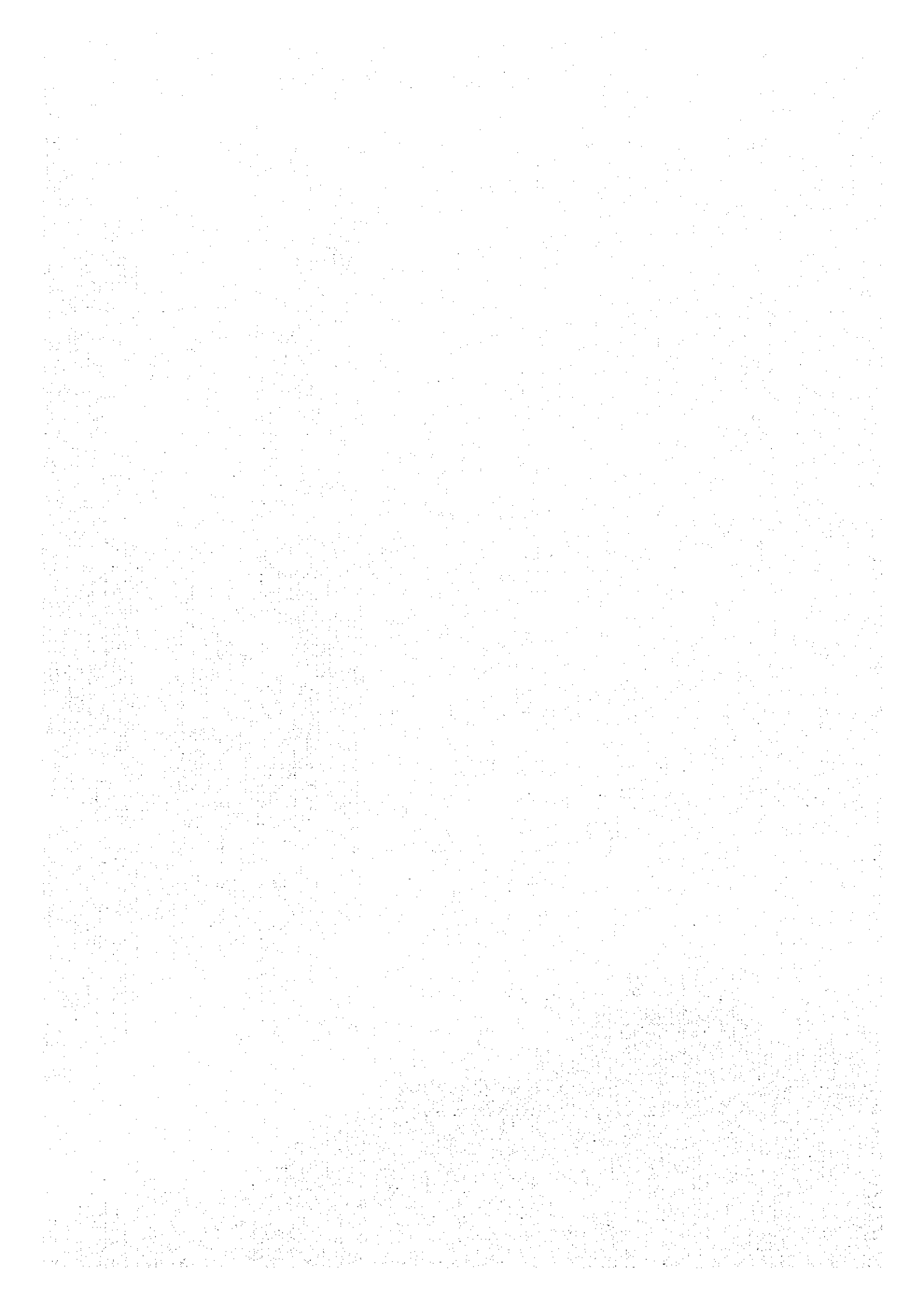


**THE FEASIBILITY STUDY ON
THE WESTERN LEGAZPI IRRIGATION AND
RURAL DEVELOPMENT PROJECT IN THE PHILIPPINES**

ANNEX G
***AGRICULTURAL SUPPORT SERVICES
AND
INSTITUTIONS***



ANNEX G

AGRICULTURAL SUPPORT SERVICES AND INSTITUTIONS

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1. INTRODUCTION

The report on agricultural support services and institutions covers the following areas: (a) agricultural research and extension; (b) progress of the CARP; (c) farmers organization or cooperatives; and agricultural credit. The proposed organizational plan for executing the project, including the results of the interview on farmers' concerns and public consultations are also discussed in this Annex. The assessment on these topics was made by collecting information from concerned government institutions, including interview of influential people in the Study area. The major objectives of this report are: (a) to determine the current issues and problems; (b) to determine the availability and adequacy of support interventions; (c) to formulate basic ideas and perspective for the support services of the WLIRD; and (d) to design and identify the appropriate organizational structure and institutions to implement the project.

2. AGRICULTURAL RESEARCH AND EXTENSION

2.1 Administrative Structure: Government Institutions

Agricultural extension in the Study area is rather unique in view of the dominance of two major export commodities being largely grown, namely: coconut and abaca. Even with the effectivity of the local government code (devolution), specialized agencies are doing their extension activities apart from the devolved functions of the DA region 5 office (Ref. Table G.2.1 and Fig. G.2.1).

2.1.1 Region 5

(1) Department of Agriculture

The region 5 office of the DA has become the RFU by virtue of the devolution. Its functions cover mainly on the provision of technical assistance; provision of quality seeds and breeder stocks; crop protection and quarantine services; and implementation and monitoring of national programs and foreign-funded projects. Agricultural extension is totally devoid of its responsibility (Ref. Fig. G.2.2). The DA is on top of the nationwide GPEP, a program aimed at increasing the production of paddy rice in irrigated areas and corn through the provision of seeds to qualified farmers at cost. It is likewise spearheading the so-called KPAs, specific areas for the growing of crops, livestock, and fishery.

