follows:

(a) IA Organization: Weak organizational capacity of IAs to manage irrigation system is caused by:

1st Causes	2nd Causes
Only 20-50% members are active	• 50-90% members are not following O&M regulation and policies. • Around 80% of IAs have same set of officers, no democratic election. • 50% of TSA leader are inactive.
Internal funds are not enough to sustain IA activities	• Financial management system is not established in IAs. • Collection of IA membership feeds is low.
Only 10% of members are able to do situational analysis, planning, monitoring and evaluation.	• Skills gained in leaders' training are not continuously used. • Training package is provided only to about 10% of IA members. • There is no evaluation on training.
NIA, particularly the NISO does not provide assistance for IA organizational strrengthning.	• NIA, particularly the NISO does not have both the quality and number of IDOs to perform institutional activities.

(b) IA O and M Activities: Weak O and M systems and procedures at the IA designated service area is caused by:

1st Causes	2nd Causes
Most O&M plans are not implemented.	• Most of IAs have no written O&M policy and plan.. • Unfair O&M policy and plan. • IAs and NIA can not strictly implement O&M policy and plan. • Less IA membership and active members. • No advantage of joining IA activities.
Water delivery and distribution are not properly implemented.	• Inadequate water resources. • Deteriorated facilities and structures. • Waste irrigation water in the system. • Water users do not follow water distribution plan. • Inadequate skills in water delivery and distribution .
Participation of members to system maintenance and repair is limited at 30-50%.	• Many IA members are dissatisfied with IA activities. • 75% of IAs or more do not have funds to support O&M. • IA activities are not properly monitored.

(c) IA Financial Performance: Low Level of financial Performance is caused by:

1st Causes	2nd Causes
NIA's inability to satisfy its obligations on Type I and II and other IMT contracts.	• Unupdated masterlist of farmer beneficiaries. • Delays in processing IA share and remuneration by NIA. • Delayed payment of IA share and remuneration by NIA.
90% of IAs are cash-starved, practically no funds for financial transactions.	• Poor collection of IA dues. • Only 45% of IAs pay ISF promptly. • Minimum increase of production and income among IA members
No adequate financial plan (planning, budgeting and control).	• IAs have limited skills in financial recording and fund source. • IAs lack skilled and dedicated financial managers.

2) Preparation and Assessment of objective trees

The participants prepared the objective trees and identified sub-projects. The sub-projects were prioritized by applying criteria such as doable, magnitude of effect, increase in farm income, etc. The selected sub-projects are summarized as follows:

(a) IA Organization

Priority 1 Building Productive IAs (capacity and team building)
Priority 2 Installing Management Competencies
Priority 3 Providing Appropriate Assistance for IA's Organizational Strengthening
(Priority 4 Strengthening IA's financial management)

(b) IA O and M Activities

Priority 1 Formulating Rational O&M Policy and Plan
Priority 2 Implementing Effective O&M

Priority 3 Providing Appropriate Assistance for IA O&M Activities
(Priority 4 Strengthening IA's financial management)

(c) IA Financial Performance

Priority 1 NIA's Financial Management Strengthening
Priority 2 Collection Enhancement of IA's Dues and ISF
Priority 3 Assistance for IA's Capacity Building on Financial Management and other activities

3) Preparation of Project Design Matrix (PDM) and Implementation Schedule

Three (3) priority sub-projects per respective area, and a total of nine (9) sub-projects were finally selected for IA strengthening. The PDMs for nine (9) sub-projects and their implementation schedule were drafted.

10.2 PRA Survey and Preparation of IA Strengthening Action Plans

Under the PRA survey, the pilot IAs prepared their action plans focusing on five sub-projects: 1.1) building productive IAs; 1.2) installing management competencies; 2.1) formulating rational O and M policy and plan; 2.2) implementing effective O and M; and 3.2) collection enhancement of IA's dues and ISF.

Following the assessment made in Chapter 7, the contents of the PDMs and Plan of Operations prepared during the first field survey were revised incorporating the outcome of the pilot NIS-IA action plans.

10.3 Action Plan Framework for IA Strengthening

The following nine (9) sub-projects were assessed reflecting the action plans prepared by the pilot IAs. The elements of the action plan framework for the three areas of concerns are enumerated below. The inter-linkage of three areas of concerns and the respective sub-project is shown in Figure 10.1.

1. IA Organization
   - 1.1 Building Productive IAs (capacity and team building)
   - 1.2 Installing Management Competencies
   - 1.3 Providing Appropriate Assistance for IA's Organizational Strengthening

2. IA O&M Activities
   - 2.1 Formulating Rational O&M Policy and Plan
   - 2.2 Implementing Effective O&M
   - 2.3 Providing Appropriate Assistance for IA O&M Activities

3. IA Financial Performance
   - 3.1 NIA's Financial Management Strengthening
   - 3.2 Collection Enhancement of IA's Dues and ISF
   - 3.3 Assistance for IA's Capacity Building on Financial Management and other activities

The above nine sub-projects are inter-related with one another. The basic elements given above will serve as guideposts in the understanding of the organization, the roles of IA members, benefits and duties in O&M considered as essential to make a strong organization. Without deep understanding of the above elements, it would be difficult to formulate the required interventions.

IAs are principally organized for water delivery and distribution among members. Effective O&M activities are important to achieve equitable water distribution, and consequently lead to higher production of members. This will encourage members to pay ISF and IA dues thus ensuring higher collection of ISF.

The number of functional IAs is relatively small due to a number of factors, among which are technical (facility defects), social and economic constraints. For the IAs to initially develop into self-reliant organization, government assistance is still indispensable. Government efforts among the concerned agencies, however, to IA strengthening in the areas of organization, O&M and financial performance must be pursued in an integrated fashion to achieve maximum results.

NIA's deliverable assistance is limited to organizational and O&M activities. Financial support to IAs will require additional assistance from the other agencies in the areas of external audit, micro-financing, technical dissemination, post-harvest and marketing, livelihood program, etc. In addition, NIA's improved financial management system will be a key element to enhance the financial viability of IAs. For instance, improved NIA's internal fund management is required for prompt payment of ISF shares and other incentives to IAs.

10.4 Application of Action Planning Procedure

IA functionality survey initiated and supervised by NIA-IDD covers status of IA's organizational, O&M and financial performance and will be utilized for initiation of IA action planing. Using those IA functionality survey results, participatory diagnosis and IA strengthening action planing for IA's organization, O&M and financial strengthening could be effectively made involving farmer beneficiaries. The technical guideline for IA functionality survey, IA action planning using PCM method, and NISO-IA management module was prepared as IA Strengthening Module (Ref. Annex 11).

The action plans presented below are summaries of respective element for IA strengthening based on the NIA-JICA joint action planning and the PRA survey made in 17 IAs under six pilot NISs. The action plans will be implemented according to the situation of respective pilot NIS and IA. The action plan activities need to be monitored and evaluated and these results will be reflected for formulation of the national replication plan.

11. IA Organizational Strengthening Action Plan

11.1 Target Outputs and Necessary Activities

Targets were set to be able to achieve the objectives of the organizational strengthening plan at the end of the project. At the end of the project, the following targets are expected to have been achieved: (i) more than 75% of members are actively participating in meeting and O&M activities (Sub-project 1-1: Building Productive IAs); (ii) 90% of IAs have strengthened absorptive capacities capable of doing situation analysis, planning, implementation, monitoring and evaluation (Sub-project 1-2 : Installing Management Competencies); and (iii) 90% of IAs have received appropriate technical assistance in organizational concerns (Sub-project 1-3: Providing Appropriate Assistance for IA's Organizational Strengthening).

In order to achieve the targets, the following outputs and activities for NIA and IAs are planned to be undertaken (Ref. Table 11.1 to 11.3):

Sub-Project 1: Outputs and Activities for IA Organizational Strengthening

	Outputs	Activities
NIA	1. Registered and updating master list • Updated master list of IA members	1.1 Conduct complete enumeration of potential members. 1.2 Update jointly (NIA-IA) the master list indicating tenure status of each member
	2. Practical training schemes and organizational strategies • New strategies and procedures on community organization • New training modules to develop the capability of leaders and members	2.1 Assess functional structures of IAs and develop participatory and community-based organizational approaches, re: policy formulation, project management, conflict resolution, gender, leader selection, etc. 2.2 Conduct training impact evaluation and training needs analysis (TNA) in coordination with RIOs, NISOs, IAs and other agencies 2.3 Develop improved IA training packages, and conduct trainers' training, 2.4 Establish training teams at the regional and provincial levels to train leaders using improved methodologies 2.5 Establish coordination with other agencies to provide technical assistance to IAs

(table continued)

	Outputs	Activities
NIA	3. Uunified IMT policy • Policies, procedures and guidelines for the effective implementation of IMT	3. Review jointly (NIA-IA) the existing IMT contracts and draw up a comprehensive policy
	4. Active System Management Committee (SMC) • Functional SMCs in all NISs •	4. Establish SMCs in all NISs
IA	1. Active membership • Updated master list of members • Mandatory membership and registration of all farmers/actual tillers	1.1 Conduct BOD meeting to finalize membership criteria and profile of potential members 1.2 Request NIA/DAR to get the data on all potential water users/actual tillers 1.3 Prepare membership recruitment plan through the conduct of pre-membership seminar 1.4 Finalize new master list and submit application to SEC
	2. Improved leadership quality and functions • Regular meetings of BOD, general assembly and TSAG leaders • Regular election of officers and TSAG leaders • Updated by-laws to suit present conditions • Functional committees	2.1 Prepare agenda and conduct regular meetings 2.2 Establish proper documentation, provide copies of reports, and facilitate resolution of issues with participation 2.3 Identify potential leaders and implement regular elections 2.4 Conduct regular review and amendment of by-laws and notify members 2.5 Revive and activate all working committees to plan and execute programs and policies
	3. Enhanced skills • Training of at least 50% of members to become second line leaders	3. Deputize leaders to attend training programs and use them as trainers to train at least 50% of members using improved training modules
	4. Installed of systems and procedures • Systematic and updated administrative records	4.1 Install logbook system 4.2 Collect, review and consolidate records 4.3 Conduct proper turn-over of documents 4.4 Prepare records of discussion 4.5 Update records
	5. Established essential coordination mechanism • Established/organized linkage with inter-IAs and other support institutions • Established council/federation per NIS and at least one provincial federation	5.1 Conduct regular dialogues with LGUs and other support institutions 5.2 Organize and plan the establishment of councils 5.3 Conduct election of council officers 5.4 Study status of provincial federation 5.5 Execute an strengthening plan for provincial federation
	6. Re-organized TSA • Re-delineated service area based on hydrological features	6.1 Study service area and define cost-effective and manageable TSA 6.2 Consolidate TSA based on new hydrological boundaries
	7. IA Center Facility • Established physical center for office and training purposes	7.1 Arrange lands and building for IA center 7.2 Request for funding

11.2 Input Requirements

The input requirements for pilot implementation and nationwide replication are summarized as follows:

Sub-Project 1 : Inputs for IA Organizational Strengthening

	Inputs for Pilot NISs	Inputs for Nationwide Replication
NIA	• Budget for IDP activities • Original master list, parcellary map, and other records • Task force for IA organizational strengthening (central, region and field offices) • IDOs and Farmer Irrigators Organizer (FISs) • Consultation with IAs, RIOs, ISOs, other agencies • Study on organizational weaknesses , and present level of IA management skill • Study on IMT performance and IMT implementation guidelines • Monitoring and evaluation of pilot activities	• Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation
IA	• Venues and technical preparatory works for meeting and training • Attendance of IA officers and leaders during meeting and training • Travel expenses for officers and leaders • Members' counterpart for food during meeting and training • Voluntary works of IA members • Fund for record and filing system, and establishment of an IA center • Monitoring and evaluation of pilot activities	• NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA organizational strengthening • Monitoring and evaluation

11.3 Program Package for IA Organizational Strengthening

11.3.1 Updating of Master List

(1) Objective

The main objective of the updating is to ensure that all farmers (actual tillers) within the service area of the IA will be accounted for and will be the basis for restructuring the organization. The complete enumeration of actual and potential members stems from the low membership rate of about 40%. Of the actual members, only 20-50% are perceived as active.

(2) Strategy

The basic strategy is to conduct complete enumeration of all of the status of members, including non-members as regards tenure, land holding and utilization. This will form the basis for a mandatory membership to replace the existing policy on voluntary membership. The mandatory membership stems from the low participation of members in IA activities.

(3) Implementation Process

The updating of the master list will be done in parallel with the updating of the parcellary map. The updated parcellary map, if done properly, will present the correct lot boundaries and land utilization. This will form the basis of the physical area of farmers within the boundary of the IA. It is proposed that the parcellary map should be compared with the recent cadastral and tax mapping maps which are available at the municipal level to confirm existing land utilization.

A complete head count of all farmers is necessary to determine the composition of farmers in the master list. This will be done per TSA level. With the updated parcellary map, the corresponding lot number and area will be reflected in the master list together with the name of the actual occupants and his/her tenure status.

The NISO jointly with the IA will confirm the final master list. The updated master list will now be the basis of the membership restructuring such as selection of TSAG leaders and future core management team of the IAs.

(4) Expected Results

The updated master list will provide a clear profile of existing as well as potential members. This will facilitate reorganization and a better record for planing, especially in the delineation of irrigated and billing area. Erroneous reporting will be eliminated.

11.3.2 Election of Leaders and Officers

(1) Objective

The objective of conducting regular election of officers is to replace incompetent and overstaying leaders whose interests have been parochial to the organization. Most existing officers have been selected from leaders who do not have the knack for planning, execution, and control. Decision-making is relatively informal, with the exception of the advance IAs which is not more than 5% of total NIS-IAs. This is the primary consideration why most IAs is akin to de-facto organizations. Leaders and members are paying lip service to the associations' activities.

(2) Strategy

The basic strategy is to conduct regular election of officers in an atmosphere of transparency and democracy. Coercion from influential community leaders should as far as practicable be avoided.

(3) Implementation Process

The NISO will supervise the conduct of regular elections. The members will be given enough liberty, preferably during the general assembly at the beginning of the year to select their leaders without any duress from the NISO and/or other influential people in the community. Elections to be held in a democratic process will commence at the TSAG and each TSAG will choose a leader to be represented in the Board of the IA. The NISO will assist in the reproduction of

ballots and canvassing of votes. Members in coordination with NISO will decide the frequency of regular elections.

(4) Expected Results

The regular election of officers will promote efficiency in operations. Overstaying and incompetent leaders will be minimized. It makes possible the creation of core management teams, which can start formal decision-making and execution of activities. Competent leaders and officers are expected to set the visions and directions of the IAs.

11.3.3 Systems and Procedures

(1) Objective

The main objective of installing appropriate systems and procedures is to facilitate reporting and coordination of activities. Filing and recording appropriate records will be useful in the formulation and review of policies. Appropriate procedures will facilitate effective and efficient working relationship among the working committees, including coordination with other local organizations.

(2) Strategy

The basic strategy is to design: (a) simple and practical format to capture the information required and designation of permanent custodian officer to handle recording and processing and (b) an operations manual detailing the flow of responsibilities and chain of command within the IA.

(3) Implementation Process

The NISO together with a qualified trainer will assist the IA to set proper systems and procedures. This will involve basic record keeping, filing and processing. It is proposed that this subject be part of the training package to be given to IAs, preferably to the constituted core management staff. The process of conducting meeting and decision-making and review will be taught, beginning at the TSAG up to the federation level.

(4) Expected Results

Appropriate systems and procedures will facilitate efficiency in operations.

11.3.4 Farmland Trust Management

(1) Objective

The objective of farmland trust management is to minimize the incidence of absentee landowners. The proportion of absentee landowners is more than 50% in the pilot NISs. This type of land tenure structure affects the quality of participation in most IA activities. Because tenants and caretakers are just proxies to the real owner-cultivators, they seldom participate in IA activities, like canal clearing and attendance in meetings (Ref. Figure 11.1).

(2) Strategy

The basic strategy is to entice absentee landowners to entrust the custody of their properties to tenants, caretakers and other landless who have become members of the IAs. An advocacy program is one of the means to convince the absentee landowners to join in this form of land sharing scheme. The scheme does not diminish the landowners' ownership status of the land. The right to cultivate will be delegated to tenants and caretakers (under the trusteeship and stewardship of the IAs). The management transfer will be clothed with ample legal safeguards to protect both parties in the event of infractions.

Farmland trust management envisions a compromise sharing between the IAs and landowners who have lose their interest in farming in favor of better opportunities in the urban centers. Absentee landowners whose farms are being cultivated by tenants and caretakers have not taken advantage of applying proper farm inputs due to shortage of capital, the consequence of which is low farm productivity. The opportunity cost of keeping these farms unproductive is thus high.

(3) Implementation Process

The farmland trust management will be initially piloted in Mal NIS. The NISO jointly with the IA will initially conduct an advocacy forum among potential landowners detailing about the mechanics of the farmland trust management. The moment there is a consensus between the landowners and the IAs, the preparation of the contract document can be initiated. The assistance of the regional office will be needed in the drafting of the contract, including the provision of legal services to the IAs. The IAs jointly with the landowners will select the members who will till the land. The landowners, however, may wish to retain their previous tenants as long as they have become legitimate members of the IAs. It is proposed that the concept be tried first at the TSA of 30-50 ha-level so that logistics support,

notably short-term credit, preferably from QUEDANCOR can be secured manageably.

The IA will initially select a good farmer-member who can be assigned as farm manager to supervise the operations of the farm.

The implementation of the farmland trust management will generally require strong support from NIA and other public agencies.

(4) Expected Results

The expected contribution of farmland trust management is essentially economies of scale in farming operation. With land preparation under the control of the IA, it makes it easier to introduce synchronous planting. Members are assured of the timely procurement of farm inputs, proper planting of variety and on-time delivery of water because decisions are collectively made and implemented. Wasteful water delivery can be prevented. Farm inputs can be provided in bulk, and with the assurance of secured production, they can be negotiated for deferred payment, especially with established farm input suppliers. Members need not worry about the need for cash to purchase such inputs during land preparation.

The social significance of farmland trust management will be the employment security of tenants, caretakers, and landless laborers as cultivators. Since these groups of farmers have become members, the IA will ensure priority for employment in the farm covered by trust agreement.

In addition, positive effects are likely to be realized. These include: (1) intensive land cultivation thus potential for increasing crop productivity is ensured; (2) better coordination of activities for O&M by actual tillers; and (3) expanded ISF billing and collected areas, and consequently higher income for both the NISOs and IAs.

11.3.5 Training

(1) Objective

The main objective is to hone the skills of leaders and members in running the day-to-day operations of the associations. One of the crucial issues is how to put in place a core management team in every IA capable of functioning under sound management with market-driven initiatives.

(2) Strategy

The training will be focused on leadership and organizational discipline directed at leaders and officers. Live-in and role modeling approaches will be emphasized instead of the usual lecture and classroom-type of training.

The basic strategies are (a) linking the IAs with financial strengthening program such as capital build-up, micro credit, etc., and (b) cross posting of technical personnel who can act as role models. The CBU and micro lending activities can be the catalyst in the bonding of members, especially at TSAG level. The role model trainers will institute proper selection of leaders and disciplinary code of conduct. Selected role model leaders could eventually form the core staff. Role model leaders have the ability to instill disciplinary action in case of infraction and can overcome the culture of poor discipline among members.

(3) Implementation Process

A roving training task force coordinating team from the region, getting direct order from the IDD is proposed to assist the NISO in implementing the training program envisioned for organizational strengthening. The NISO will take the lead given its proximity to the IAs. It is proposed that at least two (2) competent IDOs[1] will be assigned in each NISO to prepare the quarterly program of work and day-to-day ground working with the IAs. Depending on the extent of the workload, more IDOs can be assigned. Hence, assistance from the region may be sought in the dispatch of the IDOs.

Trainers will be drawn from leaders of successfully managed cooperatives, CIS-IAs and/or similar institutions to form the core of the training staff (in case NIA can not provide the trainers). IA leaders who have undergone the training should be sent for cross visit and posting in the mother institutions of the trainers to get hands on experience in running the day-to-day activities of an organization.

The budget is proposed to come directly from the income of the NISO, and to be augmented with counterpart funds from the central office (management fee). The NISO should thus be given the flexibility to program the utilization of their income, and such flexibility will allow the NISO to strive for a higher collection of ISF and explore other sources of income. Being a revenue center, the NISO should be given a semi-autonomous status to generate the required funding.

[1] Assignment of one IDO per 700 to 1,000 ha was proposed by the JICA NIA Study on Strengthening of NIA's Management Systems.

11.3.6 Legal Amendment

(1) Objective

The objective is to review existing policies restricting the development of the IAs, including the promotion of IMT and formulate the changes as required.

Two existing policies restrict the development of IAs. First is the voluntary nature of membership. Voluntary membership does not give any distinct advantage of a member over a non-member. Both can use water provided they pay the ISF. A non-member can not also be compelled to participate in O&M activities. As such, non-members are bound to commit the infractions. Voluntary membership has also exacerbated the proliferation of proxy members, who can not likewise participate in IA activities, because the original landowners are the ones being recognized as legitimate members. Mandatory membership is thus recommended and actual cultivators should be considered the bona-fide member.

Second, the current incentive and other ISF exemptions distort the market in general. The 10% ISF rebate for prompt payment prejudices an IA member vis-à-vis non-member. The latter can keep the 10% rebate, while the former may lose it; if the IA decides that the 10% belong to the IA as a potential source of polled fund. If NIA really wants to entice membership, the rebate and exemption should only be applied to members. However, the rebate has not really been effective, and in fact should be abolished to increase ISF revenues. The ISF exemption also breeds corruption. Any NISO water master who is in cahoots with users of water can easily declare erroneous reporting on production, LIPA and billing area.

As regards the promotion IMT, NIA has not come up with a unified policy. Donor-funded projects have been implementing different IMT policies according to their own biases.

(2) Strategy

Intensified consultation with IA members and other stakeholders is the basic strategy to repeal the defective provisions of existing policies. This will ensure objective assessment and contribution from concerned beneficiaries.

(3) Implementation Process

A working committee will be designated to review and formulate new amendment to replace restrictive policies. Preferably, the committee should be chaired by the IDD and co-chaired by the Corplan. The committee will draw it members from

concerned departments and draft the policy changes (subject to the results of intensive consultation) and this will be submitted to the NIA Board for approval. Through the Board, an MC can be prepared. Enforcement of the MC will be coursed to the regions and field offices. The regions in coordination with the IDD will monitor compliance on the enforcement of the policies.

The Board will initiate legislative amendment requiring Congressional Approval. It is recommended that the Board will closely coordinate with the Legislative Executive Development Council to get these amendments conveyed to proper authorities.

(4) Expected Results

The policy/legal changes will remove the legal infirmities that restrict the development of strong and productive IAs. Mandatory membership will ensure compliance to most IA activities and removal of ISF incentives will increase ISF revenue.

12. IA O&M Strengthening Action Plan

12.1 Target Outputs and Necessary Activities

Targets were set to be able to achieve the objectives of the O and M strengthening plan at end of the project. At the end of the project, the following targets are expected to have been achieved: (i) more than 75% of members are effectively implementing O and M policies and plans (Sub-project 2-1: Formulating Rational O&M Policy and Plan); (ii) more than 90% of the IAs are distributing the water equitably (Sub-project 2-2: Implementing Effective O&M), and (iii) more than 90% of members have received appropriate assistance to sustain O&M activities (Sub-project 2-3: Providing Appropriate Assistance for IA's O&M Strengthening).

In order to achieve the targets, the following outputs and activities for NIA and IAs are planned to be undertaken (Ref. Table 12.1 to 12.3).

Sub-Project 2: Outputs and Activities for IA O&M Strengthening

	Outputs	Activities
NIA	1. Written and practical O&M policies • Written, practical and rational O&M policies and plans for each NIS jointly formulated by NIA and IA • Strict enforcement of O&M policies and plans	1.1 Deliberate issues affecting implementation of O&M policies and plans 1.2 Settle the issues jointly with IA through consultation with SMC considering equity and practicality in the use of water 1.3 Develop enforcement measures specifying penalties, incentive and responsibilities in NIA 1.4 Obtain LGU ordinance to prevent illegal dumping and squatting along canals 1.5 Adapt the Water Code for illegal water users 1.6 Assist IAs to formulate O&M policies and plans before start of cropping season
	2. Established Coordination System • Established and operational mechanisms for resolving conflicts among members and influential people in the community	2.1 Suggest and recommend strategies on how conflicts could be resolved 2.2 Request TSAG leaders to coordinate with SMC and LGUs to settle conflicts amicably
	3. Training package • Skilled WRFTs for preparation and implementation of O&M plans and policies	3.1 Develop improved IA training packages on O&M methodologies and other strategies 3.2 Establish training teams at regional and provincial levels 3.3 Conduct trainers training 3.4 Provide skills training to NISO's O&M staff 3.5 Establish liaison with other public institutions to provide technical assistance to IAs 3.6 Monitor and evaluate progress of training
	4. Enforcement of O&M policies and plans • Equitable distribution of water to IAs by NISO • Well maintained irrigation system by NISO • Rehabilitated irrigation facilities and structures • Improved and installed control structures and measuring devices	4.1 Prepare water distribution, and monitoring plan jointly with IAs under assistance from resource persons 4.2 Disseminate water delivery plan and schedule to IAs at accessible places (bulletin boards at every diversion and delivery point) 4.3 Implement operational plan within NIS jurisdiction 4.4 Monitor, record and evaluate water delivery 4.5 Conduct walk through inspection of irrigation facilities jointly with IAs after harvest and calamity 4.6 Implement maintenance plan within NIA jurisdiction 4.7 Develop efficient procedures for identification and prioritization of rehabilitation works through participatory approach 4.8 Rehabilitate and install control structures and measuring devices at intake and head gates 4.9 Modify turn-outs to proper size of pipe diameter for land preparation and provide gates for normal irrigation

(table continued)

	Outputs	Activities
IA	1. Written, practical and rational O&M policies and plans • Written, practical and rational O&M plans and policies • Integrated cropping calendar • Water delivery and distribution (WDD)	1.1 Conduct O&M orientation workshop for leaders 1.2 Facilitate consultation meeting with members 1.3 Prepare O&M information materials 1.4 Set-up information boards for notification/ratification of O&M policies 1.5 Jointly prepare with members the O&M plans and ratify accordingly through participatory process
	2. Established coordination system • Active participation and awareness of members for O&M activities • Resolution of conflict between upstream and downstream users • Activated TSAG and other standing committees	2.1 Request NIA to regularly convene the SMCs 2.2 Conduct regular dialogues with members 2.3 Activate service committees and clothe them with powers to resolve conflicts 2.4 Reorganize and mobilize TSAG leaders for intensive information dissemination
	3. Training package • Skilled BOD and TSAG leaders in the preparation and execution of O&M plans • Procedures for technology transfer	3.1 Request NIA to conduct live-in and role modeling training to leaders and members 3.1 Request NIA to conduct regular orientation on the preparation of O&M plans 3.2 Conduct training to at least 50% of members 3.3 Develop a methodology for transferring skills to members
	4. Enforcement of O&M plans and policies • Adopted integrated cropping calendar • Adopted water delivery and distribution schedule • Renewed Type I and II contracts • Maintained irrigation canals and farm ditches • Applied sanctions and penalties on infractions • Supplemental irrigation water from shallow well during dry season	4.1 Prepare jointly with NIA the cropping calendar and implement 4.2 Prepare WDD jointly with NIA and implement 4.3 Jointly conduct with NIA information dissemination programs about the cropping calendar and WDD 4.4 Request NIA to conduct orientation on contract provisions 4.5 Consult with members about incentive structure 4.6 Finalize Type I and II contracts and renew with NIA 4.7 Activate service committees to disseminate and enforce penalties 4.8 Conduct regular cleaning of canals and farm ditches 4.9 Request NIA to repair and rehabilitate damaged irrigation systems 4.10 Mobilize members for regular maintenance of canals and farm ditches 4.11 Close illegal turnouts and other illegal activities and enforce corresponding penalties 4.12 Request NIA to provide shallow tube wells at cost 4.13 Coordinate with LGU for additional funding support

12.2 Input Requirements

The input requirements for pilot implementation and the nationwide replication are summarized as follows:

Sub-Project 2: Inputs for IA O&M Strengthening

	Inputs for Pilot NISs	Inputs for Nationwide Replication
NIA	• Task force for IA's O&M strengthening • SMC and its meeting at NIS level • Budget for pilot activities including rehabilitation • Study on present level of O&M skills at NISO and IAs • NIA-IA joint study for preparing O&M policy and plans using; master list and parcellary map, layout map of irrigation, meteorological data, hydrological data, water requirement of crops • Study on rehabilitation plans and works jointly with NIA-IAs (hydrological data, map, engineering report, cost estimate) • Trainers training (Regional/provincial) and training packages (IA leaders and members) • Monitoring and evaluation of pilot activities	• Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation
IA	• Active participation of IA members • Updated master list • List of potential leaders • Counterpart Resources (food, venue of training/workshop/meetings, etc) • Local materials for repair and maintenance • Voluntary labor for O&M • Small farm tools and equipment • Member training program by IA trainers • Monitoring and evaluation of pilot activities	• NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA O&M strengthening • Monitoring and evaluation

12.3 Program Package for IA O and M Strengthening

12.3.1 Reactivation of TSAG

(1) Objective

The objective is to restore the functionality of dormant TSAGs to be the pivotal unit for water request, gate control, foot patrol, walk-through inspection, maintenance and ISF collection. It should be emphasized that the IA will be a lame duck organization in the absence of functional TSAGs.