By and large, the DA has been relegated the task of supervising research and regulatory services. Its research facilities comprise the BIARC and 6 ROS located in each of the provinces of region 5 (Ref. Table G.2.2). The DA's current set-up, on-station research activities have been classified according to development zones (e.g. upland plain, upland rainfed, etc.) and commodity responsibility. For instance, the ROS Albay is an integration of 4 facilities and the relevant research infrastructure to the Study area are the AES and ABS. The AES' main activities are focused on upland plain, and its major commodity responsibilities are pili and sweet potato with minor as cassava and gabi. Despite this focus, the AES' orientations are province-wide and sometimes do not lend relevance to the needs of small farmers.

2.1.2 Province of Albay

(1) Provincial Agricultural Services

The PAS assumed the function of over-all agricultural promotion and production at the Province of Albay. It is headed by a PAO, and the subject matter specialists numbering around 30 technical people who used to be with the DA have remained with the office. The PAS has jurisdiction over crop, fishery, and other special concerns. The livestock sub-sector belongs to another office. The role of the PAS in extension delivery is essentially staff support, mainly coordinative and backstopping the various municipalities (Ref. Fig. G.2.3).

An interview with the PAO reported that the PAS program is still funded out of national appropriations, an example of which is the GPEP. Some 200 and 240 hectares were reportedly covered in Camalig and Daraga, respectively.

There is minimal activity of the PAS although its priorities are: to expand irrigation systems; to modernize its soils laboratory; and to establish a provincial nursery. Funding for these activities was reported to come from provincial government revenues and the CDF. The CDF is a development fund of Congressmen and can be used for such purpose at the discretion of said officials. As to when these projects are going to be implemented is, however, a question inasmuch as there are no funds appropriated for. All sectoral agencies of the LGUs source their budget from the IRA, a national appropriation. The amount of the IRA that the LGUs can receive is based on criteria such as population, classification of LGUs, etc.

Of relevant activity of the PAS to the WLIRDP is the process of accrediting certified seed growers for rice and corn. PAS has seed inspectors to evaluate the facilities (e.g. solar dryers, warehouse, irrigation, etc.) of prospective growers. In addition, it has also the responsibility of recommending the seed growers to undergo training at the ATI/FTC and final accreditation is endorsed to the BPI through the DA's region 5 office. Seed standards for various types are available in the project file. Despite this activity of the PAS, no certified growers have been accredited in the Study area. This may be due to absence of proper facilities for seed growing.

The current budget of the PAS is about 8.7 million pesos. Of this budget, about 9.3% can be considered as directly related for agricultural extension. The bulk of 87% is allocated for salaries of personnel. The proposed budget for 1996 is projected to increase by 52% over the 1995 budget. A bigger share is also allotted for extension services in the magnitude of 17.9%. Notwithstanding this, there is still much to be desired about the quality of extension delivery. Thus, it is not surprising to find out that current extension efforts are still focused on rice and corn and hardly can be noticed on resource conservation cum farm intensification.

(2) Provincial Veterinary Services

The PVS was purposely created for the development of the livestock sub-sector. The separation of the PVS from the PAS in Albay is rather ironic, although it is consistent with the principles of the local government code. Most provinces usually integrate the services of both units (Ref. Fig. G.2.4).

The PVS is headed by a provincial veterinarian and it is organized functionally as follows: animal production; animal health; animal research; agri-business; marketing and special concerns. The PVS has about 25 technical people whose main responsibility is staff support to the various municipalities. The current leadership of the PVS has programmed a well defined operational plan about livestock extension for the province of Albay. It has targets, but the accomplishments have yet to be compared.

Of importance to the WLIRDP are facilities located in Camalig and are being used as sources of improved swine breeds and dairy products. These are the breeding center and dairy plant. These centers need upgrading, however. The breeding center produces stocks of swine normally sold to interested swine growers. Artificial insemination is provided by the center. There are 3 boars and 5 gilts in the center. The dairy plant operates in partnership with the Albay Dairy Farmers Multi-Purpose Cooperative, a duly organized and privately-owned cooperative. The viability of this plant, however, remains unimpressive.

Another service being provided is prevention of animal diseases. Vaccination, as one of the activities, is on a need basis depending on the requirements of the concerned LGUs. It can be described as reactive and may not be a good approach considering the number of small livestock raisers in the Study area.

The total budget of the PVS for 1995 is roughly 4.6 million pesos, 50% less than the PAS budget. However, 26% of its budget goes to livestock extension, better than the 9.3% allocated by the PAS. During the past periods of 1993 and 1994, the share of extension services stood at 75% and 28%, respectively. One can easily distinguish the dynamism being pursued by this office.

The present head of the PVS is concurrently the team leader of the PPAEP in the Province of Albay. The experiences of the Provincial government in the implementation of the PPAEP should provide valuable insights to the WLIRDP.

(3) Pilot Provincial Agricultural Extension Project

The PPAEP is an extension project aimed at strengthening the capability of agricultural technicians at the municipal level as well as improving the approaches of extension delivery

to small farmers. The Provinces of Albay and Camarines Sur are two of the pilot provinces in region 5. The other pilot provinces are in region 10. The municipalities being covered in Albay are Malinao, Manito, and Oas with 3 barangays per municipality as study areas.

The project is being funded by the AIDAB. It was started in 1991 and due to end in mid-1996. The PPAEP relies heavily on participatory approach and the services of NGOs have been actively sought in community organizing. In addition, the project provided motorcycles and extension kits to agricultural technicians to improve their mobility and access to the farmers. The assessment and findings on the efficacy and effectiveness of this project can be found in the project file.

The fact that this project was tested in the Province of Albay and even if Camalig and Daraga were excluded in the study area, the experiences may lend valuable lessons in strengthening extension activities for the WLIRD. One of the worthy points about this project is the farmer driven nature of selecting proper technology and farming options. The choice of economic activities in the community reportedly emanated from the farmers themselves.

(4) Provincial Environment Services

The PES is a newly created office in the provincial government. Currently, only the head of the office is currently filled up. The other technical positions are still vacant (Ref. Fig. G.2.5).

The main activities of the PES were inherited from the devolved functions of the DENR such as community-based forestry projects, cadastral surveys, and protection of conservation areas. The PES has basically regulatory and enforcement functions. It has little to do with extension on the uplands, except on the establishment and maintenance of nurseries mainly for reforestation activity. The conduct of seminars about protection was reported as its past accomplishment which by standard is non-tangible. This may have been expected because the office is undermanned.