(2) Strategy

The basic strategy is to activate only those non-functional TSAGs. This will involve assessment of the technical and organizational limitations of each non-functional TSAG. Corresponding solutions will be identified to remedy the problems identified.

(3) Implementation Process

The reactivation of the TSAG will involve the following processes: (a) updating of master list and parcellary map; (b) re-delineation of boundaries; and (c) review of size, location of turnouts, length and alignment of farm ditches.

The boundaries of the TSAG will be re-delineated based on the updated parcellary map. The corresponding size, location of turnouts and alignment of farm ditches will be reviewed and final specifications will be jointly designed by NISO in close coordination with the IA. The NISO to be assisted by the region will draw up a cost-effective and manageable TSAG size that will be initially implemented in the pilot NISs. Replication to other NISs will follow after the pilot tests have confirmed their applicability. From the reactivated TSAG, new leaders will be selected, preferably those with potential to become role models.

(4) Expected Results

With all the illegal turnouts having corrected and new sizes introduced, the distribution of water among users is expected to be equitable. O and M plans and policies are expected to be implemented with least resistance because the defects have been corrected.

12.3.2 Rehabilitation of System

(1) Objective

The objective of physical rehabilitation is to restore the functionality of the facilities to improve irrigation efficiency. Most canals require desilting work to restore their original function. About 50% of turnout gates are non-operational and not more than 50% of the facilities are functional, nationwide. The worst is San Fabian RIS, with less than 20% of its facilities as functional. Clearly, the only way to restore the original function of these facilities is through rehabilitation.

(2) Strategy

The basic strategy is to employ selective rehabilitation of facilities. Rehabilitation will be prioritized based on ISF collection efficiency. Systems with higher ISF collection efficiency will be preferred. In addition, full rehabilitation will not be a pre-condition to turnover of system management. The IAs will be made to co-share in the responsibility of rehabilitating the system.

The other strategy is to establish a CBU for the IAs to ensure stable funding for maintenance. Under the proposed CBU, part of the compensation to be paid to IAs that have entered into labor contracts (through large rehabilitation works) with NIA will become the CBUs of the IAs. The NIA jointly with the IA will decide on the amount to be allocated for the CBU

(3) Implementation Process

The NIA will jointly conduct with the IAs a walk through inspection to identify and prioritize the necessary rehabilitation works.

Replacement and/or rehabilitation of discharge measuring facility is one of the important works to be done. The measuring devices will be installed at the intake, headgate of canals and/or at the head of the IAs' lateral canals. This is to determine the accurate volume of water to be delivered to the IAs.

The second is to correct the arbitrary practice of turnout gate operation. The turnout is continuously open in land soaking and preparation period when water is mostly required and maintenance period when water is required in normal quantity. There is no control of water discharge by opening range of gate. And most of the pipes installed are oversized for assigned service area. . Adjusting the opening by slide board is thus recommended. A hole size of the slide board will be prepared to accommodate 4 types of operation to wit: rotation irrigation, land soaking and preparation, maintenance, and closing based on TSA. The slide board will be installed at the turnout based on type and stage of irrigation.

Monitoring of water distribution will be easier and done by all farmers when each slide board has own identified mark, such as coloring of the board.

The third is on-farm development to correct the physical limitations brought about by willful neglect in maintenance by IAs. The direct participation of the IAs in physical improvement using their labor and other materials will minimize dependency from NIA. The chances of members committing lesser infractions are greater because their own efforts have been expended in the improvement of on-farm structures. This institutional strategy has been proven effective in most CIS, and the same approach will be applied to NIS-IAs.

Taking advantage of these rehabilitation works, the establishment of a CBU for IA is recommended. Under the capital build-up scheme, part of the compensation to IAs that entered into labor contracts with NIA will be converted to a CBU, and this will be managed by NIA. NIA's capability, however, to do fund investment

management is virtually negligible, hence it is recommended that a reputable bank (jointly selected by NIA and IA) will be assigned to handle the CBU for short-to medium term investment in securities. NIA will turn over the CBU to the IA when the latter is prepared to assume its responsibility in IMT activities, and has acquired enough skills to execute effectively O& M practices.

(4) Expected Results

Conflict on the inequity in water distribution will be minimized since most facilities have been restored to their original function. Overall improved irrigation efficiency is expected to be achieved.

12.3.3 Enactment of O& M Policy

(1) Objective

The objective is to formulate written and practical O and M policies that are enforceable. The preparation of cropping calendar and water distribution plan is commonly observed. However, there is low compliance to implementation by IAs, varying from 20% to 70%. The issue thus pertains to the quality of preparation and enforcement of plans and policies.

(2) Strategy

The basic strategy is to actively involve the leaders and members in the formulation process. This will replace the NISO-driven policies that are mostly dislike by members.

(3) Implementation Process

The operation policy will specify the what, where, when, who, and how of plan preparation, implementation, and monitoring. Specific concerns will cover on water delivery (to include normal and water crisis cases), gate operation, cropping pattern, and maintenance facilities. Penalty will be clearly prescribed in the O&M policy.

Monitoring the compliance by the IAs on policies formulated, including the enforcement of penalties will be the responsibility of the various groups. The TSAG for instance will be responsible for members within TSA; IAs will be responsible for member-TSAGs; and NIA will be responsible for overall monitoring.

The preparation of water distribution and cropping calendar plans is essentially NISO-driven, that is continuous water supply and hardly does incorporate crop-water needs. Water conservation is missing, and continuous irrigation practice always prevails in the minds of IAs. Given the shortage of irrigation water experienced in many NISs during the dry season and also in the wet season, water saving farming currently under study through the collaborative efforts of NIA, IRRI, and PHILRICE will be considered. Rotation irrigation will be recommended to effectively increase irrigated area. Such methods will be reviewed for inclusion in the preparation of O&M policy.

12.3.4 Operations Improvement

(1) Objective

The objective is to introduce improved water management practices that will minimize wasteful utilization of irrigation water. Water saving measures will be emphasized to improve the cropping area.

(2) Strategy

As in the formulation of O and M plans, the basic strategy is to actively involve the leaders and members in operations improvement. Role model leaders will impart practical lessons to officers and members, preferably actual demonstrations on water delivery.

(3) Implementation Process

Operations improvement will focus on water delivery. The process will start from the preparation of water delivery using the water request submitted by the TSAG to the IA and the IA to the NISO. The TSAG will prepare the water request specifying, among others, canal name, TSA names or assigned number of turnouts, corresponding size of the irrigation area, starting on the day of irrigation. The water request will also declare completion of canal cleaning and maintenance in entire assigned canal stretch, commitment for ISF payment within due date, and consent on the penalty for any violation of the O&M policy. This scheme has been effective in increasing ISF collection, for NISs adopting this scheme.

In addition, the use of permanent billboards, besides each headgate, showing the water delivery schedule will be introduced.

The billboard is recommended to include a cropping calendar for monitoring operations' activities of the IAs.

Strict compliance by members will be complemented with the formation of foot patrol teams. IAs will be encouraged to organize their foot patrol teams to apprehend violations on water distribution. They will be deployed in the evening to prevent stealing of water. The foot patrol team will be composed of the WRFT and representatives of TSAGs. The WRFT will arbitrate conflict that may arise in case of unexpected stealing or illegal diversion of water.

(4) Expected Results

With improved operations, cropping intensity is expected to increase. This will translate to a higher irrigated area. Yield of paddy is also likely to increase because water is readily available when needed.

12.3.5 Maintenance Improvement

(1) Objective

The objective of maintenance is to ensure that the systems' facilities are free from defects. Maintenance work is reinforced through Type I contract. Indirectly, however, this practice has somehow exacerbated negligence among members to do their share in maintenance, especially when NIA fails to pay on time the IAs. The NIA takes about two-three cropping seasons to generate funds to pay for services rendered to IAs. This has prompted IAs to abandon their responsibility in canal clearing. The neglected condition of canals and other laterals, including major facilities is now very evident. Canals and its embankments are being used as dumping ground for garbage, planting trees and wallowing of carabaos, and even squatting is rampant.

(2) Strategy

The basic strategy is to involve directly the members in maintenance work. Strong advocacy through a communications program will be implemented at the TSAG level. Sense of ownership will be the key message in the communications program.

(3) Implementation Process

Maintenance of on-farm facilities will be the responsibility of IAs. Through the reactivation of the TSAGs, the IAs will entrust the maintenance of on farm

facilities to the TSAGs using the "bayanihan" practice. This will instill a sense of ownership to the system and thus enhance the promotion of preventive maintenance. Large maintenance work beyond the capability of the IAs will be done by NIA. However, the IAs will be given priority in providing the labor, and payment will form part of the CBU of the IAs.

The CBU will be a contingent fund of the IAs strictly reserved for maintenance work. Emergency repairs can be acted with dispatch through the CBU.

(4) Expected Results

With maintenance strictly implemented, the vicious cycle of repair and construction will be prevented. This will minimize cost for repairs and rehabilitation, and NIA as a whole can use the money intended for costly repairs to construct new irrigation projects.

12.3.6 Training

(1) Objective

The objective is to hone the skills of leaders and members in the formulation and execution of O and M plans and policies. This stems from the poor implementation of water delivery and distribution, and low participation by members in maintenance work. Only 30% to 50% of members participate in system's maintenance.

(2) Strategy

The training strategy will focus on addressing the basic issues in O&M, notably the poor quality of the plans and policies and lax enforcement of such policies and plans. The usual courses on systems management, irrigation management, operations and maintenance will be supported with innovative schemes, to permit the operationalization of synchronous planting under farmland trust management.

Conflict resolution will be emphasized and techniques for arbitration will be introduced, particularly in the allocation of water use between the upstream and downstream IAs. It is important that the SMCs are activated so that the conflicts can be resolved with dispatch.

(3) Implementation Process

It is proposed that at least two (2) trainers per NIS, with technical expertise in irrigation and farm management will be formed as the core training staff. These

trainers will immerse preferably with TSAG leaders. The TSAG leaders are expected to re-echo whatever approaches learned from the trainers. Monitoring and evaluation from the NISO and region's roving task force will be required to evaluate performance.

The IMT promotion center is proposed to be established under the direct supervision of NIA Administrator as a technical support and training facility showcasing successful practices of O&M where leaders and members can learn under an expanded laboratory cum hands on training on water management and maintenance. The promotion center will be equipped with facilities essential for conducting training and/or seminars. The center will essentially be a technical resource organization that can provide quick and responsive courses, trouble shooting and monitoring and evaluation. The acceleration of IMT will be one of the main concerns, given the complex issues affecting its implementation, among which are legal infirmities, contract sharing, delineation of system's maintenance, pricing of water, etc. The center will try to develop practical approaches to address such issues.

(4) Expected Results

With improved skills, it is projected that at least 90% of IAs will be able to formulate O and M plans and polices that can be implemented efficiently and effectively. The skills acquired by leaders and members will permit them to use better water management technologies and indirectly this will improve farm productivity and incomes. Maintenance of system facilities will be ensured and as such O and M cost will decrease.

13. IA Financial Strengthening

13.1 Target Outputs and Necessary Activities

Targets were set at the end of the project to be able to achieve the objectives of the IA Financial strengthening plan. At the end of the project, the following targets are expected to have been achieved: (i) ISF collection efficiency of 75% to 100% and prompt payment by NIA of ISF share to IAs (Sub-project 3-1: NIA's Financial Management Strengthening); (ii) ISF collection efficiency of 75% to 100% and 100% collection of membership dues (Sub-project 3-2: Collection Enhancement of IA's Dues and ISF), and (iii) more than 90% of members have received appropriate assistance in financial concerns (Sub-project 3-3: Assistance for IA's Capacity Building on Financial Management and Activities).

In order to achieve the targets, the following outputs and activities for NIA and IAs are planned to be undertaken (Ref. Table 13.1 to 13.3):

Sub-Project 3: Outputs and Activities for IA Financial Strengthening

	Outputs	Activities
NIA	1. Improved ISF collection policies and procedures • Improved ISF collection policies, strategies and procedural system under respective contract (Type I, II, II JSM etc), I • Timely payment of ISF share to IAs	1.1 Review and amend, if necessary, existing ISF incentives and exemptions 1.2 Review and amend, if necessary, existing ISF rates using appropriate water pricing strategy 1.3 Develop and implement cost-effective collection policies and strategies 1.4 Conduct dialogues with IAs, DA, DAR, DILG, and other agencies on legal and procedural system 1.5 Implement strictly existing Annotation Program 1.6 Establish institutional arrangement between LRA and NIA to prevent transfer of irrigated lands with ISF arrears 1.7 Design and implement mass media campaign on ISF collection to instill awareness among NIA employees 1.8 Study and modify existing procedures of monthly releases of sub-allotment advice requirements to facilitate timely allocation and processing of payments of IA remuneration and collection incentives 1.9 Study the generation of seed fund out of ISF shares to improve the liquidity of IAs 1.10 Reconcile and update IFRs, master list and parcellary maps to increase billing and collected areas.
	2. Training package • Simple and practical training packages on financial management • Custom-service oriented system for integrated financial services (audit, micro-lending, marketing and other livelihood) to be established at national, regional and provincial	2.1 Review through TNA all existing training on financial matters and design a simple and integrated financial management training for leaders and members 2.2 Establish a training core team on financial management system at the region and provincial levels to conduct hands-on and coaching jobs to leaders and members 2.3 Study and restore computerized billing system and institute a crash training for adoption of the computerized system 2.4 Institute IA financial auditing system and implement a basic course on audit 2.5 Collaborate and establish liaison with other agencies to get their technical and financial assistance for IAs 2.6 Conduct trainers training and establish training teams at regional and provincial level
IA	1. Internal ISF policies and procedures • 1 Defined and written strategies, policies and procedures for IA dues and ISF collection • Timely payment of ISF to NIA	1.1 Conduct dialogues and planning sessions with members and solicit ISF and members' dues policy proposals 1.2 Prepare the policies and implementing rules and guidelines and circulate for ratification 1.3 Implement the policies through intensive communications program 1.4 Monitor and evaluate performance
	2. Training package • Trained officers and leaders on financial management and bookkeeping, audit, etc.	2.1 Coordinate with NIA and present a training proposal 2.2 Design an appropriate financial management training using live-in and role modeling scheme 2.3 Conduct the training to at least 50% of members on financial management, and develop second line IA leaders (by IA trainers)
	3. Systems and procedures • System on financial recording, auditing and budget planning	3.1 Appoint bookkeepers and activate financial record keeping and audit 3.2 Consolidate all financial records, and develop procedural system for transactions and control
	4. Market-related and income projects • Renewed Type 1 and 2 contracts • Fund raising (capital build-up) and income generating policies and programs • Operation of assembly marketing	4.1 Negotiate with NIA for renewal of Type I and II contract 4.2 Prepare and submit documents to NIA, and install systems and procedures for implementation 4.3 Prepare fund raising and income generating policies and proposal 4.4 Discuss in assembly meeting and ratify for implementation 4.5 Prepare specific project proposal (through assistance from NIA and other agencies) 4.6 Solicit the funding requirement and counterpart fund from members 4.7 Implement and monitor performance 4.8 Prepare a plan of action for assembly marketing program 4.9 Conduct market research and market planning workshop, 4.10 Conduct training to leaders on operations (bulk volume transport and deposit, invitations of potential buyers, pricing, etc. 4.11 Install, the market center

13.2. Input Requirements

The input requirements for pilot implementation and the nationwide replication are summarized as follows:

Sub-Project 3: Inputs for IA Financial Strengthening

	Inputs for Pilot NISs	Inputs for Nationwide Replication
NIA	• Task force for ISF collection increase at NIA • Task force for IA financial management strengthening with other agencies • Committee with IAs, DA, DA, DAR, DILG/LGUs, LRA on ISF collection • Budget for IDP activities for training and technical assistance • Skills training, hard ware and software for computerized billing system • Market information network among IAs (NIS/CIS), traders, LGUs, etc. • Fund for IA's other service activities (livelihood, post-harvest facilities) • Post-harvest technician for IAs' marketing activities • Monitoring and evaluation of pilot activities	• Nationwide replication program • Fund arrangement • NIA-IA joint study and implementation for IA's financial strengthening • Training program for NIA-IA • Monitoring and evaluation
IA	• Working teams at concerned region and NISOs • NIA-IA joint study and implementation for ISF collection increase • IA task force per TSA for ISF and membership dues collection • Participation of IA wives in collection members' dues • Attendance of IA officers and leaders during workshops and training program • Member training program by IA trainers • Local counterpart fund or donations for IA projects, training and O&M activities • Financial and technical assistance for IA livelihood projects from other line agencies • Members patronage to IA livelihood projects and business • Voluntary works of IA officers, leaders and members in the implementation of income generating projects • Monitoring and evaluation of pilot activities	• NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA's financial strengthening • Monitoring and evaluation

13.3 Program Package for IAs Capacity Building on Financial Management

13.3.1 ISF Billing and Cost-effective Collection

(1) Objective

The main objective is to remove wasteful and unnecessary expenditures in ISF billing and collection, primarily at the NISO level. Most NISOs practically involved all of their staff in the collection of ISF, starting from the irrigation superintendent down to the clerks, security guards and drivers. Notwithstanding that this is a matter of survival for every NISO, the practice has unduly perpetuated an institutional disadvantage over O and M activities.

(2) Strategy

The basic strategies are: (a) computerization of the ISF billing so that built-in control can be integrated; (b) regular review of ISF rates so that the appropriate

water pricing can be charged; and (c) shift in the responsibility in the collection of ISF-in-kind from NISOs to the IAs.

(3) Implementation Process

The computerization of the billing system will first involve reconciliation of information indicated in the master list, IFR and parcellary map. As soon as the data in these documents have been updated, the integration will follow. The NISO through the assistance of a competent systems engineer/programmer will integrate the information using card-type data base software. The card-type is being recommended because of its affordability and user-friendly. A normal PC can bundle the software.

The second step is to develop the program that will automate the billing. Some NISOs are still using the old software for computerized billing. The old software, however, is running on a DOS-based program and stand alone, and this program has outlived its usefulness because of the introduction of the window-based application programs and local area networking.

Collection procedures will be rationalized to minimize wasteful and unnecessary expenditure. It is proposed that the responsibility of collecting ISF-in-kind will be transferred from the NISO to the IAs. Losses and pilferage normally significant will be removed from the burden of the NISO. The IAs can store the palay and dispose them during lean months through the assembling market. Gains from better prices will become additional income of the IAs.

A committee to be chaired by the Corplan with members from the IDD, SMD and selected representatives from the region and field offices, including the NCIA will be activated to review the ISF rates and make appropriate recommendation to the Board. The committee will consider past studies and determine the applicability and acceptability of new ISF rates that would increase the financial viability of NIA and the IAs.

(4) Expected Results

With improved ISF billing and collection, the magnitude of ISF collections is expected to increase. Greater revenues will be realized due to higher collection efficiency.

13.3.2 Seed Fund

(1) Objective

The objective is to create a revolving fund for the IA strictly for maintenance activity. The seed fund will ensure availability of fund in case of emergency repairs.

(2) Strategy

The basic strategy is to increase the ISF rates and opt for 80% to 100% ISF collection efficiency.

(3) Implementation Process

The seed fund is primarily for emergency rehabilitation works. NIA will automatically deduct from its ISF share and create a special account for it. The seed fund account can be invested in short to medium term securities (by a designated investment bank) to generate additional earnings, as long as at any given time, sufficient amount can be withdrawn for emergency repair. Increasing the present ISF rates will facilitate the prospect of operationalizing the seed fund. To permit the workability of the seed fund concept, the ADB estimated the ISF rates to increase by 6.5 to 7.5 cavans/ha. However, increasing the ISF rates will surely be resisted by farmers, hence it will likely take a longer time to get the social acceptability of new ISF rates. In the meantime, increasing collection efficiency will facilitate the realization of the seed fund.

It is proposed that the NISO will give specific cash allotment to IAs and this will be included in the IMT contract between the NIA and IA. The IAs will be required to produce statement of expenses incurred and produce official receipt for replenishment. All ISF collections will be first turn over to the NISO for audit, before the IAs can obtain the seed fund.

(4) Expected Results

With the seed fund, systems facilities will be maintained properly, prolonging their economic life. This will greatly ensure attainment of higher cropping intensity and yields.

13.3.3 CBU and Livelihood Activities

(1) Objective

The objective is to establish a permanent source of fund that can be used by members to start off livelihood activities. The fund will come from members' contribution, mainly from paddy production every cropping season.

(2) Strategy

The basic strategy is to institute an advocacy program on capital build-up mobilization among members, preferably at the TSAG level. Starting off with smaller groups will be easier to manage and can be model for the other members to follow.

(3) Implementation Process

The following livelihood programs will be introduced in the entire pilot NIS-IAs depending on local resources and acceptability. The program will be planned with the participation of members and provision of technical assistance as follows:

Each member is requested to contribute one (1) cavan (50kg) of paddy per season. The capital build up will be around 0.8 million pesos for three years as follows:

Php 7.5 x 25,000 kg (50 kg x 500 ha) x 1.5 x 3 years = Php 843,750

Where	:	Price of palay	7.5 pesos/kg
		IA area	500 ha (medium scale)
		Cropping intensity	150%

Proceeds from the CBU can be used to start a micro-lending activity, preferably to members who can not access their short-term credit from LBP and/or Quedancor due to existing arrears from previous lending program (e.g. Masagana 99). Assuming a production loan of Pesos 10,000/ha, around 20 farmers after the first cropping and 80 farmers after three years could be benefited under the proposed lending scheme. The loan assistance is expected to encourage participation of farmers into IA activities and sustain membership for effective execution of O&M activities. The interest rate will be the institutional rate of 14%/year which will be spent for loan handling (cost for IA staff and documentation) and additional capital build up.

Technical assistance for loan lending will be part of the financial training program to be designed by a field financial trainer. Collection of paddy for capital build up will be stored in post harvest facilities owned by cooperatives and LGUs and/or NISO facilities.

The CBU can be rolled over to fund the following projects, especially for women.

(i) High value vegetable production

Through a tie-up with seed distribution companies, a high value vegetable production using home yards and a specific paddy field lot is recommended. The seed distributor will provide technical guidance and marketing of products. The scale of production will be less than 1,000 m^2 at the beginning and enlarged according to the assured market scale.

(ii) Livestock raising

Through the coordination and support of the provincial agricultural office and Department of Agriculture, a backyard livestock raising of poultry and swine is of broilers/layers and piglets. Based on the progress of raising technologies, the IAs will invest a poultry cage and /or piggery for commercial production. The facilities will be located away from canals to prevent pollution of irrigation water. Livestock products will be sold locally.

(iii) Food processing and handicraft

Through the coordination of the provincial agricultural office and other related agencies, a training program for potential food processing and handicraft will be introduced. The training will introduce skills for processing using local resources such as rice straw, vegetables, fruits, fish, livestock for food processing, and wood, bamboo, corn husk, local plants, etc. for handicraft. Women groups will initiate the processing activity, and production will be for local consumption through direct sales or on order basis. This will gradually be enlarged to cottage industry level depending on buyers and scale of market.

(4) Expected Results

Supplementary sources of income will be expanded. Hence, the income of IAs, particularly the members is expected to increase.

13.3.4 Assembling Market

(1) Objective

Assembling market is essentially matching the segments of supply and demand, the main objective of which is to ensure stability of paddy prices. Farm gate prices of paddy are normally depressed by about 8% to 10% during harvest period. This practice persists because most farmers get their short-term credit from traders, and in return, pay their loans with their own production during harvest period. The

consequences are: (a) prohibitive cost of short-term credit (more than 10% per month); and (b) lower prices of paddy, for failure to undertake further processing and storage for better quality.

(2) Strategy

The basic strategy is to minimize investment cost for post-harvest facilities by utilizing existing post-harvest facilities within the community. These facilities established by agricultural cooperatives are normally underutilized. The second is to convince every member to patronize the assembling market operations, by offering the premium price for quality paddy. The third is to establish a market information network capable of releasing farm gate prices accessible to all buyers, hence fair competition will be ensured.

(3) Implementation Process

Assembling market of paddy will be initiated, specifically in Mal, Pulangui and Bago areas where farm gate prices are artificially low because of price manipulation by local rice cartel. Assembling sites with drying yards will be selected strategically, preferably using the existing post-harvest facilities within the community. This is to ensure minimum cost operation. Through the efforts of leaders, a communication program will be launched convincing the members to bring their paddy to designated assembling sites. The moment the volume is significant for competitive auction, dealers will be invited usually at market days to participate in the auction of paddy. The meeting of the dealers and members present an opportunity to get market information in the producing area (Ref. Figure 13.1).

Market price information at local and terminal market areas will be provided as one of the activities. Price information collected by the provincial IA federations will be circulated to all participants. At the beginning of price monitoring and dissemination, the provincial and regional offices of NIA will be asked to assist the staff of the federations in the collection of price information. Current market prices presented on the boards at the assembling sites will promote fair-trading of paddy among the participating dealers. Variety, purity and moisture of paddy are ensured. This will be reflected in the sale prices. Such concerns will be instilled in the minds of the members and enable them to strive for better quality control.

The IAs will organize a marketing committee to oversee the operations of the assembly market. To compensate for the cost of market operation, appropriate market fees, both from the buyers and seller-farmers, will be excised on a per

cavan basis. The market charges (representing the income of the IAs) will be based on the actual cost incurred in providing the activities taking into consideration affordability level of dealers and farmers. Farmers' charges will be lower than the buyers (Ref. Figure 13.2).

The assembling market activities of the IAs and provincial federation will be diversified into processing (mechanical drying, rice milling, etc.) and contract trading with regional dealers, big retailers and consumer groups such as cooperatives. The cooperation among IAs as regards exchange of market information and paddy assembling and minimum direct paddy buying using IA's working capital will ensure successful operation.

(4) Expected Results

Greater value added for paddy is expected to be achieved. Higher prices will thus accrue to members, and for services rendered by the IAs, corresponding incomes will also be realized.

13.3.5 Training

(1) Objective

The objective is to hone the skills of leaders and members in basic financial planning and control.

(2) Strategy

The basic strategy is to employ hands-on training focused on basic financial planning. The features are:

(a) The trainees will be focused on leaders and officers who have the potential to become the core management team of the IAs. The trainees will eventually become the core trainers of the IAs following a cascading system of replication to other members.
(b) The course content, especially accounting concepts will be taught with visuals instead of the usual complex accounting terminology.
(c) Resource persons will be drawn from successfully managed-cooperatives or similar institutions who could immerse with the trainees while financial systems and procedures are being established in the IAs.
(d) The output on any subject will already constitute a financial system that will be used by the IA. For instance, farm record keeping will be one of the systems to be introduced. The design of the farm record keeping should

already include information per individual member data on land holding, yield, farm income, expenditures, etc. that will permit promotion of synchronous planting and loan processing of member.

(3) Implementation Process

The NISO will identify potential trainers in accordance with the qualification standards being set. If NIA has the trainers, they should be deployed. The trainer together with the NISO will evaluate the needs of the IAs and determine which of the financial systems will be zeroed in. Basic accounting and record keeping requires some degree of aptitude in arithmetical operations. The chances of imparting the skills are best absorbed if the trainees have the proper mind conditioning. Sons and daughters of leaders who have acquired tertiary level of education will probably have better chances of being trained than the leaders themselves. This will be explored in every IA and will be tested in the pilot NIS.

(4) Expected Results

Acquired skills in financial planning will improve financial prudence of the IAs. This will enhance their access to formal sources of credit; thus credit needs will also be enhanced.

14. Implementation Schedule and Arrangement for IA Strengthening Action Plans

14.1 Implementation Schedule

The implementation schedule for IA strengthening action plans was designed and confirmed on the basis of the Study:

1. Pilot implementation : Year 2002 to 2005 (4 years)
2. Nationwide replication : Year 2006 to 2015 (10 years)

The plan of operations prepared by the pilot IAs at the six (6) pilot NISs was assessed and integrated considering their own strengthening requirements, inter-relations and feedback among different activities, and contents of assistant services from NIA and other agencies. Based on the assessment, the pilot implementation schedule as shown in Figure 14.1 was prepared for IA organization, operations and maintenance and financial strengthening.

The schedule for nationwide replication, estimated to be 10 years, was targeted to cover around 140 NISs involving around 445,000 ha and 1,320 IAs. The coverage

excludes the six pilot NISs, and the 56 completed and on-going NIS projects, i.e. IOSP II (17 NISs), WRDP (18 NISs), ISIP II (9 NISs), and SPISP (4 NISs).

14.2 Implementation Arrangement

(1) Pilot Action Plans

The JICA Study covered a part of the initial pilot activities in 2002 and 2003 as follows:

1. IA Organization
   - 1.1 Building Productive IAs
     - Joint NIA-IA mater list update covering tenurial condition and identifying potential members (NIA-1, IA-1)
     - Assess IA's functional and participatory structures, develop community organization approaches (NIA-2.1)
   - 1.3 Providing Appropriate Assistance for IA's Organizational Strengthening
     - Review and evaluate IA training program (NIA-2.2)
2. IA O&M Activities
   - 2.3 Providing Appropriate Assistance for IA O&M Activities
     - Develop procedure for identification and prioritization of rehabilitation works (NIA-7)
     - Develop improved IA training program (NIA-9)
3. IA Financial Performance
   - 3.3 Assistance for IA's Capacity Building on Financial Management and other activities
     - Develop improved IA training program (NIA-4.1&2)

The succeeding pilot activities at the six pilot NISs are expected to be continued by the NIA-IDD jointly with the relevant regional and NISO offices. The JICA technical assistance program and other donor agencies may cover some of the implementation requirements. For instance, the proposed rehabilitation and improvement of Bago RIS financed by JBIC could implement the pilot activities planned at Bago RIS with additional funding allocation for the IA strengthening activities.

(2) Nationwide Replication Plan

The nationwide replication for IA strengthening will be planned based on the progress and outcome of the pilot implementation, including applicability of planned approaches, modification of technical assistance provided, and other monitoring and evaluation results. The funding required for the nationwide replication should be sourced locally and be augmented with external funds through multilateral financing. A sector loan for IA strengthening may be recommended for the nationwide replication.

Table 3.1 Personnel in NISO and Correspondent Area and Farmers

NISO	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
(PERSONNEL)						
Superintendent	1	1	1	1	1	1
Operation and Management	12	125	28	5	36	8
Engineer	4	10	5	0	5	1
W.R.F. Techinician	2	27	12	2	10	2
W.R.F. Gate Operator	2	5	4	0	6	1
W.R.F. Ditch Tender	4	83	7	3	15	4
Institutional Development	1	6	3	(1)***	1	1
Equipment	1	3	4	0	5	1
Administrative	5	8	13	5	13	4
Billing/Chashering/Collection	2	3	2	2	4	1
Total	**20**	**143**	**49**	**11**	**56**	**15**
(NIS Profile)	(San Fabian)	(Angat)				
Service Area	2,288	29,374	12,700	3,195	11,415	2,613
Number of Farmer	3,005	18,647	5439	1,608	6712	2,779
Number of IA	7	89	17	2	17	15
	(Dumuloc)	(Maasim)				
Service Area	1,306	2,111				
Number of Farmer	926	1,587				
Number of IA	5	6				
(CORRESPONDENT AREA and FARMERS)						
Area per NISO Staff						
(ha/all staff)	180	220	259	290	204	174
Operation & ISF Collection by WRF						
Area covered by O&M (ha/O&M)	300	252	454	639	317	327
Area covered by WRF (ha/WRF)	449	274	552	639	368	373
Num of Farmer for collection	491	176	236	322	217	397
(Num Farmer/WRF)						
ISF Billing						
Num of Farmer for billing	1,966	6,745	2,720	804	1,678	2,779
(Num Farmer/Billing)						
IA Organizing and Strengthening						
Area covered by IDO (ha/IDO)	3,594	5,248	4,233	3,195	11,415	2,613
Num of IA per IDO (Num IA/IDO)	12	16	6	2	17	15
Num of Farmer per IDO	3,931	3,372	1,813	1,607	6,712	2,779
(Num Farmer/IDO)						

* San Fabian includes Dumuloc RIS ** Angat includes Maasim RIS

*** O&M Engineer also in charge IDO position

Source : NISO

Table 3.2 Income and Expenditure of NISO

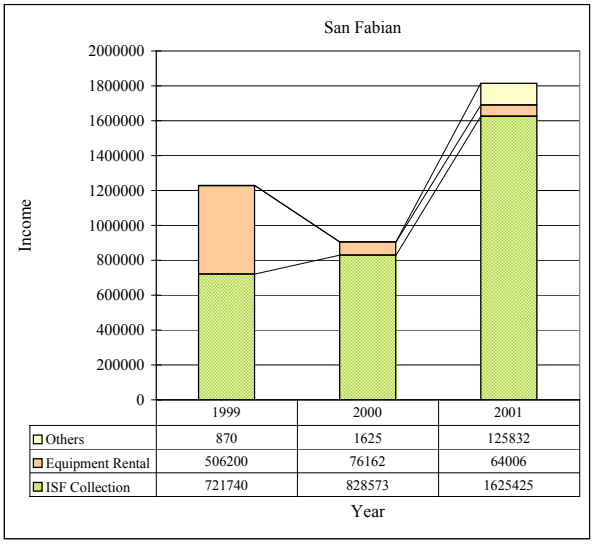
Item	San Fabian			Angat*			Bago		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
(Expenditure of NISO)									
Personnel Services	2,004,914	1,566,366	1,771,035	32,563,463	26,503,156	31,050,429	5,325,495	6,593,187	9,086,994
	(46%)	(43%)	(42%)	(95%)	(80%)	(85%)	(91%)	(88%)	(96%)
Maintainance and Operating Expenses	2,324,240	2,084,548	2,457,751	1,581,115	6,767,906	5,539,874	547,702	904,265	339,295
	(54%)	(57%)	(58%)	(5%)	(20%)	(15%)	(9%)	(12%)	(4%)
Total	**4,329,154**	**3,650,914**	**4,228,786**	**34,144,578**	**33,271,062**	**36,590,303**	**5,873,197**	**7,497,452**	**9,426,289**
(Personnel Services per ha (P/ha))	876	685	774	1,034	842	986	419	519	716
(MOOE per ha (P/ha))	1,016	911	1,074	50	215	176	43	71	27
(Income of NISO)									
ISF Collection	721,740	828,573	1,625,425	8,693,105	18,714,644	23,089,124	4,027,699	6,265,741	6,350,700
	(59%)	(91%)	(90%)	(36%)	(58%)	(62%)	(95%)	(97%)	(99%)
Equipment Rental	506,200	76,162	64,006	6,993,847	2,316,738	3,535,616	183,091	156,905	32,552
	(41%)	(8%)	(4%)	(29%)	(7%)	(9%)	(4%)	(2%)	(1%)
Other	870	1,625	125,832	8,171,339	11,342,798	10,798,030	29,086	46,523	61,970
	(0%)	(0%)	(7%)	(34%)	(35%)	(29%)	(1%)	(1%)	(1%)
Total	**1,228,810**	**906,360**	**1,815,263**	**23,858,291**	**32,374,180**	**37,422,770**	**4,239,876**	**6,469,169**	**6,445,222**
(Viability Index)									
Income / Expenditure Ratio	0.28	0.25	0.43	0.7	0.97	1.02	0.72	0.86	0.68
(ISF Collection)									
Current Collectable	1,095,610	1,264,167	1,805,716	27,456,993	27,456,990	32,486,665	10,619,530	14,413,094	14,020,260
Currenct Collection	399,650	392,212	736,431	5,791,648	12,094,584	16,110,008	3,340,506	4,661,395	4,869,170
Balance	695,960	871,955	1,069,285	21,665,346	15,362,406	16,376,657	7,279,024	9,751,699	9,151,090
(Simulation)									
Viability Index	0.44	0.49	0.68	1.33	1.43	1.47	1.96	2.16	1.65
In case 100% Collection (Current)									
Neccesary collection rate to be equilibrium				59%	47%	-	47%	39%	56%

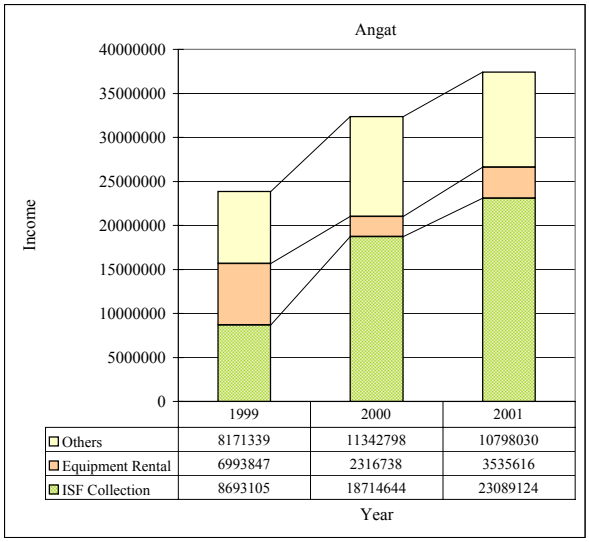
*** Angat NIS includes Maasim NIS**

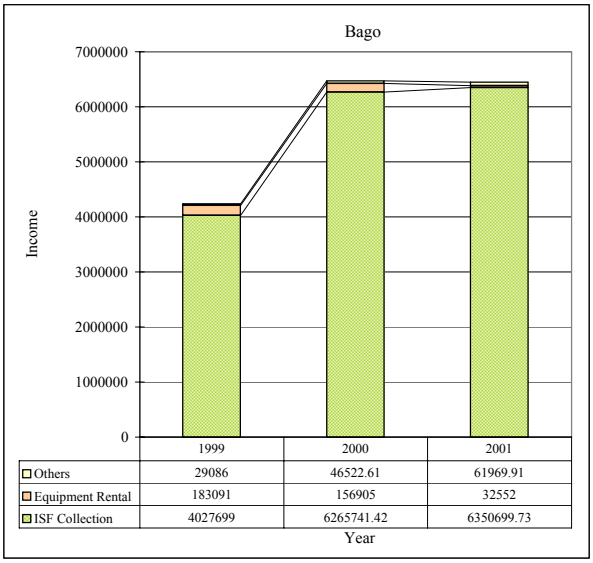
Item	Labangan			Pulangui			Mal		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
(Expenditure of NISO)									
Personnel Services	1,967,182	2,256,631	1,420,053	9,303,140	9,746,820	9,319,355	1,672,224	2,027,837	1,956,357
	(88%)	(85%)	(77%)	(91%)	(80%)	(86%)	(97%)	(94%)	(90%)
Maintainance and Operating Expenses	264,584	402,467	434,780	949,081	2,512,141	1,525,324	53,376	128,324	221,126
	(12%)	(15%)	(23%)	(9%)	(20%)	(14%)	(3%)	(6%)	(10%)
Total	**2,231,766**	**2,659,098**	**1,854,833**	**10,252,221**	**12,258,961**	**10,844,679**	**1,725,600**	**2,156,161**	**2,177,483**
(Personnel Services per ha (P/ha))	616	706	444	815	854	816	640	776	749
(MOOE per ha (P/ha))	83	126	136	83	220	134	20	49	85
(Income of NISO)									
ISF Collection	1,690,671	1,577,035	1,776,431	8,782,802	9,373,459	13,968,478	2,356,205	2,976,928	3,053,935
	(58%)	(77%)	(63%)	(80%)	(75%)	(77%)	(69%)	(75%)	(85%)
Equipment Rental	255,472	435,345	970,793	1,968,195	2,808,175	4,128,241	1,019,591	964,342	547,272
	(9%)	(21%)	(35%)	(18%)	(23%)	(23%)	(30%)	(24%)	(15%)
Other	963,745	45,146	56,031	202,589	283,012	86,504	57,414	6,316	5,108
	(33%)	(2%)	(2%)	(2%)	(2%)	(0%)	(2%)	(0%)	(0%)
Total	**2,909,888**	**2,057,526**	**2,803,255**	**10,953,586**	**12,464,647**	**18,183,223**	**3,433,211**	**3,947,585**	**3,606,316**
(Viability Index)									
Income / Expenditure Ratio	1.3	0.77	1.51	1.07	1.02	1.68	1.99	1.83	1.66
(ISF Collection)									
Current Collectable	4,775,683	7,069,335	8,556,815	23,870,250	23,172,300	22,898,910	1,855,376	3,102,030	2,894,199
Currenct Collection	1,308,840	1,281,420	1,624,490	5,292,490	8,410,590	12,270,630	1,500,059	2,440,538	2,364,851
Balance	3,466,843	5,787,915	6,932,325	18,577,760	14,761,710	10,628,280	355,317	661,492	529,348
(Simulation)									
Viability Index	2.86	2.95	5.25	2.88	2.22	2.66	2.20	2.14	1.90
In case 100% Collection (Current)									
Neccesary collection rate to be equilibrium	-	27%	-	-	-	-	-	-	-

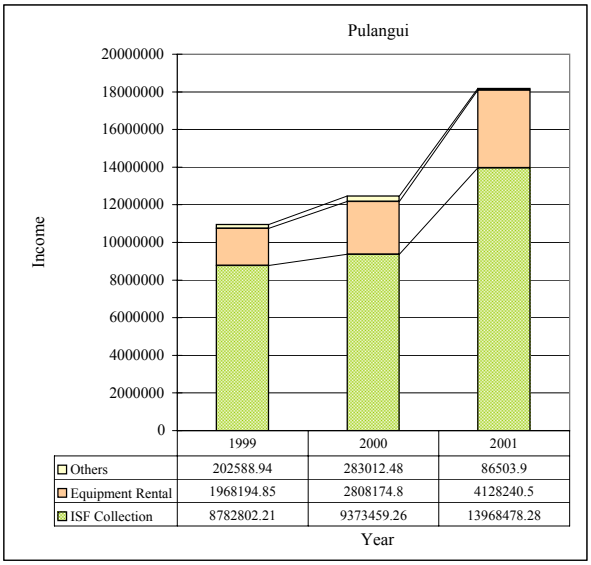
Source: NISO

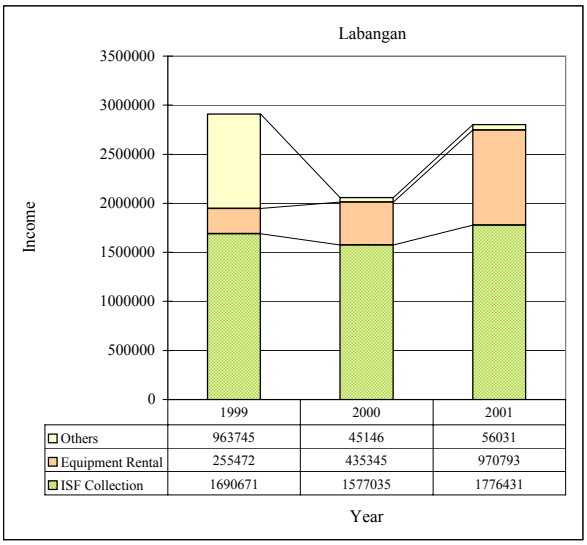
Table 3.3 Income of NISO in Last 3 Years











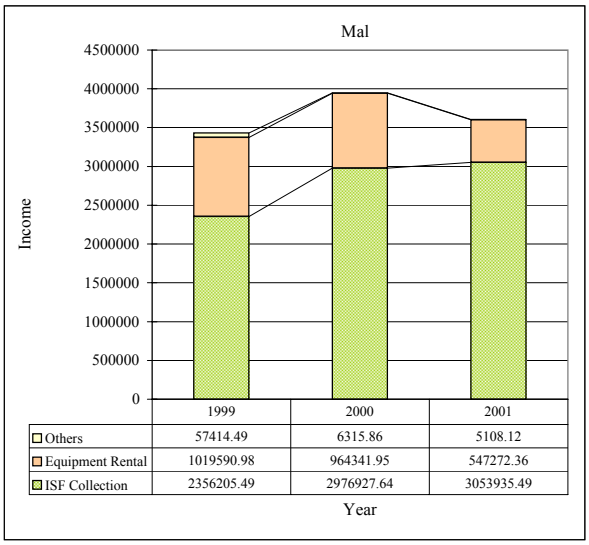
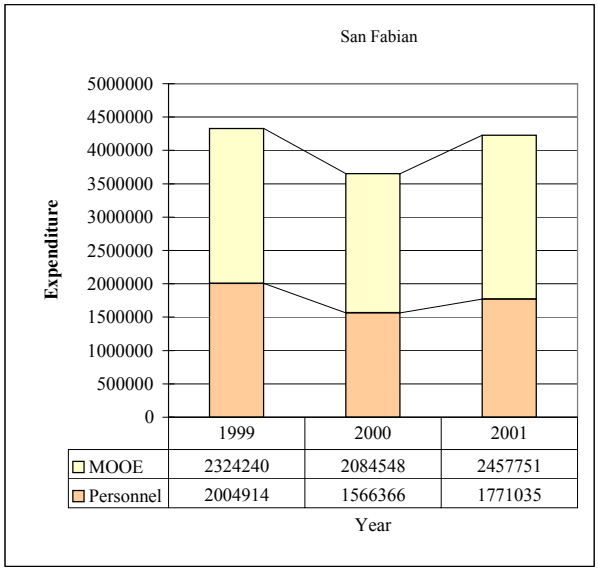
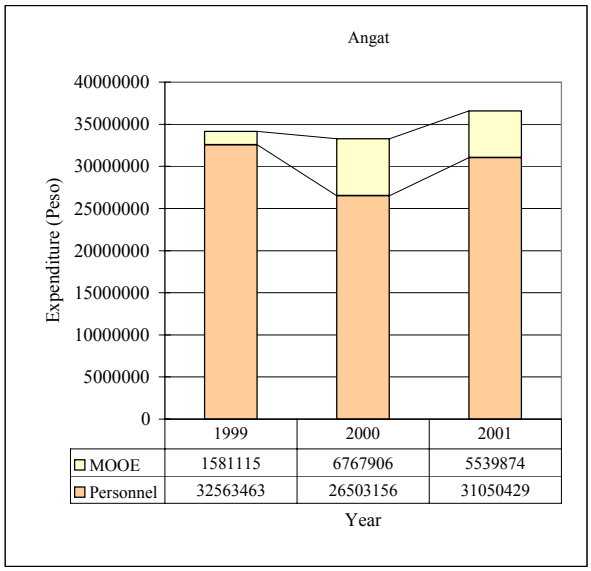
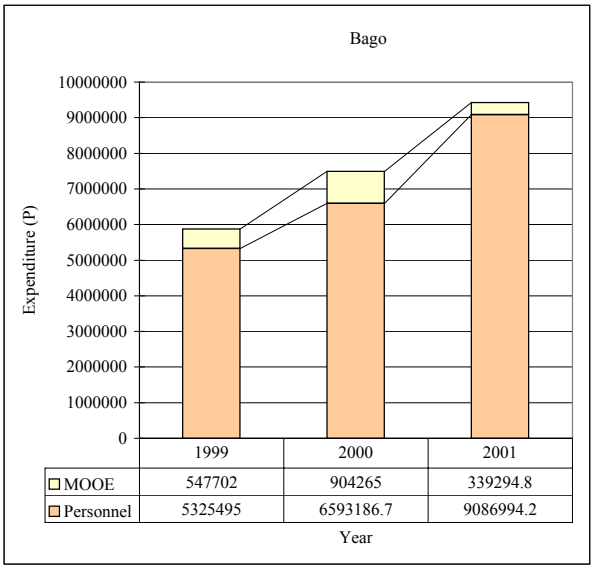
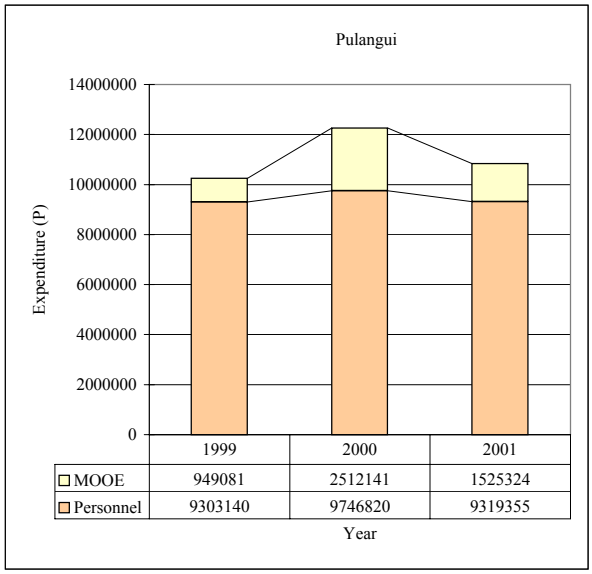


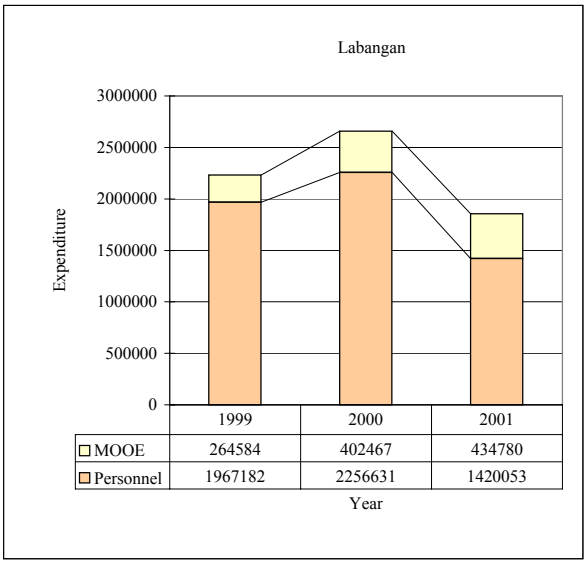
Table 3.4 Expenditure of NISO in Last 3 Years











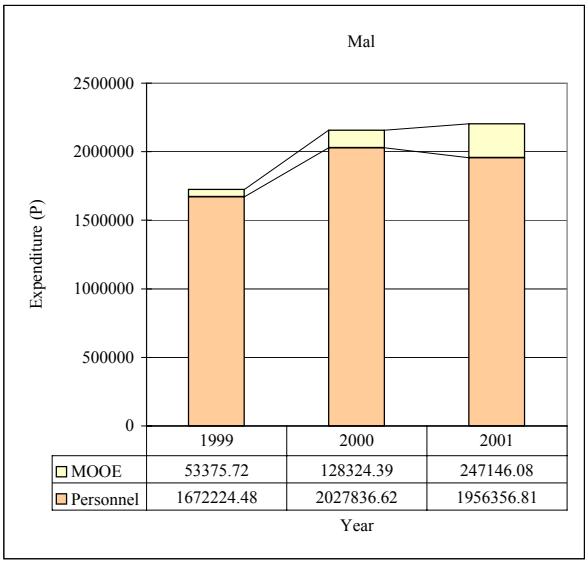


Table 3.5 Maintenance and Rehabilitation Expenses in NISO

Item	San Fabian			Angat /a			Bago		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
Maintenance Cost (Peso)				12,594,000	15,742,500	18,103,875	863,310	1,298,146	243,487
Rehabilitation Cost (Peso)	4,905,000	865,000	2,632,000	31,750,950	57,963,800	35,298,640	6,486,182	4,308,746	3,287,614
Unit Maint. & Rehab. Cost (P/ha)	2,144	378	1,150	1,408	2,341	1,696	579	441	278
Maintenance	0	0	0	400	500	575	68	102	19
Rehabilitation	2,144	378	1,150	1,008	1,841	1,121	511	339	259
Desilting works									
Volume (m3)	1,566	5,619	5,492	42,821	35,786	55,601	7,914	8,235	4,780
Cost (Peso)	93,960	360,630	329,520	2,639,950	2,911,410	2,248,340	863,310	1,298,146	243,487
Parcentage in Maint. & Rehab Cost	(2%)	(42%)	(13%)	(6%)	(4%)	(4%)	(12%)	(23%)	(7%)

Item	Labangan			Pulangui			Mal		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
Maintenance Cost (Peso)	625,828	0	391,571	1,737,227	1,970,966	1,923,947	827,809	999,581	978,059
Rehabilitation Cost (Peso)	1,393,233	4,121,736	1,300,567	2,744,461	3,423,782	2,649,952	2,394,953	7,202,325	870,139
Unit Maint. & Rehab. Cost (P/ha)	632	1,290	530	393	473	401	1,233	3,139	707
Maintenance	196	0	123	152	173	169	317	383	374
Rehabilitation	436	1,290	407	240	300	232	917	2,756	333
Desilting works									
Volume (m3)	-	7,026	7,898	13,186	18,621	16,292	3,405	480	1,589
Cost (Peso)	-	502,908	457,940	499,734	705,728	617,474	167,662	64,687	95,337
Parcentage in Maint. & Rehab Cost	(0%)	(12%)	(27%)	(11%)	(13%)	(13%)	(5%)	(1%)	(5%)

/a: Includes Maasim
Source : NISO

Table 3.6 Equipment Status in the NISOs

Type	San Fabian /a			Angat /b			Bago		
	A1	A2	R	A1	A2	R	A1	A2	R
Excavator/Backhoe	1			5	1	5	2		3
Crane					2	2			1
Wheel Loader				1		2	2		
Truck			1	11	2	2	2		2
Grader				2				1	
Bulldozer				1			1	1	
Roller									
Total H.Equipment	(1)	(0)	(1)	(20)	(5)	(11)	(7)	(2)	(6)
Pick-up / Car	2	1		14			2	1	2
Motorcycle	7	1	1				18	1	
Total Service Vehicle	(9)	(2)	(1)	(14)	(0)	(0)	(20)	(2)	(2)
Service Area (ha)		2,288			31,485			12,700	

Type	Labangan			Pulangui /c			Mal		
	A1	A2	R	A1	A2	R	A1	A2	R
Excavator/Backhoe			1	2	1				
Crane					1				
Wheel Loader			1	2	2			1	
Truck			1	6	3		2	2	
Grader				1	2				
Bulldozer				1	1				
Roller				1					
Total H.Equipment	(0)	(0)	(3)	(13)	(10)	(0)	(2)	(3)	(0)
Pick-up / Car	1		1	8	1		1	1	
Motorcycle	3		2	22		4	6	1	
Total Service Vehicle	(4)	(0)	(3)	(30)	(1)	(4)	(7)	(2)	(0)
Service Area (ha)		3,195			12,238			2,613	

/a Includes Dumuloc, /b Includes Maasim, /c Includes Roxas Kuya
note : A1 : Runnning condition, A2 : Under repair, R : For disposal
Source: NISO