2.1.3 Municipalities of Camalig and Daraga

(1) Municipal Agricultural Services

The MAS provides the direct contact between the agricultural technicians and small farmers. Given this role, the agricultural technicians perform a very important service in the over-all improvement of agricultural development in the barangays in terms of providing new and improved agricultural technologies and better farming techniques.

Organizationally, the MAS has also retained the subject matter specialists. About 13 and 17 technical staff in Daraga and Camalig, respectively are assigned for each commodity and other support sub-sectors. The MAS is headed by a MAO and oftentimes the program and activities of the office is contingent on the skills and dynamism of its head. The MAO has to establish good rapport with whoever is the current leader of the municipal LGU because funding for all its extension activities come from the municipal coffers (Ref. Fig. G.2.6).

Technically speaking, the MAS is the premier agricultural extension office. The designation carries broad powers and responsibility over other specialized agencies performing similar extension activities. Thus, the MAS plays dual roles: providing direct agricultural extension services; and coordinating other similar services supportive of improvement to agricultural production and increase in the farmers income.

In view of the above, the most significant institutions that are expected to play a key role for agricultural extension in the WLIRD are the MAS in Camalig and Daraga. Presently, the technical people of both the MAS have completed degrees in agricultural science. The extension methodology being employed is still the usual TEV. Training is being done on extension agents (trainers) and in turn being re-echoed to the farmers. According to the

MAO of Camalig, one (1) extension personnel is required to visit a barangay once a week. Whether this is actually followed is open to question given the problem of mobility. The frequency of the TEV approach has accordingly declined in view of resource limitation. Demonstration kits and even nurseries have been reported to be acutely lacking. In addition, the incentives given to technicians have been drastically reduced.

The MAS in Camalig and Daraga do not currently have any distinct agricultural extension activities besides the traditional program inherited from the DA. Key interviews made on both the MAOs revealed that their major activity is on grains production, although based on their respective functional charts, it would appear that they have several programs ranging from demonstration on crop diversification; organization of farmers; soil and water conservation; livestock and poultry production; to market linking. However, no specific projects can be noticed in the various barangays to support these activities. So far, the only distinct program is the GPEP on a limited scale.

One of the basic problems raised by farmers who were interviewed is the lack of seeds and planting materials for upland rice, vegetables and perennial crops. This is something that should be addressed in the WLIRDP as a way of promoting crop diversification in the Study area.

The observation reveals that unless the MAS in Camalig and Daraga are adequately supported both financially and technically, they can hardly perform their active role of extension delivery. Indicative of this is the level of budget support coming from the municipal government as shown below. Of the total budget of the office, an average of 14.9% and 5.3% represents the proportion that is spent for extension in Daraga and Camalig, respectively during the period 1993-1995. While the absolute amount of budget is almost equal for both the MAS, Daraga allocates three times as much as Camalig. The bulk of the budget is allocated for salaries of personnel.

	1993	1994	1995	Average
Daraga MAS (P)	748,265	1,269,586	1,352,681	
Share of Extension (%)	11.2	14.6	18.9	14.9
Camalig MAS (P)	749,708	1,054,480	1,112,926	
Share of Extension (%)	4.8	4.7	6.3	5.3

Source: Annual Budget, Municipal LGU, Camalig and Daraga

For both the MAS to be responsive, the following must be considered. First, the mobility of the extension personnel should be enhanced. Random interviews conducted among farmers in the remote barangays of Camalig and Daraga revealed that they hardly notice the presence of extension agents. Second, the skills of the MAOs, including their staff should also be honed to keep them abreast with proper farming systems recommended at the barangay level. The MAOs are aware of the farming systems approach, but the level of understanding on how to do it is not clear to their minds. Third, the MAS must be fully equipped with facilities necessary for conducting on-farm trials and other demonstration activities.