Table 4.1 Membership Status of Pilot IAs

NIS/IA	Date Organized	Age as of 2002	Members		Total Farmers	Rate of Membership (%)	Perceived Rate of Active Members/a
			Actual	Non-member			
San Fabian							
1 Scientific Farming	1998	4	354	400	754	47	10
2 BGM	1990	12	160	260	420	38	20
3 San Juan Babasit	1990	12	300	551	851	35	10
AMRIS							
1 Picaba	1992	10	218	512	730	30	15
2 Josephian	1987	15	60	317	377	16	30
3 Balucoc	1986	16	70	385	455	15	40
Bago RIS							
1 Atidu IA Inc.	1995	7	108	154	262	41	50
2 Amana IA Inc.	1995	7	243	337	580	42	20
3 Bunasabala IA Inc.	1995	7	460	137	597	77	55
Labangan							
1 Muchrist IA Inc	1997	5	325	180	505	64	10
3 SANDATA IA, INC.	1988	14	170	250	420	40	10
Pulangui	1988	14	368	279	647	57	
1 Paradise G5 and G6 IA							
2 Kahugpungan IA	1993	9	101	491	592	17	14
3 Mad IA	1994	8	135	682	817	17	10
Mal							
1 Weslasufia	1998	4	112	41	153	73	50
2 Labakafia	2000	2	175	40	215	81	35
3 Malkaira	1996	6	102	2	104	98	70
All IAs		9	3461	5018	8479	43	28
Location							
Upstream		7	1232	1778	3010	41	25
Midstream		10	665	1379	2044	33	23
Downstream		11	1260	2036	3296	51	37
By NIS Type							
Water constraints		14	358	1214	1572	23	28
Unexploited potential		9	2724	3721	6445	42	21
Market away		4	389	83	472	82	52

Source of Raw Data: NISO and IA Files
a/ Culled from Problem Tree, PCM Workshop

Table 4.2 Land Holding by Cropping Intensity, 2002

NIS/IA	Service Area (ha)	Total Farmers 1/	Average Farm Holding (ha)	Cropping Intensity (1999-2001)		
				Wet Season (%)	Dry Season (%)	Annual (%)
San Fabian	827	1,562	0.53	88	50	138
1 Scientific Farming	361	730	0.49	98	57	155
2 BGM	245	377	0.65	79	44	123
3 San Juan Babasit	221	455	0.49	88	48	136
AMRIS	1,380	2,025	0.68	61	67	128
1 Picaba	494	754	0.65	96	68	164
2 Josephian	398	420	0.95	45	65	110
3 Balucoc	488	851	0.57	42	69	111
Bago RIS	2,949	1,439	2.05	74	75	149
1 Atidu IA Inc.	908	262	3.46	75	80	155
2 Amana IA Inc.	942	580	1.62	81	78	159
3 Bunasabala IA Inc.	1,099	597	1.84	66	68	134
Labangan	2,760	1,409	1.96	85	80	165
1 Muchrist IA Inc	1,377	592	2.33	87	82	169
3 SANDATA IA, INC.	1,383	817	1.69	83	78	161
Pulangui	3,090	1,572	1.97	76	76	151
1 Paradise G5 and G6 IA	809	505	1.60	78	78	156
2 Kahugpungan IA	1,025	420	2.44	78	78	156
3 Mad IA	1,256	647	1.94	71	71	142
Mal	530	472	1.12	90	70	160
1 Weslasufia	130	153	0.85	90	90	180
2 Labakafia	279	215	1.30	90	80	170
3 Malkaira	121	104	1.16	90	40	130
TOTAL	11,535	8,479	1.36	79	70	149
Location		10,051				
Upstream	4,077	2,996	1.36	87	76	163
Midstream	2,889	2,829	1.02	75	69	144
Downstream	4,568	4,226	1.08	73	62	136
By NIS Type						
Water constraints	827	1,562	0.53	88	50	138
Unexploited potential	10,179	6,445	1.58	59	60	119
Market away	530	472	1.12	90	70	160

Note: 1/ Based on the masterlist
Source: Survey of National Irrigation System, Volume-I, NIA, 2002

Table 4.3 Production, Area and Yield per hectare, 2002

NIS/IA	Wet Season			Dry Season			Total		
	Production (cav)	Area (ha)	Yield (ton)	Production (cav)	Area (ha)	Yield (ton)	Production (cav)	Area (ha)	Yield (ton)
San Fabian	58,392	760	3.8	33,833	417	4.1	92,225	1,177	3.9
1 Scientific Farming	26,083	334.4	3.9	15,504	193.8	4.0	41,587	528.2	3.9
2 BGM	13,984	184.0	3.8	7,544	92.0	4.1	21,528	276.0	3.9
3 San Juan Babasit	18,325	241.1	3.8	10,785	131.5	4.1	29,110	372.6	3.9
AMRIS	68,441	897	3.8	90,324	1,109	4.1	158,765	2,006	4.0
1 Picaba	37,918	492.4	3.9	40,380	492.4	4.1	78,298	985	4.0
2 Josephian	14,387	191.8	3.8	29,880	368.9	4.1	44,267	561	3.9
3 Balucoc	16,136	212.3	3.8	20,064	247.7	4.1	36,200	460	3.9
Bago RIS	126,580	1,590	4.0	125,605	1,619	3.9	252,185	3,209	3.9
1 Atidu IA Inc.	25,641	312.7	4.1	26,762	318.6	4.2	52,404	631.3	4.2
2 Amana IA Inc.	49,669	591.3	4.2	46,691	569.4	4.1	96,360	1,160.7	4.2
3 Bunasabala IA Inc.	51,269	685.5	3.7	52,152	731.2	3.6	103,421	1,416.7	3.7
Labangan	198,228	2,717	3.6	207,029	2,557	4.0	405,257	5,275	3.8
1 Muchrist IA Inc	102,228	1,419.8	3.6	107,059	1,338.2	4.0	209,288	2,758.1	3.8
3 SANDATA IA, INC.	95,999	1,297.3	3.7	99,969	1,219.1	4.1	195,969	2,516.4	3.9
Pulangui	163,247	2,281	3.6	156,090	2,156	3.6	319,337	4,437	3.6
1 Paradise G5 and G6 IA	40,261	635.8	3.2	45,170	623.0	3.6	85,431	1,258.8	3.4
2 Kahugpungan IA	62,856	792.6	4.0	54,710	760.9	3.6	117,566	1,553.6	3.8
3 Mad IA	60,130	852.9	3.5	56,209	772.1	3.6	116,340	1,625.0	3.6
Mal	43,469	533	4.1	43,844	527	4.2	87,313	1,061	4.1
1 Weslasufia	15,277	160.8	4.8	12,865	160.8	4.0	28,142	321.6	4.4
2 Labakafia	21,241	283.2	3.8	24,381	277.1	4.4	45,622	560.3	4.1
3 Malkaira	6,951	89.4	3.9	6,598	89.4	3.7	13,549	178.7	3.8
TOTAL	658,356	8,777	3.8	656,724	8,386	3.9	1,315,080	17,164	3.8
Location									
Upstream	247,409	3,355.9	3.7	247,741	3,126.9	4.0	495,150	6,482.9	3.8
Midstream	162,136	2,043.0	4.0	163,206	2,068.3	3.9	325,343	4,111.2	4.0
Downstream	248,811	3,378.5	3.7	245,777	3,191.0	3.9	494,588	6,569.5	3.8
By NIS Type									
Water constraints	58,392	759.5	3.8	33,833	417.3	4.1	92,225	1,176.8	3.9
Unexploited potential	556,495	7,484.5	3.7	579,048	7,441.7	3.9	1,135,543	14,926.2	3.8
Market away	43,469	533.4	4.1	43,844	527.2	4.2	87,313	1,060.6	4.1

Note: "-" no available data

Source: Survey of National Irrigation System, Volume-I, NIA, 2002

Table 4.4 Members Tenurial Status, 2002

NIS	Name of IA	Tenurial (based on actual members)							
		Owner/		CLT		Tenant and Others		Total	
		Number	%	Number	%	Number	%	Number	%
San Fabian		42	12.1	141	40.5	165	47.4	348	100.0
1	Scientific Farming	29	13.3	81	37.2	108	49.5	218	100.0
2	BGM	13	21.7	20	33.3	27	45.0	60	100.0
3	San Juan Babasit	-	-	40	57.1	30	42.9	70	100.0
AMRIS		329	40.4	31	3.8	454	55.8	814	100.0
1	Picaba	177	50.0	17	4.8	160	45.2	354	100.0
2	Josephian	32	20.0	14	8.8	114	71.3	160	100.0
3	Balucoc	120	40.0	-	-	180	60.0	300	100.0
Bago RIS		477	58.8	67	8.3	267	32.9	811	100.0
1	Atidu IA Inc.	55	50.9	11	10.2	42	38.9	108	100.0
2	Amana IA Inc.	132	54.3	11	4.5	100	41.2	243	100.0
3	Bunasabala IA Inc.	290	63.0	45	9.8	125	27.2	460	100.0
Labangan		107	45.3	71	30.1	58	24.6	236	100.0
1	Muchrist IA Inc	44	43.6	31	30.7	26	25.7	101	100.0
3	SANDATA IA, INC.	63	46.7	40	29.6	32	23.7	135	100.0
Pulangui		547	63.4	53	6.1	263	30.5	863	100.0
1	Paradise G5 and G6 IA	206	63.4	20	6.2	99	30.5	325	100.0
2	Kahugpungan IA	108	63.5	7	4.1	55	32.4	170	100.0
3	Mad IA	233	63.3	26	7.1	109	29.6	368	100.0
Mal		191	49.1	3	0.8	195	50.1	389	100.0
1	Weslasufia	84	75.0	2	1.8	26	23.2	112	100.0
2	Labakafia	58	33.1	1	0.6	116	66.3	175	100.0
3	Malkaira	49	48.0	-	-	53	52.0	102	100.0
TOTAL		1,693	48.9	366	10.6	1,402	40.5	3,461	100.0
Location									
	Upstream	595	48.9	162	13.3	461	37.8	1,218	100.0
	Midstream	343	42.5	53	6.6	412	51.0	808	100.0
	Downstream	755	52.6	151	10.5	529	36.9	1,435	100.0
By NIS Type									
	Water constraints	42	12.1	141	40.5	165	47.4	348	100.0
	Unexploited potential	1,460	53.6	222	8.1	1,042	38.3	2,724	100.0
	Market away	191	49.1	3	0.8	195	50.1	389	100.0

Note: "-" no available data

Source: Survey of National Irrigation System, Volume-I, NIA, 2002

Table 4.5 Service Area, TSA and BOD members, 2002

NIS/IA	Service Area (ha)	Number of TSA		Number of BOD		Farmer/TSA	
		Number	Area (ha)/TSA	Number	Area (ha)/BOD	Number	Ratio
San Fabian	827	25	33.08	59	14.02	1,562	62
1 Scientific Farming	361	11	32.82	27	13.37	730	66
2 BGM	245	7	35.00	12	20.42	377	54
3 San Juan Babasit	221	7	31.57	20	11.05	455	65
AMRIS	1,380	31	44.52	31	44.52	2,025	65
1 Picaba	494	12	41.17	12	41.17	754	63
2 Josephian	398	9	44.22	9	44.22	420	47
3 Balucoc	488	10	48.80	10	48.80	851	85
Bago RIS	2,949	52	56.71	46	64.11	1,439	28
1 Atidu IA Inc.	908	12	75.67	6	151.33	262	22
2 Amana IA Inc.	942	21	44.86	21	44.86	580	28
3 Bunasabala IA Inc.	1,099	19	57.84	19	57.84	597	31
Labangan	2,760	63	43.81	63	43.81	1,409	22
1 Muchrist IA Inc	1,377	32	43.03	32	43.03	592	19
3 SANDATA IA, INC.	1,383	31	44.61	31	44.61	817	26
Pulangui	3,090	46	67.17	46	67.17	1,572	34
1 Paradise G5 and G6 IA	809	4	202.25	4	202.25	505	126
2 Kahugpungan IA	1,025	11	93.18	11	93.18	420	38
3 Mad IA	1,256	31	40.52	31	40.52	647	21
Mal	530	18	29.44	21	25.24	472	26
1 Weslasufia	130	3	43.33	6	21.67	153	51
2 Labakafia	279	11	25.36	7	39.86	215	20
3 Malkaira	121	4	30.25	8	15.13	104	26
TOTAL	11,536	235	49.09	266	43.37	8,479	36
Location							
Upstream	4,079	74	55.12	87	46.89	2,996	40
Midstream	2,889	59	48.97	60	48.15	2,012	34
Downstream	4,568	102	44.78	119	38.39	3,471	34
By NIS Type							
Water constraints	827	25	33.08	59	14.02	1,562	62
Unexploited potential	10,179	192	53.02	186	54.73	6,445	34
Market away	530	18	29.44	21	25.24	472	26

Note: "-" no available data

Source: Survey of Irrigators Association, Volume-III, NIA, 2002

Table 4.6 Functionality Rating, Score and Category, 2002

NIS/IA	1999		2000		2001		Average(1999-2001)	
	Score	Rating	Score	Rating	Score	Rating	Score	Rating
San Fabian	63	Fair	56	Poor	66	Fair	62	Poor
1 Scientific Farming	65	Fair	69	Fair	71	Fair	68	Fair
2 BGM	67	Fair	65	Fair	65	Fair	66	Fair
3 San Juan Babasit	57	Poor	35	Poor	61	Fair	51	Poor
AMRIS	73	Fair	83	Satisfactory	81	Satisfactory	79	Satisfactory
1 Picaba	75	Satisfactory	82	Satisfactory	84	Satisfactory	80	Satisfactory
2 Josephian	71	Fair	84	Satisfactory	81	Satisfactory	79	Satisfactory
3 Balucoc	72	Fair	84	Satisfactory	79	Satisfactory	78	Satisfactory
Bago RIS	73	Fair	67	Fair	64	Poor	68	Fair
1 Atidu IA Inc.	95	Outstanding	70	Fair	64	Poor	76	Fair
2 Amana IA Inc.	57	Poor	65	Fair	64	Poor	62	Poor
3 Bunasabala IA Inc.	67	Fair	66	Fair	64	Poor	66	Fair
Labangan	39	Poor	40	Poor	44	Poor	41	Poor
1 Muchrist IA Inc	38	Poor	39	Poor	40	Poor	39	Poor
3 SANDATA IA, INC.	39	Poor	40	Poor	48	Poor	42	Poor
Pulangui	70	Fair	37	Poor	38	Poor	49	Poor
1 Paradise G5 and G6 IA	72	Fair	36	Poor	36	Poor	48	Poor
2 Kahugpungan IA	62	Poor	24	Poor	33	Poor	40	Poor
3 Mad IA	77	Satisfactory	51	Poor	46	Poor	58	Poor
Mal	73	Fair	74	Fair	77	Satisfactory	75	
1 Weslasufia	67	Fair	69	Fair	76	Satisfactory	71	Fair
2 Labakafia	66	Fair	69	Fair	66	Fair	67	Fair
3 Malkaira	85	Very Satisfactory	85	Very Satisfactory	90	Very Satisfactory	87	Very Satisfactory
TOTAL	65	Poor	60	Poor	62	Poor	62	Poor
Location								
Upstream	69	Fair	61	Poor	62	Poor	64	Poor
Midstream	60	Poor	58	Poor	60	Poor	59	Poor
Downstream	71	Satisfactory	60	Poor	63	Fair	65	Fair
By NIS Type								
Water constraints	63	Fair	56	Poor	66	Poor	62	Poor
Unexploited potential	51	Poor	45	Poor	46	Poor	47	Poor
Market away	73	Satisfactory	74	Satisfactory	77	Satisfactory	75	Satisfactory

Note: "-" no available data

Source: Survey of National Irrigation System, Volume-I, NIA, 2002

Table 4.7 Farm Management by Selected Irrigators Association, 2002

NIS/IA	Water management: Water distribution plan (a) When prepare	(b) Who prepare	(c) How to prepare	How to distribute: Wet season	Dry season	Percent of farmers that follow the cropping pattern (%)	Canal closing time (no water delivery)
San Fabian							
1 Scientific Farming	before water delivery	IA	meeting	continuous	rotation	40	Apr-May
2 BGM	when water is available	IA	meeting	continuous	rotation	30	Apr-May
3 San Juan Babasit	when water is available	IA	meeting	continuous	rotation	20	Apr-May
AMRIS							
1 Picaba	November	IA	consultation	continuous	continuous	75	Apr-Jun
2 Josephian	none	none	none	continuous	rotation	100	Nov
3 Balucoc	none	none	none	rotation	rotation	70	Nov-Apr
Bago RIS							
1 Atidu IA Inc.	when water is available	IA	meeting	continuous	rotation	85	Mar-May
2 Amana IA Inc.	when water is available	IA	meeting	continuous	rotation	90	Mar-May
3 Bunasabala IA Inc.	when water is available	IA	meeting	continuous	rotation	90	Mar-May
Labangan							
1 Muchrist IA Inc	when water is available	IA/NIA	meeting	continuous	continuous	95	March
3 Sandata IA, INC.	when water is available	IA/NIA	meeting	continuous	continuous	99	March
Pulangui							
1 Paradise G5 and G6 IA	one month before water comes	IA	meeting	continuous	continuous	85	Mar-Apr
2 Kahugpungan IA	before cropping	IA	meeting	continuous	rotation	70	Mar-Apr
3 Mad IA	one month before water comes	IA	meeting	continuous	continuous	85	Mar-Apr
Mal							
1 Weslasufia	before cropping	IA/NIA	thru form	continuous	rotation	80	Apr-May
2 Labakafia	before cropping	IA/NIA	thru form	continuous	rotation	89	Apr-May
3 Malkaira	before cropping	IA/NIA	thru form	continuous	rotation	90	Apr-May
TOTAL	before cropping	IA/NIA	thru form	continuous	rotation	76	
Location							
Upstream	when water is available	IA/NIA	thru form	continuous	rotation	77	Apr-May
Midstream	when water is available	IA/NIA	thru form	continuous	rotation	80	Apr-May
Downstream	when water is available	IA/NIA	thru form	continuous	rotation	71	Apr-May
By NIS Type							
Water constraints	when water is available	IA/NIA	thru form	continuous	rotation	30	Apr-May
Unexploited potential	when water is available	IA/NIA	thru form	continuous	rotation	86	Apr-May
Market away	when water is available	IA/NIA	thru form	continuous	rotation	86	Apr-May

NIS/IA	Plowing: Carabao (%)	Mechanical (%)	Harrowing: Carabao (%)	Mechanical (%)	Leveling: Carabao (%)	Mechanical (%)	Planting: Direct seeding	Transplanting	Seeds (sacks)/ ha
San Fabian									
1 Scientific Farming	50	50	10	100	100	100	25	100	2.5
2 BGM	50	50	10	90	100	0	50	50	2.0
3 San Juan Babasit	50	50	10	90	100	0	25	75	2.0
AMRIS									
1 Picaba	0	100	0	100	100	0	0	100	2.0
2 Josephian	0	100	0	100	100	0	80	20	3.0
3 Balucoc	59	41	10	90	100	0	100	0	2.0
Bago RIS									
1 Atidu IA Inc.	90	10	10	90	100	0	85	15	4.0
2 Amana IA Inc.	50	50	20	80	100	0	10	90	4.0
3 Bunasabala IA Inc.	25	75	0	100	100	0	20	80	5.0
Labangan									
1 Muchrist IA Inc	20	80	20	80	100	0	10	90	1.0
3 SANDATA IA, INC.	20	80	20	80	100	0	10	90	1.0
Pulangui									
1 Paradise G5 and G6 IA	100	0	0	100	100	0	75	25	5.0
2 Kahugpungan IA	15	85	0	100	100	0	98	2	6.0
3 Mad IA	100	0	0	100	100	0	80	20	3.0
Mal									
1 Weslasufia	50	50	70	30	100	0	50	50	3.0
2 Labakafia	50	50	50	50	100	0	50	50	3.0
3 Malkaira	50	50	50	50	100	0	50	50	3.0
TOTAL	46	54	16	84	100	6	48	53	3.0
Location									
Upstream	52	48	18	83	100	17	41	63	3
Midstream	31	69	17	83	100	0	50	50	3
Downstream	57	43	14	86	100	0	55	45	3
By NIS Type									
Water constraints	50	50	10	93	100	33	33	75	2
Unexploited potential	44	56	7	93	100	0	52	48	3
Market away	50	50	57	43	100	0	50	50	3

Note: "-" no available data

Source: Survey of National Irrigation System, Volume-III, NIA, 2002

Table 4.8 Frequency of Meetings and Attendance, 2002

NIS/IA	BOD Meeting		GA Meeting		TSA Meeting	
	Frequency	Attendance Rate	Frequency	Attendance Rate	Frequency	Attendance Rate
San Fabian						
1 Scientific Farming	Quarterly	50-70%	Annual	20-30%	Quarterly	50-60%
2 BGM	Semestral	50-70%	Annual	20-30%	Seldom	50-70%
3 San Juan Babasit	Semestral	40-50%	Annual	20-30%	Seldom	70-80%
AMRIS						
1 Picaba	Monthly	70-80%	Annual	<10%	Monthly	<10%
2 Josephian	Quarter	80-90%	Only once	10-20%	Seldom	<10%
3 Balucoc	Monthly	70-80%	Annual	10-20%	Semestral	70-80%
Bago RIS						
1 Atidu IA Inc.	Regular	75-80%	None	-	None	-
2 Amana IA Inc.	Regular	75-80%	None	-	None	-
3 Bunasabala IA Inc.	Regular	75-80%	None	-	None	-
Labangan						
1 Muchrist IA Inc	Monthly	55-60%	Annual	55-60%	Monthly	80-90%
3 SANDATA IA, INC.	Monthly	50-60%	Annual	50-60%	Monthly	80-90%
Pulangui						
1 Paradise G5 and G6 IA	Inactive for 2 yrs.		None	-	None	-
2 Kahugpungan IA	Seldom	40-50%	Seldom	40-50%	None	-
3 Mad IA	Monthly	-	Annual	40-50%	Seldom	-
Mal						
1 Weslasufia	Monthly	75-80%	Semestral	60-70%	Seldom	60-70%
2 Labakafia	Monthly	80-90%	Quarterly	60-70%	Seldom	60-70%
3 Malkaira	Monthly	90-95%	Monthly	70-80%	Seldom	60-70%

Note: "-" no available data
Source: Survey of Irrigators Association, Volume-III, NIA, 2002

Table 4.9 ISF Collection Based On Billed and Collected Area

NIS/IA	Service Area (ha)	Wet Season, 1999-2001					Dry Season, 1999-2001				
		Billed Area (ha)	Collected Area (ha)	% Billed to Service Area	% Collected to Billed Area	Effective ISF Efficiency	Billed Area (ha)	Collected Area (ha)	% Billed to Service Area	% Collected to Billed Area	Effective ISF Efficiency
	1	2	3	4	5	6	7	8	9	10	11
San Fabian	827	737	299	89.1	40.6	36.2	426	170	51.5	40.0	20.6
1 Scientific Farming	361	346	158	95.8	45.7	43.8	205	103	57.0	50.0	28.5
2 BGM	245	194	61	79.0	31.7	25.1	109	33	44.5	30.2	13.4
3 San Juan Babasit	221	197	80	89.3	40.4	36.1	111	35	50.4	31.0	15.6
AMRIS	1380	858	180	62.2	20.9	13.0	906	276	65.7	30.5	20.0
1 Picaba	494	473	108	95.8	22.9	21.9	328	103	66.4	31.2	20.8
2 Josephian	398	180	28	45.2	15.8	7.1	257	72	64.5	28.1	18.1
3 Balucoc	488	205	43	42.0	20.8	8.7	321	102	65.8	31.7	20.8
Bago RIS	2949	1639	702	55.6	42.8	23.8	1666	348	56.5	20.9	11.8
1 Atidu IA Inc.	908	328	241	36.1	73.4	26.5	306	88	33.7	28.6	9.6
2 Amana IA Inc.	942	582	193	61.8	33.2	20.5	610	116	64.7	19.0	12.3
3 Bunasabala IA Inc.	1099	729	268	66.4	36.8	24.4	750	144	68.3	19.2	13.1
Labangan	2760	2550	1867	92.4	73.2	67.6	2329	1932	84.4	83.0	70.0
1 Muchrist IA Inc	1377	1195	903	86.8	75.6	65.6	1152	918	83.7	79.7	66.7
3 SANDATA IA, INC.	1383	1355	964	98.0	71.2	69.8	1177	1014	85.1	86.1	73.3
Pulangui	3090	2323	1069	75.2	46	34.6	2319	789	75.1	34.0	25.5
1 Paradise G5 and G6 IA	809	633	421	78.2	66.6	52.1	631	249	78.0	39.5	30.8
2 Kahugpungan IA	1025	796	360	77.7	45.3	35.2	796	177	77.6	22.2	17.2
3 Mad IA	1256	895	288	71.2	32.2	22.9	893	363	71.1	40.7	28.9
Mal	530	483	427	91.3	88.3	80.6	319	229	60.2	71.8	43.3
1 Weslasufia	130	122	115	93.9	94.2	88.5	78	69	59.7	88.6	52.9
2 Labakafia	279	277	258	99.4	93.1	92.5	193	128	69.2	66.1	45.7
3 Malkaira	121	84	54	69.7	63.8	44.5	48	33	40.2	67.9	27.3
TOTAL	11535	8590	4543	74.5	52.9	39.4	7965	3745	69.0	47.0	32.5
Location											
Upstream	4077	3095	1946	75.9	62.9	47.8	2699	1529	66.2	56.6	37.5
Midstream	2889	2785	1865	96.4	55.1	53.1	2550	1539	88.3	60.4	53.3
Downstream	4568	4434	1801	97.1	40.6	39.4	4444	1466	97.3	33.0	32.1
By NIS Type											
Water constraints	827	737	299	89.1	40.6	36.2	426	170	51.5	40.0	20.6
Unexploited potential	10179	7370	3818	72.4	51.8	37.5	7220	3345	70.9	46.3	32.9
Market away	530	483	427	91.3	88.3	80.6	319	229	60.2	71.8	43.3

Source of Data: NISO
Note: Effective ISF Efficiency=(% Billed Area x % Collected Area)/100

Table 4.10 Income and Expenses of Pilot IAs, 1999-2001

NIS/IA	Income			Expenditure			Net Income		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
San Fabian									
1 Scientific Farming	9,436	3,629	3,629	5,340	3,150	3,919	4,096	479	(290)
2 BGM	3,629	3,629	1,314	2,000	3,800	1,500	1,629	(171)	(186)
3 San Juan Babasit	-	-	-	-	-	-	-	-	-
AMRIS									
1 Picaba	-	-	16,500	-	-	15,000	-	-	1,500
2 Josephian	30,000	30,000	30,000	35,000	35,000	35,000	(5,000)	(5,000)	(5,000)
3 Balucoc	36,000	36,000	5,000	10,000	10,000	10,000	26,000	26,000	(5,000)
Bago RIS									
1 Atidu IA Inc.	25,646	25,646	22,441	22,200	22,200	22,200	3,446	3,446	241
2 Amana IA Inc.	49,649	49,649	43,483	44,640	44,640	44,640	5,009	5,009	(1,157)
3 Bunasabala IA Inc.	29,362	24,468	34,255	24,000	24,000	24,000	5,362	468	10,255
Labangan									
1 Muchrist IA Inc	-	-	-	-	-	-	-	-	-
3 SANDATA IA, INC.	200	-	-	200	-	-	-	-	-
Pulangui									
1 Paradise G5 and G6 IA	44,808	50,504	39,399	33,606	37,878	29,549	11,202	12,626	9,850
2 Kahugpungan IA	41,538	68,988	48,287	39,368	47,309	35,392	2,170	21,679	12,895
3 Mad IA	85,758	87,009	71,856	80,945	61,644	67,854	4,813	25,365	4,002
Mal									
1 Weslasufia	-	-	22,735	-	-	-	-	-	22,735
2 Labakafia	-	-	43,391	-	-	-	-	-	43,391
3 Malkaira	-	-	-	-	-	-	-	-	-
TOTAL	20,943	22,325	22,488	17,488	17,037	17,003	3,455	5,288	5,484
Location									
Upstream	13,315	13,297	17,451	10,191	10,538	11,778	3,124	2,759	5,673
Midstream	24,963	30,453	33,295	24,202	26,150	23,306	762	4,303	9,989
Downstream	25,220	24,580	18,519	19,191	15,941	16,976	6,029	8,639	1,543
By NIS Type									
Water constraints	4,355	2,419	1,648	2,447	2,317	1,806	1,908	103	(159)
Unexploited potential	31,178	33,842	28,293	26,360	25,697	25,785	4,818	8,145	2,508
Market away	-	-	22,042	-	-	-	-	-	22,042

Note: "-" no available data

Source: Income and Expenses Survey of Irrigators Association, NIA, 2002

Table 4.11 Marketing System in Pilot IAs, 2002

NIS/IA	Marketing system of dried paddy			Type of buyer to whom sold	
	Wet season (%)	Dry season (%)	Milled paddy sold	Dealer at field (%)	Retailer at market (%)
San Fabian					
1 Scientific Farming	0	100	0	100	0
2 BGM	0	100	0	50	50
3 San Juan Babasit	100	0	0	0	100
AMRIS					
1 Picaba	0	100	0	50	50
2 Josephian	50	50	0	0	100
3 Balucoc	100	0	10	50	50
Bago RIS					
1 Atidu IA Inc.	10	10	10	50	50
2 Amana IA Inc.	5	10	10	10	90
3 Bunasabala IA Inc.	10	25	10	10	90
Labangan					
1 Muchrist IA Inc	0	0	0	0	100
3 SANDATA IA, INC.	0	0	0	0	100
Pulangui					
1 Paradise G5 and G6 IA	10	20	70	60	40
2 Kahugpungan IA	90	90	90	90	10
3 Mad IA	0	50	50	0	100
Mal					
1 Weslasufia	10	10	10	10	90
2 Labakafia	10	10	10	10	90
3 Malkaira	10	10	10	10	90
TOTAL	24	34	16	29	71
Location					
Upstream	5	40	15	45	55
Midstream	10	10	10	10	90
Downstream	44	17	16	14	86
By NIS Type					
Water constraints	33	67	-	50	50
Unexploited potential	25	32	23	29	71
Market away	10	10	10	10	90

Note: "-" no available data

Source: Survey of Irrigators Association, Volume-III, NIA, 2002

Table 6.1 Summary of Problems and Objectives Identified by Detailed Survey at 6 NIS covering 17 IAs (1/3)

NIS Classification	RIS	IA Aspect	Problem		Objectives	
			Common	Specific	Common	Specific
Water Constraint	San Fabian	Organization	Core Problem: Organizations are non functional. Immediate causes: * No plans, programs, policies and regulations prepared. * Roles and responsibilities are unclear to the officers. * * Inactive members (70-85%) * * Low IA membership (less than 50%) * No clear records and filing system. * Vacancies in BOD and TSAG leadership positions. * Irregular BOD meetings and membership assembly.		Core Objective: Organizations are revitalized & functional. Sub-Objectives: * Formulated plans, programs, policies and regulations. * Roles and responsibilities of leaders are clearly defined and understood. * Active members is 90%. * Membership is 80% from target. * Records are updated and filing system is installed. * Election is conducted regularly per by-laws provisions. * Meetings of BODs and IA membership is regularized.	
		Operation and Maintenance	Core Problem: Low cropping intensity and low farm income. Immediate causes: * Insufficient water supply. * Water delivery and distribution schedule are not followed. * Less than 50% of farmers attend maintenance activities. * No regular maintenance work. * Destroyed and damaged irrigation structures and facilities. * Unauthorized turnouts. * Inappropriate farming technology used by farmers. * No monitoring from NIA.	* BGM IA: Synchronize use of supplemental water from Osnit creek and restoration of NIA deep well. * BGM & San Juan IA's: Policies for proper use shallow tube wells of farmers not formulated.	Core Objective: Improvement of cropping intensity to (125/150%) Sub-Objectives: * Sufficient water supply during the year. * Water delivery and distribution schedule is strictly followed by farmers. * At least 80% of farmers participated in cleaning activities. * Conducted regular maintenance works. * Irrigation structures and facilities are repaired and maintained. * Unauthorized turnouts are closed. * Cropping calendar system is formulated and practiced by farmers. * Installed monitoring system of NIA.	* BGM IA: Water distribution schedule formulated and followed. * BGM & San Juan IA's: Formulated policies for proper use of shallow wells of farmers for proper guidance.
		Financial	Core problem: Immediate causes: * Lack of capabilities in financial recording & management. * Low collection of ISF (less than 30%) * No collection of IA dues. * No defined collection strategy on ISF and membership dues. * No income generating plan and capital build-up. * Unavailable records for financial auditing.		Core Objective: Sub-Objectives: * Developed skills of IA officers in bookkeeping & financial management. * High collection of ISF from members (75-100%). * 75-100% of membership dues is collected. * Clear collection policies and procedures for ISF and membership dues. * Formulated and implemented income generating plan and capital build-up. * Finance records are prepared and audited regularly.	

Table 6.1 Summary of Problems and Objectives Identified by Detailed Survey at 6 NIS covering 17 IAs (2/3)

NIS	RIS	IA Aspect	Problem		Objectives	
Classification			Common	Specific	Common	Specific
Potential Un-exploited Type	Angat Bago Labangan Pulangui	Organization	Core Problem: Organizations are weak in leadership and management performance. Immediate causes: * 70-90% of IA members are inactive. * Higher rate of non IA member cultivators (40-85% of farmers are non-IA) * BOD and IA meetings are not regularly conducted. * Information not properly disseminated. * Records are incomplete and not updated. * By-laws provisions are not reviewed & updated. * Vision, Mission, Goals, Plans & Programs are not formulated. * 75-100% of standing committees are not functional. * Limited skills in planning, implementation, monitoring and evaluation. * No membership education conducted. * Officers are overstaying and not formally elected as provided in the by-laws.	* Labangan: Too large area of coverage (around 1,500 ha/IA) with limited organizational activities, particularly the Muslim farmers. * Pulangui: NIA-IA relation is unfavorable, particularly in Mad IA. * Bago: Covers wide area of operation (based on WM division) in AMANA IA only.	Core Objective: Organizations are effective in implementing leadership and management functions. Sub-Objectives: * 80-100% of IA members are active. * All farmer-cultivators are IA members. * BOD & IA meetings are conducted regularly. * Regularized information dissemination. * Records are complete and updated. * Conducted review of by-laws and proposed amendments. * Formulated strategic development plans, programs and policies. * Standing committees are organized and functional. * Trained and capable leaders in planning, implementation, monitoring and evaluation. * Membership education conducted. * Officers are elected by members as per by-laws provisions.	* Labangan: IA reorganization based on hydrological boundaries. * Pulangui: Adequate supervision of NIA & IA on the implementation of WDD system & schedule. * Bago: Reorganization of AMANA IA to cover smaller water management area (by lateral).
		Operation and Maintenance	Core Problem: Low O&M management performance. Immediate causes: * * WDD schedule and cropping calendar plan is not properly adopted by farmers. * * Deteriorated irrigation structures and facilities. * * Maintenance work is not regular. * * O&M management technology not transferred to IA by NIA. * * Absence of O&M plans and policies. * * O&M policies not strictly implemented.	* Pulangui: Higher cropping intensity (>190%) against lower ISF collection performance (<50%)	Core Objective: High O&M management performance. Sub-Objectives: * Cropping calendar plan and WDD is synchronized and managed accordingly. * Rehabilitated irrigation structures and facilities. * Conducted regular maintenance work. * Officers are trained on system management and operation technology. * Plans & policies prepared & implemented. * Policies are strictly imposed with sanctions.	* Pulangui: Increased ISF collection to 100%
		Financial	Core Problem: Poor financial management performance. Immediate causes: * * Low ISF collection (31-53%) * * No collection of IA dues. * * Financial plan and budget not formulated. * * Accounting system not properly installed. * * No other income generating activities. * * No capability to prepare project proposal for fund sourcing from outside groups.	* Bago & Labangan: Remuneration from type 1 contract not received. * Pulangui: Miss use of IA incentives by IA leaders. * Bago & Labangan: Unremitted ISF collection.	Core Objective: Organization is financially viable and capable to manage support services to members. * 90% ISF collection performance. 100% collection of members dues/fees. * Plan & budget is formulated & followed. * Installed proper accounting system. * Developed income generating projects. * Technical assistance from NIA & other line agencies is provided.	* Bago & Labangan: Remuneration of type 1 contract & incentives of type 2 contract is promptly paid by NIA. * Pulangui, Bago & Labangan: Strict monitoring of IA officers/leaders in its financial operations/transactions.

Table 6.1 Summary of Problems and Objectives Identified by Detailed Survey at 6 NIS covering 17 IAs (3/3)

NIS Classification	RIS	IA Aspect	Problem		Objectives	
			Common	Specific	Common	Specific
Market-Away Type	Mal	Organization	Core Problem: Organizations are weak in leadership. Immediate causes: * Inactive IA members (50-70%) * Membership is only (45-65%) from target. * Absentee BOD and does not know their dutires and responsibilities. * BOD and IA meetings are not regularly conducted. * Plans, Programs & Policies are not formulated and by-laws provisions are not understood by leaders and members. * Standing committees are not functional. * Limited leadership and management competencies of leaders. * Insufficient records and filing system not installed.		Core Objective: Organizations are functional and with strong leadership. Sub-Objectives: * Members are active (100%) * Membership performance is 100%. * Attendance of BOD to meeting is 100% * BOD and IA meetings are regularly conducted. * Plans, programs and policies are formulated according to by-laws provisions and clearly understood by members. * Standing committees are functional. * High capabilities of officers/leaders in leadership and management functions. * Recording and filing system is installed.	
		Operation and Maintenance	Core Problem: Inadequate water supply to all target irrigation areas during dry season. Immediate causes: * WDD is not properly managed by IA. * O&M policies are not completed & documented properly. * O&M policies not strictly implemented. * Irrigation canal is not properly maintained. * Illegal practices of farmers. * No type 1 contract implemented. * Degradation of watershed areas. * Structural problem (small canal). * Deteriorated irrigation structures and facilities.	* Malkaira IA: Clogging of canals due to problem of garbage disposal.	Core Objective: Adequate water supply all throughout the year (two cropping per year) Sub-Objectives: * WDD is properly managed. * * O&M policies are formulated & documents are disseminated to members. * Policies are strictly imposed with sanctions. * Irrigation canals are properly maintained. * Illegal practices of farmers are stopped. * Type I &2 contracts implemented. * Linkages with DENR for joint action. * Redesigning and rehabilitation work. * Regular maintenance work.	* Malkaira IA: Regular canal clearing is conducted and waste disposal program is launched.
		Financial	Core Problem: Insufficient income to sustain administrative and O&M activities. Immediate causes: * ISF incentives policy is not clearly defined. * Ineffective fund management system. * Financial plan and budget not formulated. * Limited sources of funds. * Membership is hesitant to pay their dues. * Incomplete financial documents/records.	* Labakafia IA: No transparency of IA fund to members.	Core Objective: Sufficient funds to support O&M and organizational activities. Sub-Objectives: * Revised ISF incentives benefit for member. * Effective fund management system. * Formulated financial plan & budget. * Operate various income generating project * Formulated capital-build-up program. * Prepared regular financial report/audit..	* Labakafia IA: Financial reports is regularly prepared and presented to members for information & comments.

Table 7.1 Matrix on Pilot NIS-IA Action Plan based on PRA Survey, Sub-Project 1-1: Building Productive IA (1/5)

Outputs/Activities	NIS Classification: / Pilot NIS:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
		San Fabian	Angat	Bago	Labangan	Pulangui	Mal
Outputs:							
1. Updated master list of IA members.		**1**	**1**	**1**	(1)	(1)	
2. All farmers/actual tillers are registered as IA members.		**2**	(2)	**2**	(2)	**2**	**2**
3. Regular election of IA officers and TSAG leaders.		(3)	**3**	(3)	(3)	(3)	(3)
4. Regular meeting of BOD, general membership, TSAG leaders and functional committees for planning IA activities.		**4**	**4**	(4)	(4)	**4**	(4)
5. IA by-laws reviewed and amended to suit to the present IA situations.		(5)	(5)	**5**	(5)	(5)	(5)
6. Increased farmers participation in all IA activities through sustained information and awareness building.		**6**	**6**	**6**	**6**	**6**	**6**
7. IA reorganization based on hydrological boundaries.		(7)	**7-TSAG level**	**7**	**7**		
Activities:							
1.1 Conduct BOD meeting to finalize membership criteria.		>>>	>>>	>>>	>>>	>>>	
1.2 Conduct listing and profiling of potential members according to land ownership status per TSA.		>>>	>>>	>>>	>>>	>>>	
1.3 Request NIA to gather secondary data from DAR on tenurial status of farmers/irrigators within the area of operation.		>>>	>>>	>>>	>>>	>>>	
1.4 Request DAR to mediate land issues of farmers and members.		>>>	>>>	>>>	>>>	>>>	
2.1 Prepare membership recruitment plan.		>>>	>>>	>>>	>>>	>>>	>>>
2.2 Request NIA to train IA how to conduct pre-membership seminar (PMES).		>>>	>>>	>>>	>>>	>>>	>>>
2.3 Conduct PMES and other membership recruitment activities.		>>>	>>>	>>>	>>>	>>>	>>>
3.1 Screen candidates according to membership and election criteria.		>>>	>>>	>>>	>>>	>>>	>>>
3.2 Hold regular IA election from duly screened candidates.		>>>	>>>	>>>	>>>	>>>	>>>
4.1 Prepare agenda and conduct regular BOD and general assembly meetings.		>>>	>>>	>>>	>>>	>>>	>>>
4.2 Establish proper documentation and information system.		>>>	>>>	>>>	>>>	>>>	>>>
4.3 Prepare and present reports during meetings (concerned officers/leaders) and provide copies of reports to participants.		>>>	>>>	>>>	>>>	>>>	>>>
4.4 Facilitate resolution of issues with active participation of members during meetings.		>>>	>>>	>>>	>>>	>>>	>>>
5.1 Conduct regular review and amendments of IAs by-laws.		>>>	>>>	>>>	>>>	>>>	>>>
5.2 Inform members of proposed amendments and other BOD actions for feedbacks.		>>>	>>>	>>>	>>>	>>>	>>>
6.1 Conduct regular TSAG meetings and monitor attendance.		>>>	>>>	>>>	>>>	>>>	>>>
6.2 Monitor farmer-member activities through farm or home visits.		>>>	>>>	>>>	>>>	>>>	>>>
6.3 Provide services for agricultural production and livelihood and other incentives to members.		>>>	>>>	>>>	>>>	>>>	>>>
6.4 Disseminate information/written notices to members timely.		>>>	>>>	>>>	>>>	>>>	>>>
6.5 Conduct dialogue with members to resolve issues and problems affecting agricultural production.		>>>	>>>	>>>	>>>	>>>	>>>
6.6 Provide/conduct education activities for membership development.		>>>	>>>	>>>	>>>	>>>	>>>
6.7 Formulate and impose disciplinary actions, sanctions and penalties to members who does not participate IA activities.		>>>	>>>	>>>	>>>	>>>	>>>
7.1 Study area divisions and identify farmers and conduct membership recruitment activities.		>>>			>>>		
7.2 Conduct TSAG and IA assemblies to ratify CBL and IA plans and programs.		>>>		>>>	>>>		
7.3 Identify core leaders and conduct election of IA officers & TSAG leaders.		>>>	>>>	>>>	>>>		
7.4Prepare and submit application for registration documents to SEC.		>>>			>>>		

Note: **>)** is general and common activities applied by the NIS-IA Action Plan/**Bold numbers**) is based on PDM prepared by NIS-IAs/ ( ) Additional requirement based on problem tree analysis

Table 7.1 Matrix on Pilot NIS-IA Action Plan based on PRA Survey, Sub-Project 1-2: Installing Management Competencies of IAs (2/5)

Outputs/Activities	NIS Classification: / Pilot NIS:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
		San Fabian	Angat	Bago	Labangan	Pulangui	Mal
Outputs:							
1. Reconfirmed legal status of IAs with SEC office.		**1**	(1)	(1)	(1)	(1)	(1)
2. Different standing committees (Education, Service, Finance, Audit, Organizing, etc.)		**2**	(2)	**2**	(2)	(2)	
3. Systematic and updated administrative records for effective reporting system of IAs.		**3**	**3**	**3**	**3**	**3**	**3**
4. Formation of council IAs		**4**			**4**		
5. Trained and responsible IA officers to perform functional management (planning, organizing, directing, monitoring and evaluation)		**5**	**5**	**5**	**5**	**5**	**5**
6. Organizational linkages with other IAs, NIA, LGUs, and other government line agencies.		(6)	**6**	(6)	**6**	(6)	(6)
7. Physical center for office and training purposes.				**7**	(7)		
Activities:							
1.1 Verify at SEC office of the IAs registration status.		>>>	>>>	>>>	>>>	>>>	>>>
1.2 Comply and submit the necessary requirements to revitalize IAs registration.		>>>	>>>	>>>	>>>	>>>	>>>
2.1 Identify potential leaders for the different standing committees.		>>>	>>>	>>>	>>>	>>>	
2.2 Elect and or appoint members of the different standing committees.		>>>	>>>	>>>	>>>	>>>	
2.3 Conduct committee orientation and planning workshops.		>>>	>>>	>>>	>>>	>>>	
3.1 Collect, review, consolidate, and update available IA records and prepare necessary files for record keeping		>>>	>>>	>>>	>>>	>>>	>>>
3.2 Install logbook system for incoming and outgoing communications and documents.		>>>	>>>	>>>	>>>	>>>	>>>
3.3 Conduct proper turn-over of documents to the incoming IA officers/TSAG leaders.		>>>	>>>	>>>	>>>	>>>	>>>
3.4 Prepare minutes of meetings and IA reports.		>>>	>>>	>>>	>>>	>>>	>>>
4.1 Conduct organizing plan with IA leaders.		>>>			>>>		
4.2 Formulate Council by-laws and election of officers.		>>>			>>>		
5.1 Conduct training for IA leaders.		>>>	>>>	>>>	>>>	>>>	>>>
5.2 Mobilize IA leaders to attend trainings to improve responsibility performance.		>>>	>>>	>>>	>>>	>>>	>>>
6.1 Conduct consultation meetings with barangay council, LGUs and line agencies.		>>>	>>>	>>>	>>>	>>>	>>>
6.2 Attend and participate coordination meetings called by NIA and other agencies.		>>>	>>>	>>>	>>>	>>>	>>>
7.1 Arrange lands and buildings within the area of operation of IAs.				>>>	>>>		
7.2 Request needed materials for the construction of IA centers.				>>>	>>>		

Table 7.1 Matrix on Pilot NIS-IA Action Plan based on PRA Survey, Sub-Project 2-1: Formulating Rational O&M Policy and Plan (3/5)

Outputs/Activities	NIS Classification: Pilot NIS:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
		San Fabian	Angat	Bago	Labangan	Pulangui	Mal
Outputs:							
1. Written practical O&M policies, rules and regulations.		**1**	**1**	**1**	**1**	**1**	**1**
2. Adopted integrated cropping calendar.		**2**	(2)	(2)	(2)		
3. Adopted water delivery and distribution schedule.		(3)	**3**	**3**	(3)	(3)	
4. Coordination mechanism among IAs in the implementation of O&M activities.		**4**	(4)	(4)	(4)	(4)	**4**
5. Operationalized Type 1 and 2 contracts.				**5**	**5**		**6**
6. Active participation and high awareness of IA members for O&M activities.		(6)	(6)	**6**	**6**	(6)	**6**
Activities:							
1.1 Conduct O&M planning workshop and training for IA leaders.		>>>	>>>	>>>	>>>	>>>	>>>
1.2 Facilitate consultation meetings with IA members on O&M policy implementation procedures.		>>>	>>>	>>>	>>>	>>>	>>>
1.3 Prepare O&M information materials for distribution to members.		>>>	>>>	>>>	>>>	>>>	>>>
1.4 Set-up information boards in strategic location within the area of operation of the IAs.		>>>	>>>	>>>	>>>	>>>	>>>
2.1 Request NIA to conduct orientation seminar to IA on cropping calendar system.		>>>	>>>	>>>	>>>		
2.2 Prepare cropping calendar per farmer/TSA/IA.		>>>	>>>	>>>	>>>		
3.1 Conduct WDD formulation workshop and training based on cropping calendar.		>>>	>>>	>>>	>>>	>>>	
3.2 Orient IA members of the water delivery and distribution schedule for proper guidance.		>>>	>>>	>>>	>>>	>>>	
3.3 Monitor implementation of WDD schedule and revise accordingaly.		>>>	>>>	>>>	>>>	>>>	
4.1 Request NIA to convene the IA coordinating council and the System Management Committee.		>>>	>>>	>>>	>>>	>>>	>>>
4.2 Conduct training on conflict resolution to IA officers and leaders.		>>>	>>>	>>>	>>>	>>>	>>>
5.1 Request NIA to conduct proper orientation on the contract provisions with IA officers and members.				>>>	>>>		>>>
5.2 Request NIA to renew Type 1 and 2 contracts with IAs.				>>>	>>>		>>>
5.3 Request NIA to prioritize payments of Type I remuneration and Type 2 incentives.				>>>	>>>		>>>
5.4 Come up with records on actual ISF collection.				>>>	>>>		>>>
6.1 Conduct regular information dissemination activities on O&M policies to IA members.		>>>	>>>	>>>	>>>	>>>	>>>
6.2 Set up information centers/bulletin boards.		>>>	>>>	>>>	>>>	>>>	>>>
6.3 Activate functions of the Public Relation Officers of IAs.		>>>	>>>	>>>	>>>	>>>	>>>

Table 7.1 Matrix on Pilot NIS-IA Action Plan based on PRA Survey, Sub-Project 2-2: Implementing Effective O&M policy and plan (4/5)

NIS Classification: / Outputs/Activities / Pilot NIS:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
	San Fabian	Angat	Bago	Labangan	Pulangui	Mal
Outputs:						
1. Effective and equitable water delivery and distribution schedule.	**1**	**1**	**1**	**1**	**1**	**1**
2. Maintained irrigation canals and farm ditches.	**2**	**2**	**2**	**2**	**2**	**2**
3. Repaired/rehabilitated irrigation facilities and structures including road networks.	**3**	**3**	**3**	**3**	**3**	**3**
4. Agreed sanctions and penalties to IA members who violate O&M policies and illegal practices of farmers.	**4**	(4)	(4)	**4**	**4**	**4**
5. Supplemental irrigation water from shallow wells during dry seasons.	**5**					
6. Resolution of conflict between the upstream and the downstream IAs related to water distribution and utilization.	(6)	(6)	**6**		(6)	(6)
7. Active service committees and TSA groups for implementation of O&M policies, rules and regulations.	(7)	**7**	**7**	**7**	(7)	
Activities:						
1.1 Formulate IA water delivery and distribution scheduling with farmers per TSA.	>>>	>>>	>>>	>>>	>>>	>>>
1.2 Monitor implementation of WDD schedule and install fines and penalties to farmers who violates the schedule.	>>>	>>>	>>>	>>>	>>>	>>>
1.3 Request support of barangay officials in O&M policy implementation.	>>>	>>>	>>>	>>>	>>>	>>>
1.4 Conduct regular TSA meetings to improve WDD plan.	>>>	>>>	>>>	>>>	>>>	>>>
1.5 Organize collective and or simultaneous farming schedule per IA/TSAG.	>>>	>>>	>>>	>>>	>>>	>>>
2.1 Conduct regular canal clearing (dredge/de-clog silted lateral canals and reservoir).	>>>	>>>	>>>	>>>	>>>	>>>
2.2 Repair damaged canal lining, eroded embankment and farm ditches.	>>>	>>>	>>>	>>>	>>>	>>>
2.3 Construct drainage system of farms.	>>>	>>>	>>>	>>>	>>>	>>>
3.1 Request NIA to conduct repair and rehab project.	>>>	>>>	>>>	>>>	>>>	>>>
3.2 Coordinate with barangay officials and LGUs for possible support in repair and maintenance works.	>>>	>>>	>>>	>>>	>>>	>>>
3.3 Mobilize members to conduct minor repair of irrigation canals and facilities using indigenous materials.	>>>	>>>	>>>	>>>	>>>	>>>
4.1 Close unauthorized turnouts and checking and imposed penalties to concerned farmers.	>>>	>>>	>>>	>>>	>>>	>>>
4.2 Undertake regular monitoring/site inspection for timely response.	>>>	>>>	>>>	>>>	>>>	>>>
4.3 Coordinate with barangay officials for support and police assistance.	>>>	>>>	>>>	>>>	>>>	>>>
5.1 Request NIA to provide shallow wells during dry seasons to selected areas.	>>>					
5.2 Coordinate with LGUs for assistance of additional facilities (construction of shallow wells/deep wells).	>>>					
6.1 Conduct dialogue with all IAs to discuss problems and issues on WDD within one system.	>>>	>>>	>>>		>>>	>>>
6.2 Request NIA to conduct SMC meeting.	>>>	>>>	>>>		>>>	>>>
6.3 Initiate contract signing among IAs for a common WDD plan.	>>>	>>>	>>>		>>>	>>>
7.1 Reorganize and mobilize TSA leaders to disseminate WDD schedule.	>>>	>>>	>>>	>>>	>>>	
7.2 Organize and operationalize service committee functions.	>>>	>>>	>>>	>>>	>>>	
7.3 Conduct committee planning.	>>>	>>>	>>>	>>>	>>>	
7.4 Request NIA to conduct enhancement trainings for the service committee members and TSAG leaders.	>>>	>>>	>>>	>>>	>>>	
	>>>	>>>	>>>	>>>	>>>	

Table 7.1 Matrix on Pilot NIS-IA Action Plan based on PRA Survey, Sub-Project 3-2: Collection Enhancement of IA's Dues and ISF (5/5)

Outputs/Activities	NIS Classification: / Pilot NIS:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
		San Fabian	Angat	Bago	Labangan	Pulangui	Mal
Outputs:							
1. Defined strategies, policies and procedures for IA dues and ISF collection.		**1**	**1**	**1**	**1**	**1**	**1**
2. Trained IA officers and leaders in financial management and bookkeeping.		**2**	(2)	(2)	**2**	(2)	(2)
3. Systems on financial recording, auditing and budget planning.		**3**	**3**	**3**	**3**	**3**	**3**
4. Fund raising and income generating programs plans and policies of IA.		**4**	**4**	(4)	(4)	(4)	(4)
5. Members' capital build-up scheme.		**5**	(5)	(5)	(5)	(5)	(5)
6. Livelihood assistance to members (credit, micro-enterprise, income generating projects, and health insurance).		**6**	**6**	**6**	**6**	**6**	(6)
7. Renewed Type 1 and 2 contracts.				**7**	**7**		**7**
8. Operation of IA assembling market.				(8)		(8)	**8**
Activities:							
1.1 Conduct planning workshop on collection of ISF and membership dues.		>>>	>>>	>>>	>>>	>>>	>>>
1.2 Implement and monitor regularly collection activities.		>>>	>>>	>>>	>>>	>>>	>>>
1.3 Impose sanctions against farmers who do not pay their obligations to the IA.		>>>	>>>	>>>	>>>	>>>	>>>
2.1 Conduct training on financial management, bookkeeping and auditing under assistance with NIA.		>>>	>>>	>>>	>>>	>>>	>>>
2.2 Identify and develop potential IA leaders to perform management functions for IA livelihood projects and services.		>>>	>>>	>>>	>>>	>>>	>>>
3.1 Appoint bookkeepers and revitalize auditing committees to perform auditing functions.		>>>	>>>	>>>	>>>	>>>	>>>
3.2 Consolidate all financial records for proper filing and bookkeeping works.		>>>	>>>	>>>	>>>	>>>	>>>
3.3 Develop policies, systems and procedures (PSP) for proper guidance in financial management operations.		>>>	>>>	>>>	>>>	>>>	>>>
4.1 Prepare fund raising and income generating plan under assistance of other government agencies.		>>>	>>>	>>>	>>>	>>>	>>>
4.2 Implement and monitor fund raising and income generating activities of IAs.		>>>	>>>	>>>	>>>	>>>	>>>
5.1 Formulate CBU scheme of IAs.		>>>	>>>	>>>	>>>	>>>	>>>
5.2 Provide services and incentives to members who participated in CBU campaign activities.		>>>	>>>	>>>	>>>	>>>	>>>
6.1 Formulate livelihood project under assistance of NIA and other line agencies.		>>>	>>>	>>>	>>>	>>>	>>>
6.2 Identify and evaluate potential IA members for assistance.		>>>	>>>	>>>	>>>	>>>	>>>
6.3 Forecast needed resources for the project and attend training to gain more ideas on how to manage economic projects.		>>>	>>>	>>>	>>>	>>>	>>>
6.4 Request and negotiate with other line agencies for financial assistance.		>>>	>>>	>>>	>>>	>>>	>>>
7.1 Negotiate NIA for renewal of IAs type 1 and type 2 contracts.				>>>	>>>		>>>
7.2 Prepare documentary requirements.				>>>	>>>		>>>
7.3 Submit documents to NIA and follow-up.				>>>	>>>		>>>
7.4 Install systems and procedures for the implementation of type 1 and 2 contracts.				>>>	>>>		>>>
8.1 Preparation of plan of action for IA assembling market program.				>>>		>>>	>>>
8.2 Conduct market research and marketing planning workshops with the IA officers and leaders.				>>>		>>>	>>>
8.3 Conduct training on agri-business to IA leaders.				>>>		>>>	>>>
8.4 Install of market center in coordination with other line agencies and private traders/dealers.				>>>		>>>	>>>

Table 7.2 Input Requirement for Pilot NIS-IA Strengthening, IA Organization (1/3)

Inputs	NIS Classification: / Pilot NIS-IA:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
		San Fabian	Angat	Bago	Labangan	Pulangui	Mal
IA:							
1. Active participation of IA officers and leaders in meetings and training seminars.		**1**	**1**		**1**	**1**	**1**
2. Traveling expenses to officers/leaders to attend meetings and trainings outside the area.		**2**	**2**	**2**			**2**
3. Venues for meetings and training seminars at the field level.		**3**	**3**	**3**			**3**
4. Members' counterpart for foods during meetings and training seminars at the field level.		**4**	**4**	**4**	**4**		
5. Voluntary works during "bayanihan" activities of the IA.		**5**					**5**
6. Records of IA activities.			**6**		**6**		**6**
7. Coordination with LGUs for technical and materials resources.				**7**	**7**		
8. Timely information to farmers and IA members.				**8**			
9. Technical preparatory activities at the field level for meetings and training.				**9**			**9**
10. Monitoring members participation in IA activities.						**10**	
11. Typewriter and office supplies/stationery.							**11**
NIA:							
1. Masterlist of farmers.		**1**					
2. Minutes of meetings of IA.		**2**	**2**				
3. Logistic support (venue, vehicles, etc.) and budget for IA activities.		**3**	**3**			**3**	**3**
4. Trainers' training for pre-membership seminars, organization development and leadership		**4**	**4**		**4**		
5. Support for IA membership survey/profiling of actual tillers.			**5**				
6. Organizing assistance to IA.				**6**			
7. Monitoring and evaluation mechanism of the IAs and project.				**7**	**7**	**7**	
8. Monthly coordination meetings .				**8**			
9. Technical and materials supports for IAs from different line agencies.					**9**		**9**
10. Assistance in planning and implementation of plans and programs of IAs.						**10**	**10**
11. Training manuals and training kits for trainees.							**11**

Table 7.2 Input Requirement for Pilot NIS-IA Strengthening, IA Operation and Maintenance (2/3)

Inputs	NIS Classification: / Pilot NIS-IA:	Water Constrain Type	Potential Un-Exploited Type				Market Away Type
		San Fabian	Angat	Bago	Labangan	Pulangui	Mal
IA:							
1. Active participation of IA members in O&M policy planning, implementation, rehabilitation and maintenance (cleaning) works.		**1**	**1**	**1**	**1**	**1**	**1**
2. Trainable leaders for the different TSAs to handle O&M works.		**2**		**2**	**2**		
3. Coordination with LGUs, and line agencies for O&M arrangements.			**3**	**3**	**3**		
4. Local materials for repair and maintenance activities of the irrigation canals and farm ditches.				**4**	**4**		**6**
5. Resources for food counterpart during O&M trainings/workshops/meetings.				**5**			**5**
6. Voluntary labor for O&M (repair and maintenance works)		**6**					**6**
7. Small farm tools and equipment for repair and maintenance works.		**7**					
NIA/Other Agencies:							
1. Hydrological data and maps, engineering reports and cost estimates for repair and maintenance budget.		**1**	**1**			**1**	**1**
2. Fund allocation for repair and maintenance of the NIS major facilities.		**2**	**2**	**2**	**2**		
3. Support for the O&M project from LGUs and line agencies.				**3**	**3**	**3**	
4. Training for IA leaders in O&M policy planning, implementation , monitoring and evaluation works and system management.		**4**				**4**	**4**
5. Training on scientific irrigation farming technology to IA members-farmers.			**5**				
6. Facilitation of joint walkthrough with LGUs.						**6**	**6**
7. Crops and technology needed by farmers.		**7**					
8. Logistic support (supplies, fuel, vehicles, equipment) for O&M trainings and operations of IAs.		**8**	**8**				**8**

Table 7.2 Input Requirement for Pilot NIS-IA Strengthening, IA Financial Performance (3/3)

Inputs	NIS Classification: / Pilot NIS-IA:	Water Constrain Type San Fabian	Potential Un-Exploited Type				Market Away Type Mal
			Angat	Bago	Labanga n	Pulangui	
	IA:						
1.	Attendance of IA officers and leaders during workshops and training to enhance skills in financial management.	**1**		**1**			**1**
2.	Local counterpart fund or donations for IA projects, training and O&M activities.			**2**			**2**
3.	Financial assistance for IA livelihood projects from other line agencies.	**3**		**3**			
4.	Members patronage to IA livelihood projects and business.	**4**	**4**	**4**	**4**	**4**	
5.	Market networking with other IAs.			**5**			
6.	Members' capital-build-up and savings.	**6**	**6**		**6**	**6**	**6**
7.	Monitoring and audit report of IA financial performance.				**7**	**7**	
8.	IA task force per TSA for ISF and membership dues collection.					**8**	
9.	Participation of IA wives for IA dues collection.					**9**	
10.	Voluntary works of IA officers, leaders and members in the implementation of income generating projects.						**10**
	NIA/Other Agencies:						
1.	Technical and logistic support to IA for trainings and meetings.	**1**		**1**			**1**
2.	Technical assistance on financial management, entrepreneurship and bookkeeping functions.	**2**	**2**			**2**	**2**
3.	Assistance in ISF collection of IAs.					**3**	
4.	Assist IA in listing of water users per TSA per IA.	**4**					**4**
5.	Monitoring and evaluation reports of IAs financial operations and recommended solutions.			**5**	**5**	**5**	
6.	Support for livelihood program and other technical assistance from line agencies.	**6**	**6**	**6**	**6**	**6**	
7.	Assistance in market information network among IAs (NIS/CIS), private traders, LGUs and line agencies for better price and assembling market facilities such as warehouse, dryers, etc.			**7**			**7**
8.	Report of IAs' ISF collection performance.	**8**	**8**				**8**
9.	Project proposals, business planning and feasibility study.				**9**	**9**	
10.	Funding for post harvest facilities.						**10**
11.	Technician for operating post harvest facilities.						**11**

Table 8.1 Resources of Public Agencies and Requirement of IA's Identified during the Wrap-Up Workshop (1/3)

Agencies	Resources/Services	Procedures/Steps to Access Resources	Requirements of IA
National Food Authority (NFA)	* Palay support price of P9.00/10.00/kl (with 14%MC) * Hauling/drying support fee of P.10/kl * Mechanical drying services for a fee of P37.54/bag of 50 kls.	* Apply for permit from NFA. * Open for Farmers Pass Book (for 300 plus bags) * Ask for certification from MAO or Barangay Captain. * Submit photo copy of land title or tax declaration.	* Application document * Certification from MAO or Barangay Captain * Photo copy of land title (for individual farmer) * BOD resolution for the permit application * Registration fees
Department of Agrarian Reform (DAR)	* Training services for business planning & entrepreneurship courses. * Legal & para-legal services on land ownership issues. * Project assistance thru "Bayan Anihan and ARC Development Program"	* Make formal request to DARPO office for training assistance. * Make formal request and visit to DAR-MARO office. * Submit project proposal/plan & coordinate with ARC cooperative in the area.	* Letter request * Follow-up visit * Initiate consultation meeting * Project proposal Letter request & follow-up visit to ARC coop.
Provincial Agriculture Office (PAO)	* Livelihood assistance (livestock, poultry, fishery & crops production & other income generating projects) * Technical assistance in project planning, proposal making, feasibility study and management planning. * Foster production agreement with SMC (for yellow corn, cassava and soy beans)	* Submit project proposal/plan and other documentary requirements. * Submit registration/Accreditation certificate in any authorized agencies (SEC or DOLE) * Secure endorsement from the BD Council. * Make formal request to the Provincial Agriculture Officer and submission of required documents. * Coordinate with the MAO office for proper orientation. * Strong IA organization.	* Project proposal * Registration paper * Endorsement from the BDC/MDC/PDC * Letter request * Letter request & Production Plan/Proposal
Municipal Agriculture Office (MAO)	* Livelihood assistance (livestock, poultry, fishery & crops/vegetable production & other income generating projects) * Farmers technology training. * Seeds dispersal in a form of subsidized loan. * Production monitoring and Technical assistance to farmers. * Livestock immunization program	* Submit project proposal/plan and other documentary requirements. * Submit registration/Accreditation certificate in any authorized agencies (SEC or DOLE) * Seek endorsement from the BD Council * Coordination with the office of the Municipal Agriculturist. * Identify participating farmers and provide logistical support such as food and training supplies) * Farmers apply at the MAO office thru the MAO technicians assign in the area. * Request the office of the MAO for technical assistance thru the assign technician. * Participate Immunization Day at the barangay.	* Letter request & BOD resolution Project Proposal * Registration paper * Endorsement from the BDC/MDC * Letter request & follow-up visit * List of farmer participants & local counterpart for food and training materials * List of farmers and application * Letter request & BOD resolution * Mobilization of farmers

Table 8.1 Resources of Public Agencies and Requirement of IA's Identified during the Wrap-Up Workshop (2/3)

Agencies	Resources/Services	Procedures/Steps to Access Resources	Requirements of IA
Bureau of Agricultural Statistics (BAS)	* Price monitoring of palay * Production monitoring of palay	* Make a request for the needed information.	* Request letter
Land Bank of the Philippines	* Credit assistance	* Submit loan application documents	* No pending loan from LBP.
		* IA member should be a Coop member.	* Coop membership of IA members (individual)
		* Submit the lending documentary requirements and pass the evaluation.	* BOD resolution * IA accreditation from the LBP-DAC
	* Technical training assistance	* Request LBP-Development Assistance Center (on case-to-case basis)	* Letter request & follow-up visit
	* Provide training modules and other reference materials for planning and training purposes.	* Request LBP-Development Assistance Center for support.	* Letter request & follow-up visit
QUEDANCOR	* Credit assistance	* Submit loan application documents & follow-up * Seek certification of LBP	* Loan application documents * BOD resolution & certification of LBP
Fertilizers and Pesticides Authority (FPA)	* Licensing and regulatory functions	* Submit application requirement for permit in fertilizers and pesticides dealership.	* Application documents & application fees
	* Conduct trainings and seminars on fertilizer application and pest and diseases control.	* Request through the office of the Department of Agriculture.	* Letter request & follow-up visit
Department of Health (DOH)	* Environmental Sanitation Program (garbage and excreta disposal management)	* Coordinate with the local health unit for consultation and planning.	* Letter request & follow-up visit * O&M Policy (garbage and excreta disposal management)
		* Submit BOD resolution to the Barangay Council	* BOD resolution
Department of Environment and Natural Resources (DENR)	* Agro-Forestry and Reforestation Program.	* Organized groups.	* Letter request & follow-up visit
		* Area of operation is covered by the DENR project.	* Project Proposal
	* Licensing and regulatory functions.	* Submit requirement for permit application (cutting of trees and quarry activities)	* BOD resolution * Other documents required for the project.
Department of Trade and Industry (DTI)	* Provide video tapes on entrepreneurship training. * Technical trainings on business management & entrepreneurship (for CARP beneficiaries only)	* Request DTI for assistance.	* Letter request & follow-up visit
	* Financing for non-agri production projects	* Coordinate with DTI representative for orientation.	* Business proposal
Cooperative Development Authority (CDA)	* Licensing and regulatory functions.	* For cooperative groups only	
	* Technical assistance in cooperative leadership training and business management planning.	* Request the CDA Provincial Officer	* Letter request & follow-up visit

Table 8.1 Resources of Public Agencies and Requirement of IA's Identified during the Wrap-Up Workshop (3/3)

Agencies	Resources/Services	Procedures/Steps to Access Resources	Requirements of IA
National Statistic Office (NSO)	* Provide data to farmers.	* Request the provincial office of NSO for data needed in action planning purposes.	
Local Government Units: 1. Office of the Municipal Mayor 2. Office of the Barangay Captain	* Issuances of municipal and barangay ordinances supportive to the interest of the IA members * Allocation of funds for road rehabilitation and maintenance works. * Allocation of funds for irrigation maintenance work. * Livelihood assistance for farmers.	* Request to concern LGUs through a formal IA Board Resolution. * Prepare and submit requirements per instruction of the concern officials or LGU officers.	* Letter request & follow-up * BOD resolution of proposed ordinances * Letter request & BOD resolution * Letter request & follow-up * Letter request & project proposal
Technical Education and Skills Development Authority (TESDA)	* Technical training services.	* Submit formal request of IA. * Prepare and submit program plan for technical training. * Coordinate with TESDA area coordinator.	* Letter request & follow-up visit/meeting * Program plan
Provincial Planning and Development Office (PPDO)	* Assistance in project planning/business planning/ & feasibility study. * Provide data for training and planning purposes. * Provide resource persons for training.	* Submit request for technical assistance. * Make follow-up visits & consultation meeting. * Submit program/activity plan	* Letter request * Program/Activity plan
Municipal Planning and Development Office (MPDO)	* Assistance in project planning/business planning/ & feasibility study. * Provide data for training and planning purposes. * Provide resource persons for training.	* Submit request for technical assistance. * Make follow-up visits & consultation meeting. * Submit program/activity plan	* Letter request * Program/Activity plan
National Irrigation Authority (NIA)	* Institutional Development Assistance * Irrigation rehabilitation, repair and maintenance work. * Resource generation for Ias.	* Coordinate with NISO IDO. * Prepare and submit IA Action Plan * Prepare and submit livelihood project plan. * Prepare and submit business plan.	* Letter request and BOD resolution * IA action plan * Livelihood project plan * Business plan
Department of Agriculture (DA)	* Provision of post harvest facilities through soft loan. * Livelihood assistance for farmers. * Seeds dispersal (subsidized price)	* Submit project proposal and other documents. * Submit BOD resolution with cover letter * Evaluation visit of DA technicians. * Seek the endorsement of MAO officer & Barangay Captain)	* Letter request and BOD resolution * Project proposal * Endorsement of MAO and Barangay Captain * Follow-up visits * Other fees required.

Table 11.1 IA Organizational Strengthening Sub-Project 1-1 : Building Productive IAs

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through 90% of organized IAs are capable to entering contracts on IMT at end of the project.	• Income of IA members • Number of IMT contract with IAs and FIAs	• Livelihood survey of IA members • Monitoring and evaluation of IA (IA Functionality Survey)	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose 1.1 75% or more IA members actively participate in meeting and O&M activities	• IA Functionality level (75 to 84%) • 75% or more water users are IA members • 75% or more IA members participate in IA activities	• IA Functionality Survey • IDP Report	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA 1. Policies, procedures and guidelines for the effective implementation of IMT 2. Community organization module (strategies, approach, etc.: Ref. Sub-Project 1-3) 3. Updated master list of IA members 4. System Management Committee (SMC) in all NIS 2. IAs 1. Updated master list of IA members 2. All farmers/actual tillers are registered as IA members 3. Regular election of IA officers and TSAG leaders 4. Regular meeting of BOD, general membership, TSAG leaders and functional committees for planning IA activities 5. IA by-laws reviewed and amended to suit to the present IA situations 6. Increased farmers participation in all IA activities 7. IA reorganization based on hydrological boundaries 8. Strong provincial IA federation	1. NIA • Applied and utilized number of cases on IMT guidelines • Number of defined CBL • Evaluation of CBL contents 2. IAs • Evaluation of IA officers and performance	1. NIA • Administrative Order on IMT policies, procedures and guidelines • Monitoring and evaluation on IMT contracts and performance, and CBL IAs 2. • IA annual report • Record of IA meeting	• IMT guidelines are used and effect for IA strengthening • IA officers are appreciated by majority of members
Activities 1. NIA 1.Assess functional and participatory structures of IAs, develop community organization approaches, and adopt to IA strengthening (processes for policy formulation, project management, conflict resolution, genders, and IA leader selection (Ref. Sub-Project 1-3) 2. Joint NIA-IA review of the organizing process and methods and implement recommendations for strengthening IAs 3. Joint NIA-IA mater list update covering tenurial condition and identifying potential members 4. Establish System Management Committee (SMC) in all NIS 2. IA 1.Conduct BOD meeting to finalize membership criteria, profile potential members, & request NIA/DAR to get data and mitigate land issues 2. Prepare membership recruitment plan, & conduct pre-membership seminar 3. Screen candidates based on membership and election criteria, & implement regular IA election 4.Prepare agenda and conduct meetings, establish proper documentation, provide copies of reports, & facilitate resolution of issues with participation 5.Conduct regular review and amendment of IAs By-laws, & inform members 6.Conduct regular TSAG meetings, monitor members' activities, provide support for agriculture and livelihood, conduct dialogue with members for solution of issues, provide educational activities, & formulate and impose sanctions and penalties to non-performing members 7.Study area division, conduct meetings, identify potential leaders, implement election, & submit application for SEC registration 8.Study PIAF status, prepare and implement strengthening plan	**Inputs for Pilot NISs** 1. NIA • Task force for IA organizational strengthening • Budget for IDP activities • Original master list, parcellary map, & other records • Study on IMT performance and IMT implementation guidelines • Assign IDOs and Farmer Irrigatiors Organizer (FISs) • Monitoring and evaluation of pilot activities 2. IA • Attendance of IA officers and leaders during meeting and training • Travel expenses for officers and leaders • Venues and technical preparatory works for meeting and training • Members' counterpart for foods during meeting and training • Voluntary works of IA members • Records of IA activities • Coordination with LGUs • Timely information to farmers • Monitoring and evaluation of pilot activities	**Inputs for Nationwide Replication** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation 2. IA • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA organizational strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for the activities. • NIA task force for IA organizational strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening **Pre-conditions** Farmers/IAs are willing to cooperate with pilot and replication programs.

Note : PIAF ; Provincial IA Federation

Table 11.2 IA Organizational Strengthening Sub-Project 1-2 : Installing Management Competencies of IAs

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through 90% of organized IAs are capable to entering contracts on IMT at end of the project.	• Income of IA members • Number of IMT contract with IAs and FIAs	• Livelihood survey of IA members Monitoring and evaluation of IA (IA Functionality Survey)	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose • Strengthen capacities of 90% of IAs to do situation analysis, planning, implementation, monitoring and evaluation (on O&M, Financial and organizational management aspects)	• IA Functionality level (75 to 84%) • Records and reports of IA activities	• IA Functionality Survey • IDP report • IA annual report	Economic situation of the Philippines and paddy price do not deteriorate seriously.
Outputs 1. NIA 1. Strategies/procedures to develop the capability of the IA Officers in managing their organization and IA activities (Ref. Sub-Project 1-3) 2. IA training packages (Ref. Sub-Project 1-3) 2. IAs 1. Reconfirmed legal status of IAs with SEC 2. Different standing committees 3. Systematic and updated administrative records 4. Council /Federation of IAs 5. Trained and responsible IA officers 6. Organizational linkage with other IAs, NIA, LGUs, other gov. agencies 7. Physical center for office and training purposes	1. NIA • Improved strategies, procedures, methodologies on capability development of IAs / Training packages • Trained trainers at RIOs and ISOs 2. IAs • IA's plans and evaluation at 90% of IAs • Records and reports on IA activities • M&E reports	1. NIA • Reports and guideline for capability development of IAs • Training modules • Training record and trainees' evaluation 2. IAs • IA annual report • IA's records and reports	• IMT guidelines are used and effect for IA strengthening • IA officers are appreciated by majority of members
Activities 1. NIA 1. NIA-IA joint review of the processes for situation analysis, planning, implementation, monitoring and evaluation (Ref. Sub-Project 1-1) 2. RIO/ISO teams train IA leaders using the improved IA training packages and methodologies based on a TNA (Ref. Sub-project 1-3) 2. IA 1. Verify at SEC office of IA registration status, & comply and submit necessary requirement 2. Identify potential leaders, elect /appoint committee members, & conduct orientation and planning workshops 3. Collect, review, consolidate and update IA records, install logbook system, conduct proper turn-over, & prepare minutes and reports 4. Request NIA for organization planning, formulate council-By-laws, & elect officers, 5. Request NIA training of IA leaders, & mobilize IA leaders to attend training 6. Conduct consultation meeting with LGUs and line agencies, & attend the meetings 7. Arrange lands and building for IA center, & request for funding	**Inputs for Pilot NISs** 1. NIA • Task force for IA organizational strengthening • Budget for IDP activities • Study on present level of IA management skills • Guideline and training packages for capability development of IAs (Ref. Sub-Project 1-3) • Trainers' training (RIO/ISO) and training packages (IA leaders/members) (Ref. Sub-Project 1-3) • Implementation, monitoring and evaluation of pilot activities IA • Meeting sessions and documentation for pilot activities 2. • Participation to training program . • Venues and preparatory works for meeting and training • IA's counterpart for foods during meeting and training • Fund for record and filing system, and IA center establishment • Implementation, monitoring and evaluation of pilot activities	**Inputs for Nationwide Replication** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation 2. IA • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA organizational strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for the activities. • NIA task force for IA organizational strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate IA strengthening **Pre-conditions** Farmers/IAs are willing to cooperate pilot and replication programs..

Table 11.3 IA Organizational Strengthening Sub-Project 1-3 : Providing Appropriate Assistance for IA's Organizational Strengthening

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through 90% of organized IAs are capable to entering contracts on IMT at end of the project.	• Income of IA members • Number of IMT contract with IAs and FIAs	• Livelihood survey of IA members • Monitoring and evaluation of IA (IA Functionality Survey)	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose • Provide IAs appropriate assistance to strengthen organizational capacities at 90% of IAs	• IA Functionality level (75 to 84%) • 75% or more water users are IA members • 75% or more IA members participate in IA activities)	• IA Functionality Survey • IDP Report	Economic situation of the Philippines and paddy price do not deteriorate seriously.
Outputs 1. NIA /Other Agencies 1. Strategies/procedures to develop the capability of the IA Officers in managing their organization and IA activities (training, intensive visits with tutorials in the strengthening phase and continuous follow-up and M&E thereafter). 2. IA training packages (organizational strengthening) based on evaluation of previous training program (content and training methodologies considering effectiveness and budget constraints) 2. IAs 1. Skills gained IA officers by IA training packages 2. Second line IA leaders (through provision of training to 50% of IA members)	1. NIA • Improved strategies, procedures, methodologies on capability development of IAs / Training packages • Trained trainers at regional and provincial level 2. IAs • 100% of IA officers and at least 50% of IA members trained	1. NIA • Reports and guideline for capability development of IAs • Training modules • Training record and trainees' evaluation 2. IAs • IA annual report • M&E of IA training (records and reports on IA training activities)	• IMT guidelines are used and effect for IA strengthening • IA officers are appreciated by majority of members
Activities 1. NIA /Other Agencies 1.1 Review/evaluate IA training programs (organizational strengthening) in terms of content, methodologies by conducting training impact evaluation and training needs analysis (TNA) in coordination with RIOs, ISOs, IAs and other agencies 1.2 Develop improved IA training packages, methodologies and other strategies in improving the capability of IA officers and members 2.1 Conduct trainers training and establish training teams at regional and provincial level using improved IA training packages 2.2 Regional/Provincial teams train IA leaders using the improved IA training packages and methodologies based on TNA 2.3 Establish support service linkage among other agencies to provide technical assistance to IAs 2. IA 1. Conduct IA meeting regularly (Board of Directors, General Assembly, Turnout Service Area Group) 2. Train at least 50% of IA members on IA basic training packages to develop second line IA leaders (by IA trainers)	**Inputs for Pilot NISs** 1. NIA • Task force for IA organizational strengthening • Consultation with IAs, RIOs, ISOs, other agencies • Budget for IDP activities • Study on organizational weakness and conduct training needs analysis • Guideline and training packages for capability development of IAs • Trainers' training (Regional/Provincial) and training packages (IA leaders/members) • Implementation, monitoring and evaluation of pilot activities 2. IA • Meeting sessions and documentation for pilot activities • Member training program by IA trainers • Counterpart fund and arrangement for training • Monitoring and evaluation of pilot activities	**Inputs for Nationwide Replication** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation 2. IA • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA organizational strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for the activities. • NIA task force for IA organizational strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate IA strengthening **Pre-conditions** Farmers/IAs are willing to cooperate pilot and replication programs..

Table 12.1 IA Operation and Maintenance Strengthening Sub-Project 2-1 : Formulating Rational O&M Policy and Plan

Target Group : Irrigation Water Users, NIA (Central, Regional, NISOs Levels) and LGU

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through more than 85% of IA members are actively participating in operation and maintenance at the end of the project (More than 80% of water users are IA member)	• Income of IA members • Percentage of IA members (more than 85%) participating in operation and maintenance activities	• Livelihood survey of IA members • IA activities record.	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose More than 75% of IAs effectively implement O&M policies and plans at end of the project.	• Written O&M policy (more than 75% of IAs) • Achievement of O&M plans	• NISO O&M performance report • IA Functionality Survey	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA 1. Written rational, equitable and practical O&M policies and plans for each NIS jointly formulated by NIA and IA with mutual agreement 2. Enforced policies for implementation of O&M plans 3. Established and operational mechanisms for resolving conflicts of interest among IAs, members and with influential people in the community . 2. IAs 1. Written rational, equitable and practical O&M policies, rules and regulations 2. Adopted integrated cropping calendar 3. Adopted water delivery and distribution (WDD) schedule 4. Coordination mechanism among IAs in O&M activities 5. Operationalized Type 1 & 2 contracts 6. Active participation and high awareness of IA members for O&M activities	1. NIA • Written O&M policies and plans with strategies on resolving conflicts (more than 90% of NISO) • LGU ordinance for support of IA activities. 2. IAs • Written O&M policies and plans	1. NIA • NISO O&M reports • LGU ordinance record • O&M policies & plan of IA • LGU ordinance record 2. IAs • IA Functionality Survey • O&M policies & plan of IAs and FIAs	• There is no calamity to damage the irrigation system seriously.
Activities 1. NIA 1. Deliberate issues in O&M policies and plans and its implementation, and refine jointly with IA through consultation with System Management Committee (SMC) in consideration of equity, rationality, and reality 2. Develop enforcement measures of implementation of O&M plans in policies, prepare specifying penalties, incentive and responsibilities in NIA's O&M policies, obtain LGU ordinance to illegal dumping and squatting to canals, adapt the Water Code for illegal water users 3. Suggest/ recommend IAs some strategies on how conflicts could be resolved and assist IAs to formulate O&M policies and plans before start of the cropping season 2. IAs 1. Conduct O&M training and workshop for IA leaders, facilitate consultation meeting with members, prepare O&M information materials, set-up info. boards 2. Request NIA to conduct orientation seminar, prepare cropping calendar 3. Conduct WDD formulation training and workshop, orient IA members, implementation of WDD schedule 4. Request NIA to convene IA coordinating council and SMC, and conduct training 5. Request NIA to conduct orientation on contract provisions, renew Type 1&2 contract, prioritize payment of Type 1 remuneration and Type 2 incentives & provide ISF collection records 6. Conduct regular information dissemination, set-up information centers/bulleting boards, & activate functions of IA public relation officers	**Inputs for Pilot 6 NISs** 1. NIA and other agencies • Task force for IA O&M strengthening • SMC and its meeting at NIS level • Budget for pilot activities • NIA-IA joint study for preparing O&M policy and plans using; master list and parcellary map (Ref. Sub-Project 1-1), layout map of irrigation, meteorological data at the site, hydrological data at intake, water requirement of crops 2. IAs • Active participation of IA members • Trainable/potential leaders • Coordination with NIA, LGUs, other agencies • Resources for food counterpart for training/workshop/meetings • Updated master list (Ref. Sub-Project 1-1) • Monitoring and evaluation of pilot activities	**Inputs for Nationwide** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation 2. IAs • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA O&M strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for IA. • NIA task force for IA organizational strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening **Pre-conditions** Farmers/IA are willing to cooperate with pilot and replication programs

Table 12.2 IA Operation and Maintenance Strengthening Sub-Project 2-2 : Implementing Effective O&M

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through more than 85% of IA members are actively participating in operation and maintenance at the end of the project (More than 80% of water users are IA member)	• Income of IA members • Percentage of IA members (more than 85%) participating in operation and maintenance activities	• Livelihood survey of IA members • IA activities record.	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose Distribute the water equitably at more than 90% of NISs	• Coverage of irrigated area in the service area (90% of target service area)	• NISO O&M performance evaluation report	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA 1. NISO staff (Water Resources Facility Technician (WRFT) has appropriate skills for operation and maintenance irrigation system. (Ref. Sub-project 2-3) 2. Irrigation water is equitably delivery to IAs by NISO 3. Irrigation system within jurisdiction of NIA is properly maintained by NISO 2. IAs 1. Effective and equitable water delivery and distribution schedule 2. Maintained irrigation canals and farm ditched 3. Repaired/rehabilitated irrigation facilities 4. Applied sanctions and penalties to members who violated. 5. Supplemental irrigation water from shallow wells in dry season 6. Resolution of conflict between up and down stream IAs on water distribution 7. Active service committees and TSA groups for O&M	1. NIA • O&M performance (plan versus implemented) • Irrigated area versus target area (90% above) • Cost for repair / rehabilitation (reduced by 20% from start of the project) 2. IAs • O&M performance (plan versus implemented) • Irrigated area versus target area (90% above) • Cost for repair / rehabilitation (reduced by 20% from start of the project) • Meeting attendance (100% of the target)	1. NIA • NISO O&M plan and records • NISO O&M performance evaluation report 2. IAs • O&M plan and records • Meeting records	• There is no conflict in IA other than water distribution.
Activities 1. NIA 1. Prepare water distribution, maintenance and monitoring plan jointly with IAs under assistance from resource persons (Ref. Sub-Project 2-1) 2. Disseminate water delivery plan and schedule to IAs (post it on bulletin boards every diversion and delivery point), implement operation plan within NIS jurisdiction, & monitor, record and evaluate water delivery to IAs 3. Implement maintenance plan within NIA jurisdiction, & conduct walk through inspection of irrigation facilities jointly with IAs after harvest and calamities including typhoon 2. IAs 1. Formulate IA WDD schedule with farmers per TSA, monitor WDD performance, request support of barangay officials in O&M policy implementation, conduct regular TSA meeting, & organize collective/simultaneous farming schedule 2. Conduct regular canal cleaning, repair damaged facilities, & construct drainage system 3. Request NIA to conduct repair/rehabilitation project, coordinate with LGUs for possible support in repair/maintenance works, & mobilize members for these works 4. Close unauthorized turnouts and impose penalties to farmers concerned, undertake regular site inspection for timely response, & coordinate LGUs for support 5. Request NIA providing shallow wells, & coordinate with LGUs for assistance 6. Conduct dialogue with all IAs on WDD, request NIA to conduct SMC meeting, & initiate contract signing among IAs 7. Reorganize and mobilize TSA leaders for discussion of WDD schedule, organize and operationalize service committee, conduct committee planning, & request necessary training to NIA	**Inputs for Pilot 6 NISs** 1. NIA • Task force for IA O&M strengthening • Budget for pilot activities • Study on present level of O&M skills at NISO and IAs • O&M guideline and training packages for capacity development (Ref. Sub-Project 2-3) • Layout map of Irrigation system 2. IAs • Active participation of IA members • Local materials for repair and maintenance • Voluntary labor for O&M • Small farm tools and equipment • Implementation, monitoring and evaluation of pilot activities	**Inputs for Nationwide** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation 2. IAs • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA O&M strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for IA. • NIA task force for IA organizational strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening **Pre-conditions** Farmers/IA are willing to cooperate with pilot and replication programs.

Table 12.3 IA Operation and Maintenance Strengthening Sub-Project 2-3 : Providing Appropriate Assistance for IA's O&M Strengthening

Target Group : Irrigation Water Users, NIA (Central, Regional, NISOs Levels) and LGU

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through more than 85% of IA members are actively participating in operation and maintenance at the end of the project (More than 80% of water users are IA member)	• Income of IA members • Percentage of IA members (more than 85%) participating in operation and maintenance activities	• Livelihood survey of IA members • IA activities record.	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose Provide IAs appropriate assistance to sustain O&M activities at more than 90% of IAs	• Achievement of O&M plans • Coverage of irrigated area in the service area (90% of target service area)	• NISO O&M performance evaluation report • IA Functionality Survey	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA /Other Agencies 1. Effectively rehabilitated irrigation facilities and structures at the system area 2. Improved / installed control structures & measuring devices and on-farm facilities 3. Enhanced skills of NISO staff for preparation and implementation of O&M policies and plans 4. IA training packages for O&M strengthening 2. IAs 1. Enhanced skills of IA board and technical members (TSAG leaders) for preparation and implementation of O&M policies and plans within jurisdiction of IA 2. Procedure for transfer of technology to IA members 3. M&E of post training activities	1. NIA • Functionality of irrigation facilities (water discharges of canal, etc.) • Written O&M policies and plans • Trained trainers at regional and provincial level 2. IAs • O&M performance (plan versus implemented) • 100% of IA officers and at least 50% of IA members trained	1. NIA • NISO O&M performance evaluation report • Training modules • Training record and trainees' evaluation 2. IAs • IA O&M record • M&E of IA training (records and reports on IA training activities)	There is no conflict in IA other than water distribution.
Activities 1. NIA /Other Agencies 1. Develop efficient procedure for identification and prioritization of rehabilitation works by participatory approach from identification of rehabilitation (establish and conduct walk through inspection program jointly with IA members for identification of damages on irrigation system), & implement rehabilitation works with IAs' participation 2. Rehabilitate / install control structures and measuring devices at intake, head gates and begging point of each IAs jurisdiction, rehabilitate / modify Turn-outs (TOs) to proper size of pipe diameter for land preparation and provide gates for normal irrigation and fully closed. 3. Provide skilled training to NISO O&M staff 4. Develop improved IA training packages on O&M, methodologies and other strategies, conduct trainers training and establish training teams at regional and provincial level, establish support service linkage among other agencies to provide technical assistance to IAs, & monitor, evaluate, and follow-up IA activities	**Inputs for Pilot 6 NISs** 1. NIA • Task force for IA O&M strengthening • Budget for O&M strengthening including rehabilitation • Study on rehabilitation plans and works jointly with NIA-IAs (hydrological data, map, engineering report, cost estimate) • Guideline and training packages for IA O&M strengthening (including scientific irrigation farming) • Trainers training (Regional/provincial) and training packages (IA leaders and members) • Implementation, monitoring and evaluation of pilot activities	**Inputs for Nationwide** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation	• NIA can arrange necessary fund for IA. • NIA task force for IA organizational strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening
2. IAs 1. Regularly conduct meetings for enhancing skills and participate actively to the training program 2. Train at least 50% of IA members on IA basic training packages to develop second line IA leaders (by IA trainers) 3. Record, monitor and evaluate training activities	2. IAs • Meeting sessions and documentation for pilot activities • Member training program by IA trainers • Monitoring and evaluation of pilot activities	2. IAs • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA O&M strengthening • Monitoring and evaluation	**Pre-conditions** Farmers/IA are willing to cooperate with pilot and replication programs.

Table 13.1 IA Financial Strengthening Sub-Project 3-1 : NIA's Financial Management Strengthening

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through 90% of organized IAs financially viable at end of the project.	• Income of IA members • Current ratio (Above 1.00) • Viability index (Above 1.00) • Certification of external auditing	• Livelihood survey of IA members • IA balance sheet • External auditing report	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose Achieve NIA's ISF collection at 75 - 100% from IAs, and NIA's prompt payment of ISF share to IAs at end of project.	Efficiency and timing of ISF collection by NIS (collected versus irrigated, by cropping season)	Monitoring and evaluation of ISF collection by NIS	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA 1. Improved ISF collection policies, strategies and procedural system under respective contract (Type I, II, I&II, JSM, etc.) 2. Timely payment of ISF share to IAs. 2. IAs 1. Improved ISF collection policies, strategies and procedural system (Ref. Sub-Project 3-2) 2. Timely payment of ISF to NIA (Ref. Sub-Project 3-2)	1. NIA • Applied and continued cases of revised system at NISO level 2. IAs • Applied and continued cases of revised system at IA level	1. NIA • Administrative Order on revised ISF collection 2. IAs • Monitoring and evaluation reports on system application	• ISF collection policies, strategies and procedural system are effectively implemented. • IA's support activities for members. are effect to ISF collection increase.
Activities 1. NIA 1.1 Develop and implement appropriate collection policies, strategies, procedural system based on social status of users, tenure condition, dialogue with IAs, DA, DAR, DILG, LRA, etc. 1.2 Implement strictly existing Annotation Program 1.3 Establish institutional arrangement between LRA and NIA to ensure that land titles are not transferred without NIA clearance 1.4 Design and implement mass media campaign to promote awareness of NIA collection policies 1.5 Study and modify existing procedures of monthly releases of SA requirements to facilitate timely allocation and processing of payments of IA remuneration /collection incentives (i.e. lump sum releases) 2.1 Study and restore Seed Fund for payment of IA share and incentives 2.2 Reconcile management records (IFR, ML, PM) 2.3 Study and restore /utilize software on computerized billing with incentives/sanctions for users of computerized billing system, cross visits of NIS staff among regions and OJT on SMT, FMT, BLDC, etc. (Ref. Sub-Project 3-3) 2. IA 1. Prepare appropriate collection policies, strategies, procedural system based on social status of members, tenure condition, etc. and reflect to by-laws (Ref. Sub-Project 3-2) 2. Implement strictly IAs' rules and regulations, and timely ISF payment (Ref. Sub-Project 3-2)	**Inputs for Pilot NISs** 1. NIA • Task force for ISF collection increase at NIA • Committee with IAs, DA, DA, DAR, DILG/LGUs, LRA on ISF collection • Skill training, and hard and software for computerized billing system • Monitoring and evaluation of pilot activities 2. IA • Working teams at concerned NISOs/regional offices • NIA-IA joint study and implementation for ISF collection increase • Monitoring and evaluation of pilot activities	**Inputs for Nationwide Replication** 1. NIA • Nationwide replication program • Fund arrangement • Monitoring and evaluation 2. IA • NIA-IA working teams at regional level • NIA-IA joint study and implementation for ISF collection increase • Monitoring and evaluation	• NIA can arrange necessary fund for the activities. • NIA task force for increase of ISF collection delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening **Pre-conditions** Farmers/IAs are willing to cooperate with pilot and replication programs

Note : LRA (Land Registration Authority) SA (Sub-allotment advice) IFR (Irrigation fee register) ML (master list) PM (parcellary maps)
SMT (system management training) FMT (financial management training) BLDC (basic leadership development course)

Table 13.2 IA Financial Strengthening Sub-Project 3-2 : Collection Enhancement of IA's Dues and ISF

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through 90% of organized IAs financially viable at end of the project.	• Income of IA members • Current ratio (Above 1.00) • Viability index (Above 1.00) • Certification of external auditing	• Livelihood survey of IA members • IA financial statement • External auditing report	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose Achieve IAs' ISF collection at 75 - 100% and IA's due collection at 100% from all members at end of project.	• Viability index (Above 1.00) • Efficiency and timing of ISF collection by IA (collected versus irrigated, by cropping season) • Collection efficiency of IA dues (coverage of water users, amount)	• IA financial statement • Monitoring and evaluation of collection of dues and ISF by IA	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA 1. Timely payment of ISF share, remuneration and incentives to IA (Ref. Sub-Project 3-1) 2. Customer service system for financial audit, micro-financing, agricultural technologies, post-harvest and marketing, and other livelihood program at IA level (Ref. Sub-Project 3-3) 2. IAs 1. Defined written strategies, policies and procedures for IA dues and ISF collection 2. Trained IA officers and leaders in financial management and book keeping 3. System on financial recording, auditing and budget planning 4. Fund raising and income generating policies and programs 5. Members' capital build-up scheme 6. Livelihood assistance to members (credit, micro-enterprise, income generating project, health insurance) 7. Renewed Type i and 2 contracts 8. Operation of IA assembling market	1. NIA • Applied and continued cases of revised system at NISO level • Cases of customer services on financial management and others (means and IA evaluation) 2. IAs • Applied and continued cases of revised system at IA level • Cases implementing micro-financing, technical dissemination, post-harvest and marketing, livelihood programs, etc.	1. NIA • Administrative Order on revised ISF collection • Monitoring and evaluation reports on system application and customer services 2. IAs • Monitoring and evaluation reports on system application and customer services and new IA activities.	• ISF collection policies, strategies and procedural system are effectively implemented. • IA's activities on micro-financing, technical dissemination, post-harvest and marketing, livelihood programs, etc. are effect to ISF collection increase.
Activities 1. NIA 1. Provide IAs technical support and assist ISF collection 2.1 Organize financial auditing system for IA 2.2 Collaborate with other agencies to formulate and implement customer service system 2. IA 1. Conduct planning workshop on collection of ISF and membership dues, implement and monitor collection activities, & impose sanctions to non payers 2. Conduct training on financial management & identify and develop potential IA leaders 3. Appoint bookkeepers and revitalize auditing, consolidate all financial records, & develop policies, systems and procedures (PSP) 4. Prepare fund raising and income generating plans, & implement and monitor activities of IAs 5. Formulate CBU scheme, & provide services and incentives to members 6. Formulate livelihood projects, identify and evaluate potential IA members, forecast needed resources and attend training, & request and negotiate with other line agencies for technical and financial assistance 7. Negotiate NIA for renewal of IAs type 1 and type 2 contracts, prepare and submit documents to NIA, install systems and procedures for implementation 8. Prepare a plan of action for IA assembling market program, conduct market research and marketing planning workshop, conduct training on agri-business to IA leaders, & install market center	**Inputs for Pilot NISs** 1. NIA • Fund for training and technical assistance • Study on financial auditing and appropriate customer service system • Monitoring and evaluation of pilot activities 2. IA • Attendance of IA officers and leaders during workshops and training • Local counterpart fund or donations for IA projects, training and O&M activities • Financial assistance for IA livelihood projects from other line agencies • Members patronage to IA livelihood projects and business • Members' capital-build-up and savings • Monitoring and audit report of IA financial performance • IA task force per TSA for ISF and membership dues collection • Participation of IA wives for IA dues collection • Voluntary works of IA officers, leaders and members in the implementation of income generating projects	**Inputs for Nationwide Replication** 1. NIA • Nationwide replication program • Fund arrangement • Monitoring and evaluation 2. IA • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA's financial strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for the activities. • NIA task force for increase of ISF collection delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening **Pre-conditions** Farmers/IAs are willing to cooperate with pilot and replication programs

Table 13.3 IA Financial Strengthening Sub-Project 3-3 : Assistance for IA's Capacity Building on Financial Management and Other Activities

Target Group : Irrigation Water Users and NIA (Central, Regional, NISOs Levels)

Project Term : Pilot for 4 years and , Nationwide for 10 years

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Improvement of livelihood of IA farmer members through 90% of organized IAs financially viable at end of the project.	• Income of IA members • Current ratio (Above 1.00) • Viability index (Above 1.00) • Certification of external auditing	• Livelihood survey of IA members • IA financial statement • External auditing report	Priority policies and measures for NIS O&M are not drastically changed.
Project Purpose Provide IAs appropriate assistance to strengthen financial capacities at 90% of IAs	• Viability index (Above 1.00) • Efficiency and timing of ISF collection by IA (collected versus irrigated, by cropping season) • Collection efficiency of IA dues (coverage of water users, amount)	• IA financial statement • Monitoring and evaluation of collection of dues and ISF by IA	Situations of the Philippines economy and paddy price do not deteriorate seriously.
Outputs 1. NIA /Other Agencies 1. Strategies/procedures to develop the capability of the IA Officers in their financial management (training, intensive visits with tutorials in the strengthening phase and continuous follow-up and M&E thereafter). 2. IA training packages (financial management) based on evaluation of previous training program (content and training methodologies considering effectiveness and budget constraints) 3. Organization and system for IA financial audit 4. Committee on technical and financial assistance for IA strengthening among other agencies (national, regional level) 2. IAs 1. Skills gained IA officers by IA training packages 2. Second line IA leaders (through provision of training to 50% of IA members) 3. M&E of post training activities	1. NIA • Improved strategies, procedures, methodologies on capability development of IAs / Training packages • Trained trainers at regional and provincial level 2. IAs • 100% of IA officers and at least 50% of IA members trained • Records and reports on IA training activities • M&E of IA training	1. NIA • Reports and guideline for capability development of IAs • Training modules • Training record and trainees' evaluation 2. IAs • IA annual report • IA's records and reports	• ISF collection policies, strategies and procedural system are effectively implemented. • IA's activities on micro-financing, technical dissemination, post-harvest and marketing, livelihood programs, etc. are effect to ISF collection increase.
Activities 1. NIA /Other Agencies 1/2 Review/evaluate IA training programs (financial management) in terms of content, methodologies by conducting training impact evaluation and training needs analysis (TNA) in coordination with RIOs, ISOs, IAs and other agencies 1/2 Develop improved IA training packages, methodologies and other strategies in improving the capability of IA officers and members 1/2 Conduct trainers training and establish training teams at regional and provincial level using improved IA training packages 1/2 Regional/Provincial teams train IA leaders using the improved IA training packages and methodologies based on TNA 3. Study IA auditing practices and organize IA financial auditing system 4. Establish support service linkage among other agencies to provide technical and financial assistance to IAs 2. IA 1/2 Train at least 50% of IA members on IA basic training packages to develop second line IA leaders (by IA trainers) 3. Record, monitor and evaluate training activities	**Inputs for Pilot NISs** 1. NIA • Task force for IA financial management strengthening with other agencies • Market information network among IAs (NIS/CIS), traders, LGUs, etc. • Budget for IDP activities • Guideline and training packages for IA's financial capability development • Trainers' training (NIA) and training packages (IA leaders/members) • Post-harvest technician for IAs' marketing activities • Fund for IA's other service activities (livelihood, post-harvest facilities) • Monitoring and evaluation of pilot activities 2. IA • Required meeting sessions and documentation for pilot activities • Member training program by IA trainers • Monitoring and evaluation of pilot activities	**Inputs for Nationwide Replication** 1. NIA • Nationwide replication program • Fund arrangement • Training program for NIA-IA • Monitoring and evaluation 2. IA • NIA-IA working teams at regional level • NIA-IA joint study and implementation for IA's financial strengthening • Monitoring and evaluation	• NIA can arrange necessary fund for the activities. • NIA task force for IA financial management strengthening delivers expected outcome • Concerned government organizations and NGOs cooperate with IA strengthening **Pre-conditions** Farmers/IAs are willing to cooperate with pilot and replication programs

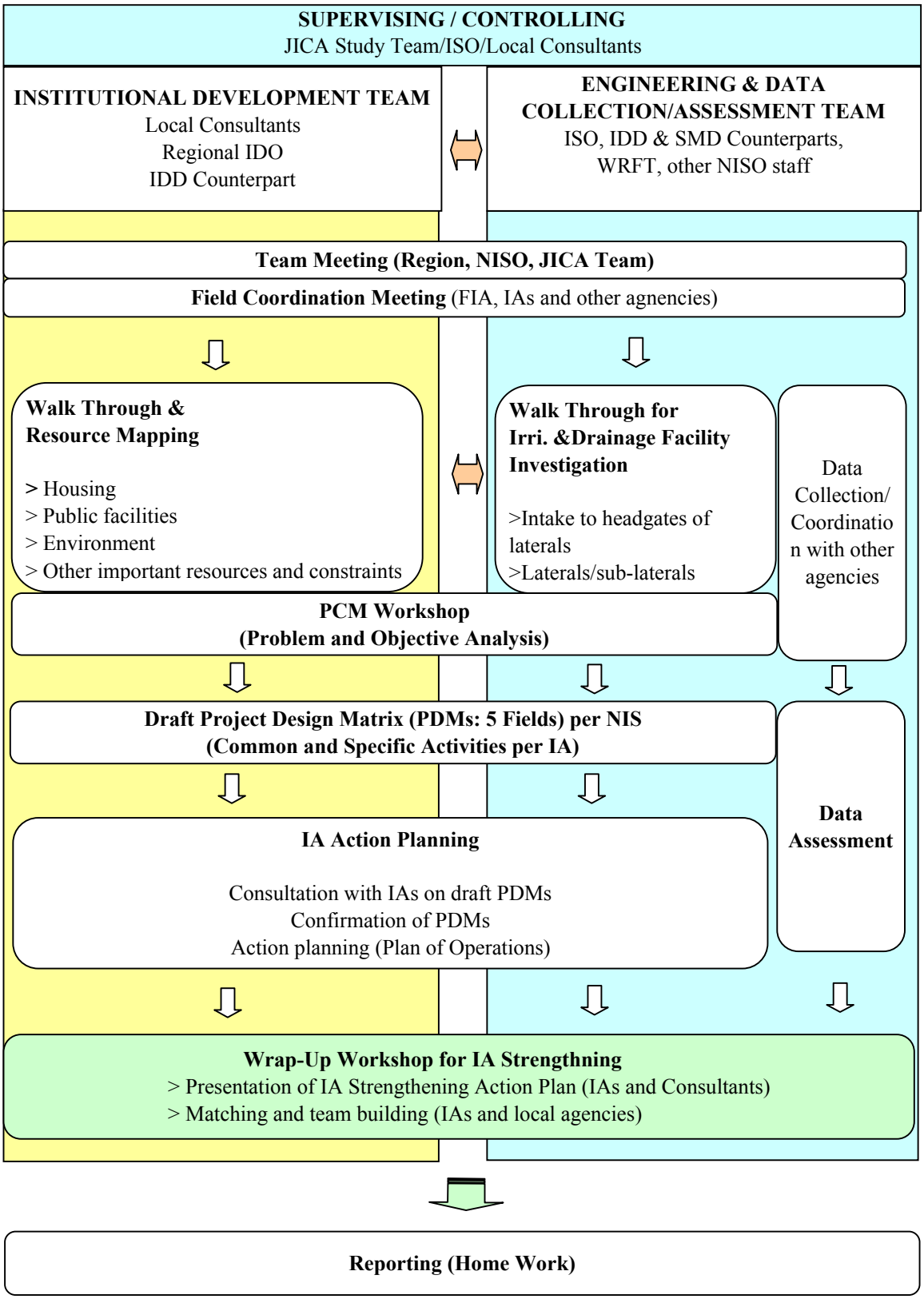
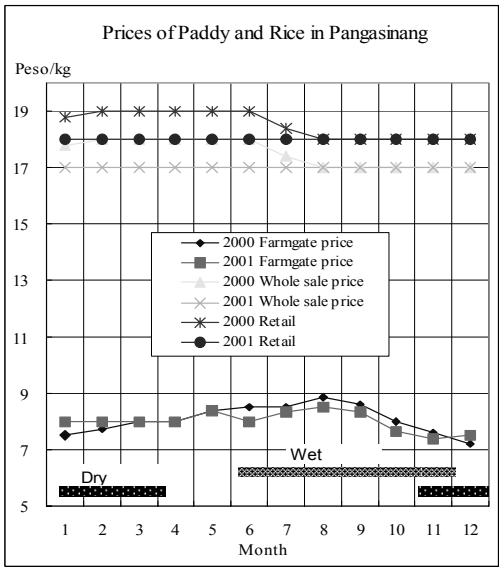
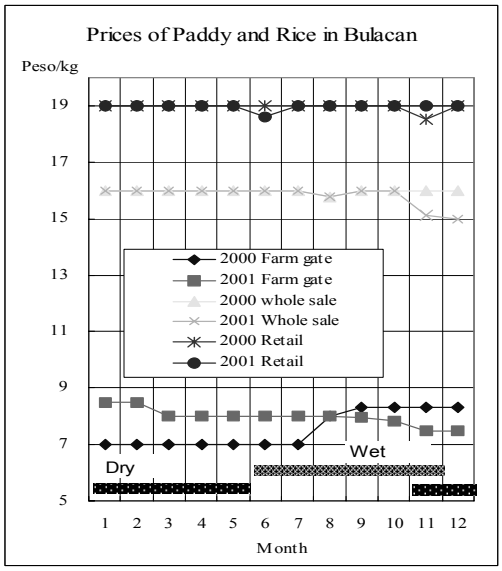
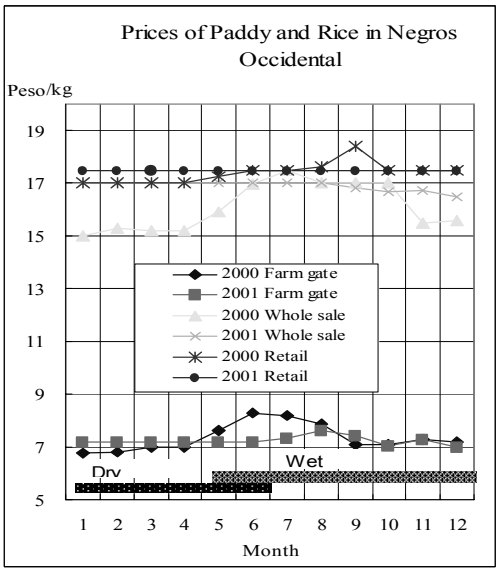
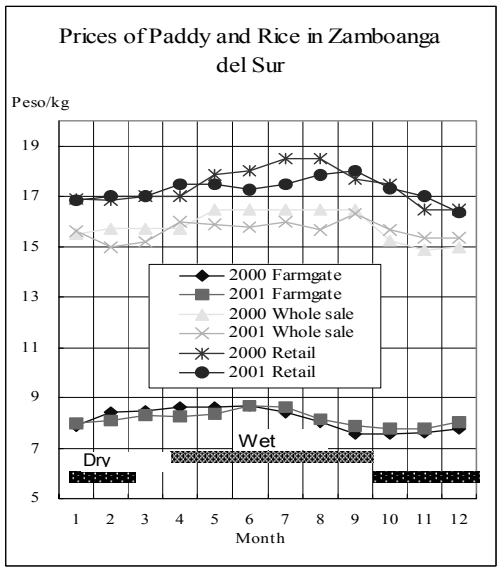


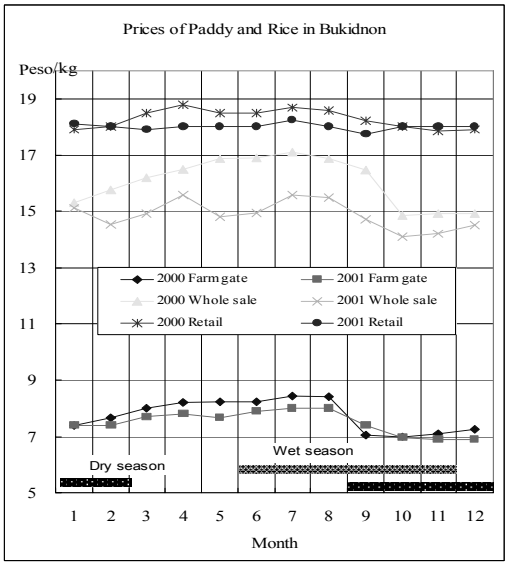
Figure 1.1 Composition of PRA Team and Survey Activities











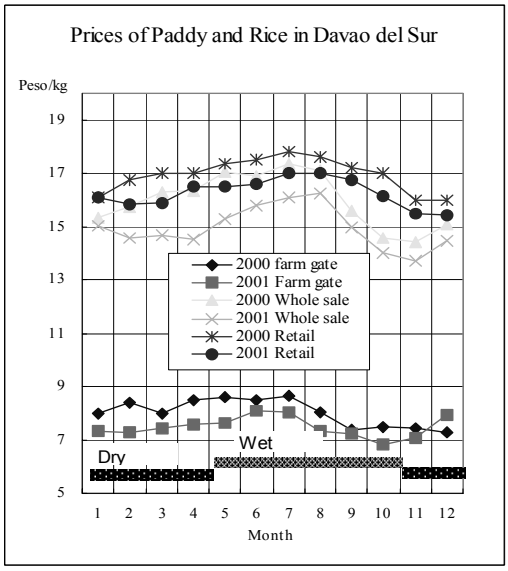


Figure 2.1 Prices of Paddy and Rice

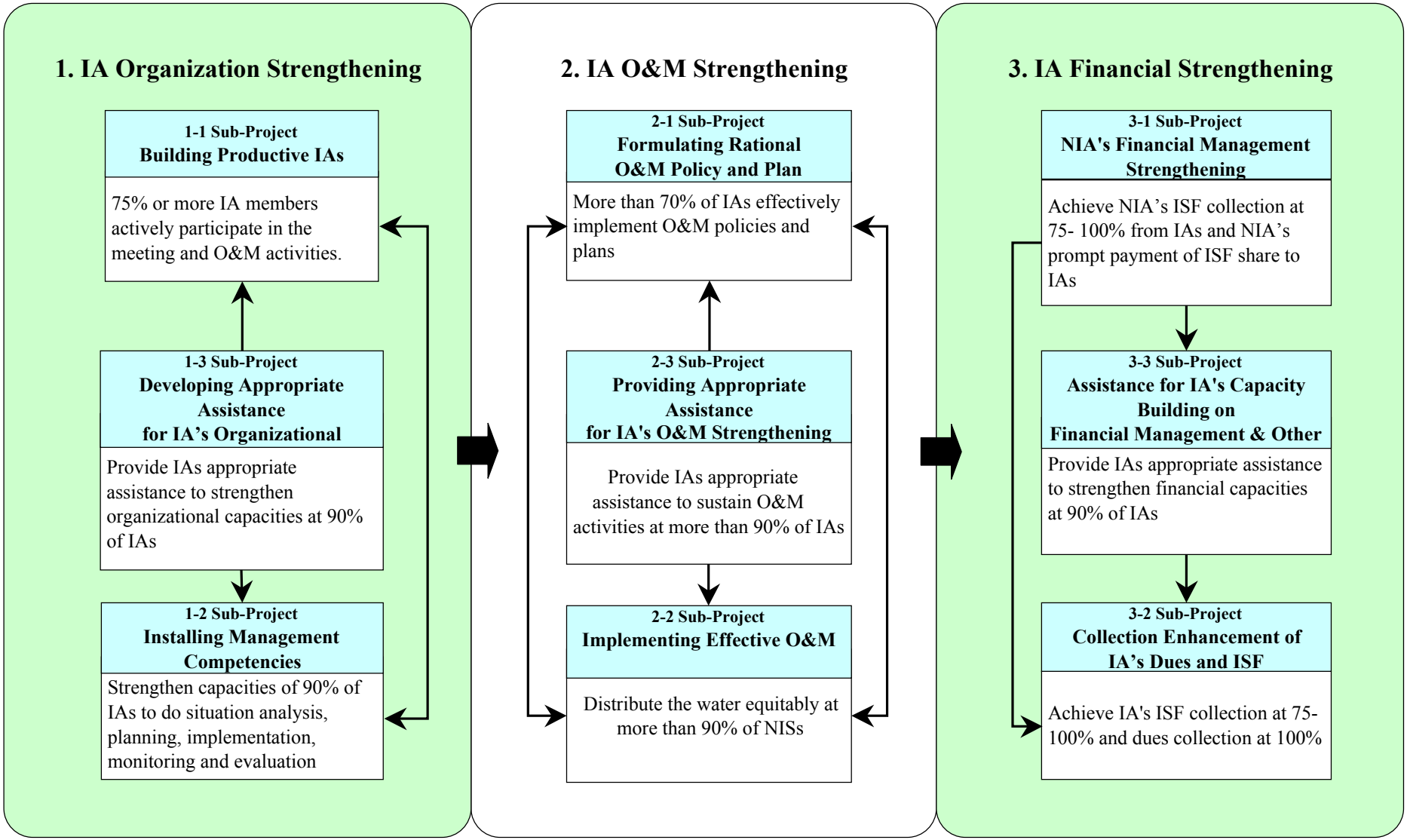
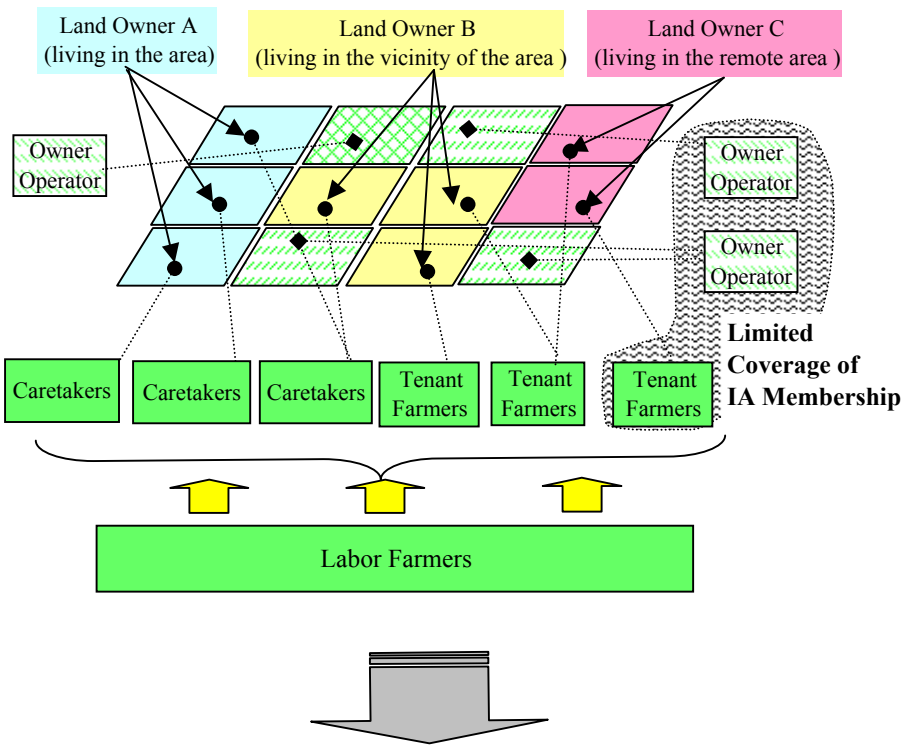


Figure 10.1 Linkage of Sub-Projects for IA Strengthening



Farmland Trust Management by IA

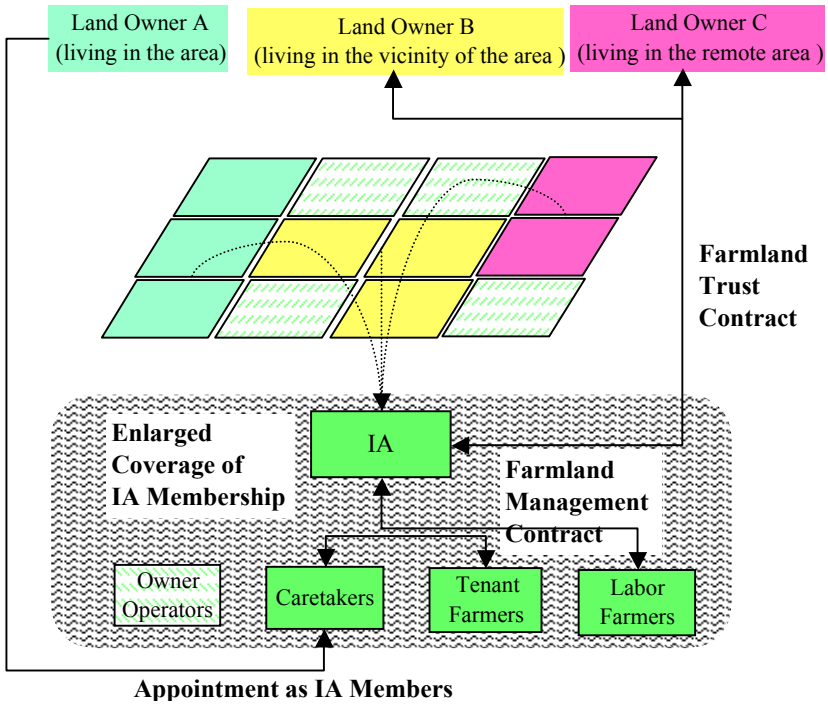


Figure 11.1 IA Membership Enlargement through Farmland Trust Management by IA

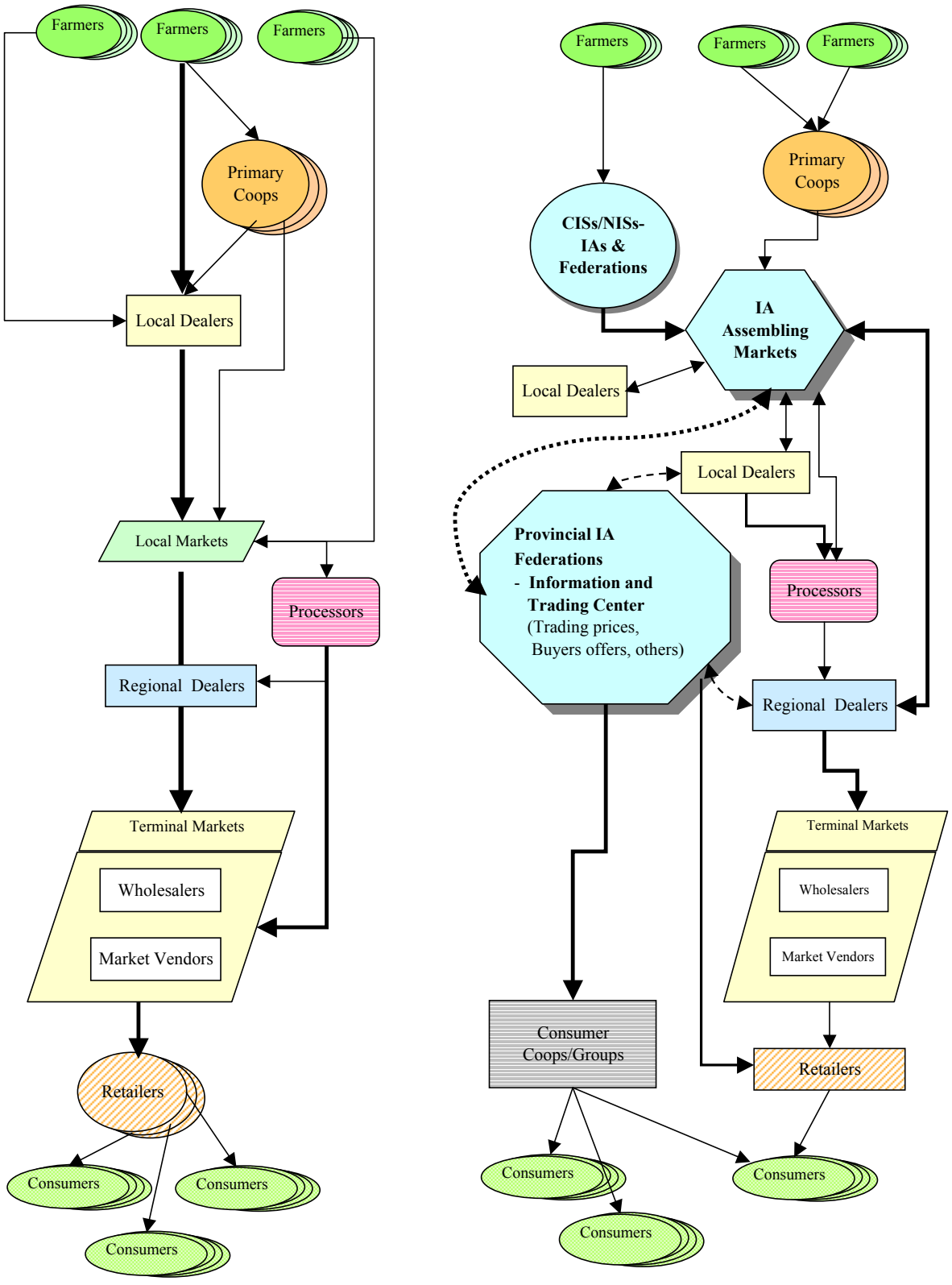


Figure 13.1 Framework for IA-Based Market Development

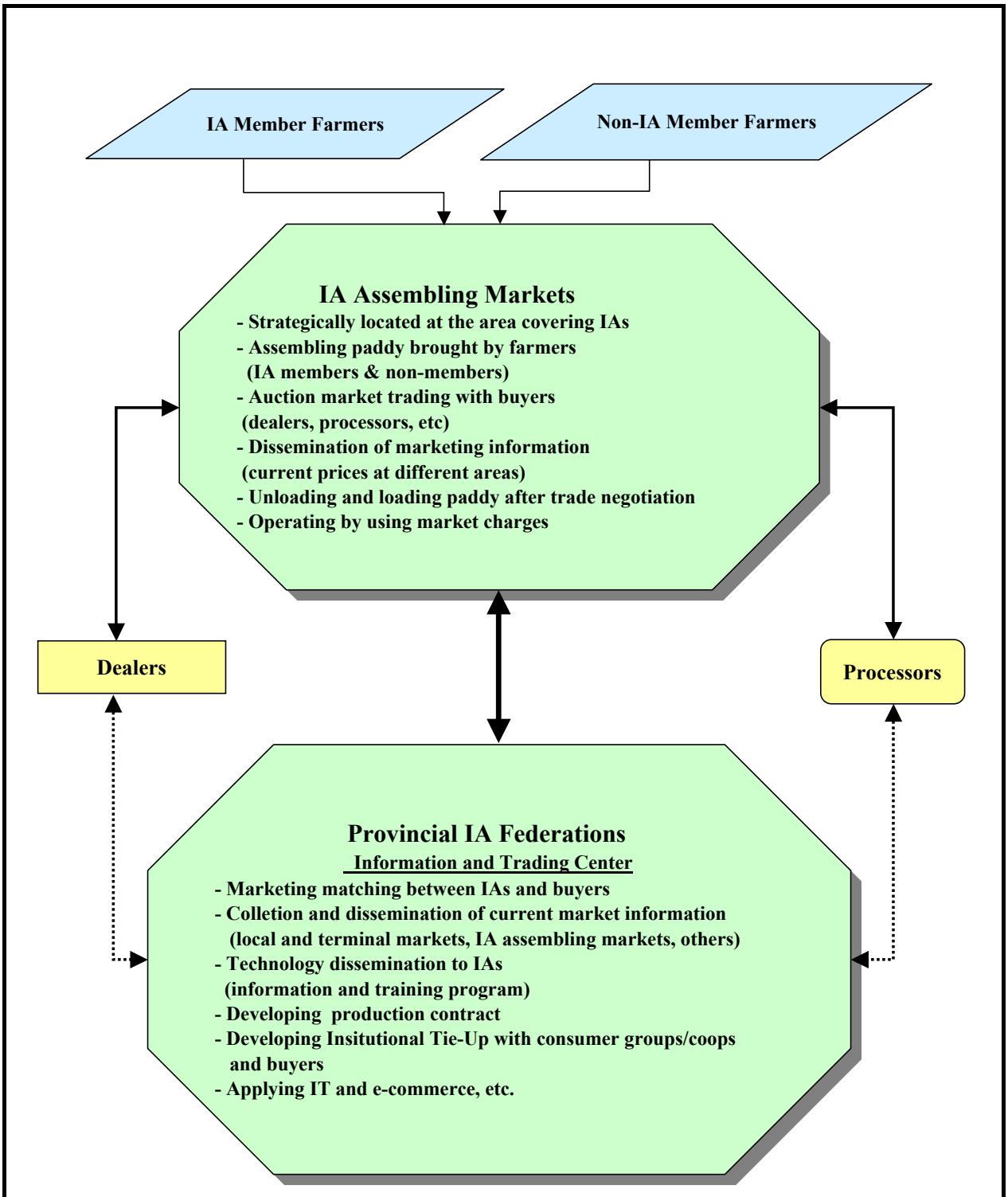


Figure 13.2 Marketing and Trading System at IA Assembling Markets and Provincial Information and Trading Center

Figure14.1 Implementation Schedule for Action Plans for IA Strengthening (1/4)

1. Pilot Activities for IA Organizational Strengthening (Sub-Project 1-1, 1-2 and 1-3)

Outputs	Activities	Pilot Activities for IA Strengthening
		2002 (1) / 2003 (2) / 2004 (3) / 2005 (4)
Preparatory Works (Assignment of NIA Task Force and Working Teams, Financial Arrangement)		
NIA-1 Registered and Updated master list	NIA-1.1 Conduct complete enumeration of potential members.	
	NIA-1.2 Update jointly (NIA-IA) the master list indicating tenure status of each member	
NIA-2 Practical training schemes and organizational strategies	NIA-2.1 Assess functional structures of IAs and develop participatory and community-based organizational approaches.	
	NIA-2.2 Conduct training impact evaluation and training needs analysis (TNA) in coordination with RIOs, NISOs, IAs and other agencies	
	NIA-2.3 Develop improved IA training packages, and conduct trainers' training,	
	NIA-2.4 Establish training teams at the regional and provincial levels to train leaders using improved methodologies	
	NIA-2.5 Establish coordination with other agencies to provide technical assistance to IAs	
NIA-3 Unified IMT policy	NIA-3.1 Review jointly (NIA-IA) the existing IMT contracts and draw up a comprehensive policy	
NIA-4 Active System Management Committee (SMC)	NIA-4.1 Establish SMCs in all NISs	
IA-1 Active membership	IA-1.1 Conduct BOD meeting to finalize membership criteria and profile of potential members	
	IA-1.2 Request NIA/DAR to get the data on all potential water users/actual tillers	
	IA-1.3 Prepare membership recruitment plan through the conduct of pre-membership seminar	
	IA-1.4 Finalize new master list and submit application to SEC	
IA-2 Improved leadership quality and functions	IA-2.1 Prepare agenda and conduct regular meetings	
	IA-2.2 Establish proper documentation, provide copies of reports, and facilitate resolution of issues with participation	
	IA-2.3 Identify potential leaders and implement regular elections	
	IA-2.4 Conduct regular review and amendment of by-laws and notify members	
	IA-2.5 Revive and activate all working committees to plan and execute programs and policies	
IA-3 Enhanced Skills	IA-3.1 Deputize leaders to attend training programs and use them as trainers to train at least 50% of members using improved training modules	
IA-4 Installed of systems and procedures	IA-4.1 Install logbook system	
	IA-4.2 Collect, review and consolidate records	
	IA-4.3 Conduct proper turn-over of documents	
	IA-4.4 Prepare records of discussion	
	IA-4.5 Update records	
IA-5 Established of essential coordination mechanism	IA-5.1 Conduct regular dialogues with LGUs and other support institutions	
	IA-5.2 Organize and plan the establishment of councils	
	IA-5.3 Conduct election of council officers	
	IA-5.4 Study status of provincial federation	
	IA-5.5 Execute an strengthening plan for provincial federation	
IA-6 Re-organized TSA	IA-6.1 Study service area and define cost-effective and manageable TSA	
	IA-6.2 Consolidate TSA based on new hydrological boundaries	
IA-7 IA Center Facility	IA-7.1 Arrange lands and building for IA center	
	IA-7.2 Request for funding	

Note: : JICA Study Team : NIA (Other Agencies) : IAs

Figure 14.1 Implementation Schedule for Action Plans for IA Strengthening (2/4)

2. Pilot Activities for IA O&M Strengthening (Sub-Project 2-1, 2-2 and 2-3)

Outputs	Activities	Pilot Activities for IA Strengthening			
		2002	2003	2004	2005
		1	2	3	4
NIA-1 Written and practical O and M policies	NIA-1.1 Deliberate issues affecting implementation of O&M policies and plans				
	NIA-1.2 Settle the issues jointly with IA through consultation with SMC considering equity and practicality in the use of water				
	NIA-1.3 Develop enforcement measures specifying penalties, incentive and responsibilities in NIA				
	NIA-1.4 Obtain LGU ordinance to prevent illegal dumping and squatting along canals				
	NIA-1.5 Adapt the Water Code for illegal water users				
	NIA-1.6 Assist IAs to formulate O&M policies and plans before start of cropping season				
NIA-2 Established Coordination System	NIA-2.1 Suggest and recommend strategies on how conflicts could be resolved				
	NIA-2.2 Request TSAG leaders to coordinate with SMC and LGUs to settle conflicts amicably				
NIA-3 Training Packages	NIA-3.1 Develop improved IA training packages on O&M methodologies and other strategies				
	NIA-3.2 Establish training teams at regional and provincial levels				
	NIA-3.3 Conduct trainers training				
	NIA-3.4 Provide skills training to NISO's O&M staff				
	NIA-3.5 Establish liaison with other public institutions to provide technical assistance to IAs				
	NIA-3.6 Monitor and evaluate progress of training				
NIA-4 Strict Enforcement of O&M policies and plans	NIA-4.1 Prepare water distribution, and monitoring plan jointly with IAs under assistance from resource persons				
	NIA-4.2 Disseminate water delivery plan and schedule to IAs at accessible places (bulletin boards at every diversion and delivery point)				
	NIA-4.3 Implement operational plan within NIS jurisdiction				
	NIA-4.4 Monitor, record and evaluate water delivery				
	NIA-4.5 Conduct walk through inspection of irrigation facilities jointly with IAs after harvest and calamity				
	NIA-4.6 Implement maintenance plan within NIA jurisdiction				
	NIA-4.7 Develop efficient procedures for identification and prioritization of rehabilitation works through participatory approach				
	NIA-4.8 Rehabilitate and install control structures and measuring devices at intake and head gates				
	NIA-4.9 Modify turn-outs to proper size of pipe diameter for land preparation and provide gates for normal irrigation				
IA-1 Written, practical and rational O&M policies and plans	IA-1.1 Conduct O&M orientation workshop for leaders				
	IA-1.2 Facilitate consultation meeting with members				
	IA-1.3 Prepare O&M information materials				
	IA-1.4 Set-up information boards for notification/ratification of O&M policies				
	IA-1.5 Jointly prepare with members the O&M plans and ratify accordingly through participatory process				
IA-2 Established coordination system	IA-2.1 Request NIA to regularly convene the SMCs				
	IA-2.2 Conduct regular dialogues with members				
	IA-2.3 Activate service committees and clothe them with powers to resolve conflicts				
	IA-2.4 Reorganize and mobilize TSAG leaders for intensive information dissemination				
IA-3 Training Package	IA-3.1 Request NIA to conduct live-in and role modeling training to leaders and members				
	IA-3.2 Request NIA to conduct regular orientation on the preparation of O&M plans				
	IA-3.3 Conduct training to at least 50% of members				
	IA-3.4 Develop a methodology for transferring skills to members				
IA-4 Strict Enforcement of O&M plans and policies	IA-4.1 Prepare jointly with NIA the cropping calendar and implement				
	IA-4.2 Prepare WDD jointly with NIA and implement				
	IA-4.3 Jointly conduct with NIA information dissemination programs about the cropping calendar and WDD				
	IA-4.4 Request NIA to conduct orientation on contract provisions				
	IA-4.5 Consult with members about incentive structure				
	IA-4.6 Finalize Type I and II contracts and renew with NIA				
	IA-4.7 Activate service committees to disseminate and enforce penalties				
	IA-4.8 Conduct regular cleaning of canals and farm ditches				
	IA-4.9 Request NIA to repair and rehabilitate damaged irrigation systems				
	IA-4.10 Mobilize members for regular maintenance of canals and farm ditches				
	IA-4.11 Close illegal turnouts and other illegal activities and enforce corresponding penalties				
	IA-4.12 Request NIA to provide shallow tube wells at cost				
	IA-4.13 Coordinate with LGU for additional funding support				

Note: : JICA Study Team : NIA (Other Agencies) : IAs

Figure14.1 Implementation Schedule for Action Plans for IA Strengthening (3/4)

3. Pilot Activities for IA Financial Strengthening (Sub-Project 3-1, 3-2 and 3-3)

Outputs	Activities	Pilot Activities for IA Strengthening			
		2002	2003	2004	2005
		1	2	3	4
NIA-1 Improved ISF collection policies and procedures	NIA-1.1 Review and amend, if necessary, existing ISF incentives and exemptions				
	NIA-1.2 Review and amend, if necessary, existing ISF rates using appropriate water pricing strategy				
	NIA-1.3 Develop and implement cost-effective collection policies and strategies				
	NIA-1.4 Conduct dialogues with IAs, DA, DAR, DILG, and other agencies on legal and procedural system				
	NIA-1.5 Establish institutional arrangement between LRA and NIA to prevent transfer of irrigated lands with ISF arrears				
	NIA-1.6 Design and implement mass media campaign on ISF collection to instill awareness among NIA employees				
	NIA-1.7 Study and modify existing procedures of monthly releases of sub-allotment advice requirements to facilitate timely allocation and processing of payments of IA remuneration and collection incentives				
	NIA-1.8 Study the generation of seed fund out of ISF shares to improve the liquidity of IAs				
	NIA-1.9 Reconcile and update IFRs, master list and parcellary maps to increase billing and collected areas				
NIA-2 Training Package	NIA-2.1 Review through TNA all existing training on financial matters and design a simple and integrated financial management training for leaders and members				
	NIA-2.2 Establish a training core team on financial management system at the region and provincial levels to conduct hands-on and coaching jobs to leaders and members				
	NIA-2.3 Study and restore computerized billing system and institute a crash training for adoption of the computerized system				
	NIA-2.4 Institute IA financial auditing system and implement a basic course on audit				
	NIA-2.5 Collaborate and establish liaison with other agencies to get their technical and financial assistance for IAs				
	NIA-2.6 Conduct trainers training and establish training teams at regional and provincial level				
IA-1 Internal ISF policies and procedures	IA-1.1 Conduct dialogues and planning sessions with members and solicit ISF and members' dues policy proposals				
	IA-1.2 Prepare the policies and implementing rules and guidelines and circulate for ratification				
	IA-1.3 Implement the policies through intensive communications program				
	IA-1.4 Monitor and evaluate performance				
IA-2 Training Package	IA-2.1 Coordinate with NIA and present a training proposal				
	IA-2.2 Design an appropriate financial management training using live-in and role modeling scheme				
	IA-2.3 Conduct the training to at least 50% of members on financial management, and develop second line IA leaders (by IA trainers)				
IA-3 Systems and Procedures	IA-3.1 Appoint bookkeepers and activate financial record keeping and audit				
	IA-3.2 Consolidate all financial records, and develop procedural system for transactions and control				
IA-4 Market-related and income projects	IA-4.1 Negotiate with NIA for renewal of Type I and II contract				
	IA-4.2 Prepare and submit documents to NIA, and install systems and procedures for implementation				
	IA-4.3 Prepare fund raising and income generating policies and proposal				
	IA-4.4 Discuss in assembly meeting and ratify for implementation				
	IA-4.5 Prepare specific project proposal (through assistance from NIA and other agencies)				
	IA-4.6 Solicit the funding requirement and counterpart fund from members				
	IA-4.7 Implement and monitor performance				
	IA-4.8 Prepare a plan of action for assembly marketing program				
	IA-4.9 Conduct market research and market planning workshop,				
	IA-4.10 Conduct training to leaders on operations (bulk volume transport and deposit, invitations of potential buyers, pricing, etc.				
	IA-4.11 Install, the market center				

Note: : JICA Study Team : NIA (Other Agencies) : IAs

Figure 14.1 Implementation Schedule for Framework Action Plan for IA Strengthening (4/4)

5. Nationwide Replication for IA Strengthening