2.1.4 Specialized Agencies

(1) Philippine Coconut Authority

The PCA's regional operations, an attached corporate agency of the DA, is generally centralized as shown in Figure G.2.7. The regional office takes care of all the budget requirements of its provincial and municipal offices in region 5. The provincial and municipal offices, mainly acting as frontliners, draw their respective budget and funds for coconut extension from the regional office based in Legazpi city. The PCA maintains a provincial office in Albay (located in the same building as the regional office) and municipal offices in Camalig and Daraga. The municipal staff maintains only one (1) technical people who is responsible for all activities in the barangays such as giving technical advice, establishing nurseries, and monitoring compliance of RA 8048. This law regulates the

cutting of coconut trees so as to prevent the wanton destruction of tress for lumber and conversion of coconut lands to other purposes. The enforcement of this law is open to question given the abundance of coco lumber in the market.

(2) Small Farms Coconut Development Project

The major extension activity on coconut is the on-going WB-assisted SFCDP. The entire funding for coconut extension comes from this project. It is target-driven and thus only selected coconut farms are assisted. The scope of the SFCDP in the Study area is given below. Data by barangay are available in project file. The extent of coverage is insignificant compared to the total coconut area of 6,240 hectares in the Study area. The 1994 data shows that only 6% of the total coconut area is covered under the SFCDP. The support given by the PCA under this project are free fertilizers and seedling materials. The fertilizers are intended for rehabilitation of coconut trees while seedlings are given to replace senile or old coconut trees. The latter is part of the replanting program.

	1991	1992	1993	1994
Camalig				
Rehabilitation				
Area (ha)	46.5	103.0	117.5	133.0
Number of farmers	24	100	116	129
Nutrient Support				
Area (ha)	22.5	20.0	22.5	22.5
Number of farmers	13	11	15	15
Daraga				
Rehabilitation				
Area (ha)	143.5	190.0	223.1	223.1
Number of farmers	131	183	212	212
Nutrient Support				
Area (ha)	38.0	20.0	19.0	19.0
Number of farmers	37	29	28	28

Source: Philippine Coconut Authority

The criteria being used by the PCA in giving this assistance are: (a) the coconut farm must be less than 5 hectares; (b) there must be an agreement between the tenant and landlord to rehabilitate the coconut trees; (c) free fertilizers are given for 11-50 year old trees; and (d) above 60-year old trees are eligible for free seedlings. Under the replanting program, the PCA provides all costs associated in the establishment of nursery. In addition, the PCA gives an assistance of 2,000 pesos per hectare as grant to farms affected by the replanting for the purchase of inputs and seeds for annual/seasonal crops to be planted while waiting for the coconut to BEAr fruits.

The SFCDP was started in 1991 and due to end in 1996. The PCA informed that the project will be extended until 1998. PCA's role on coconut extension is practically relied on the SFCDP. The other support (coming mostly from internal funds) are livelihood assistance, training and technical advice on coco-based processing and the IPM. It should be noted that the PCA courses all its extension support to the SCFOs based at the barangay level. The PCA has organized several SCFOs.

The livelihood support is a credit assistance managed by the LBP. The credit is only given to qualified SCFOs. The training on the other hand is reportedly conducted at the barangay level where group of 50 farmers per session are trained during the off-season months of coconut harvesting.

(3) Small Coconut Farmer Organization

The number of SCFOs in the Study area is about 14. The PCA reported that 5 SCFOs have cooperative status duly registered with the CDA (Ref. Table G.2.3). The SCFOs were mainly organized as conduits for the distribution of free inputs under the coconut

rehabilitation/replanting program. Those SCFOs which have become cooperatives, however, can engage in business activities such as marketing of copra. It is also interesting to note that the membership of these organizations is multi-sectoral composing of small landowners, tenants and lessee. Tenants comprise 50% and 26% of the total membership in Camalig and Daraga, respectively. Thus, given the policy of the PCA that assistance is coursed to these organizations, it is likely that non-members are not eligible for support under the current extension efforts, a basic weakness of the program.

In view of the emphasis on the SFCDP, there is minimal effort to promote inter-cropping under coconut trees. This observation is evident in the Study area. The question on which agency to promote such an activity is a gray issue between the PCA and MAS. The latter believes that it is its mandate to do so, but the former thinks otherwise. There is apparently a confusion on this activity, and this is still unresolved.

(4) Albay Research Center

The ARC is one of the 3 research centers maintained by the PCA which specializes on coconut varietal improvement and crop protection programs. The ARC, located in Banao, Guinobatan, Albay has about 63 hectares of land devoted for coconut research. It is an autonomous unit and its operations are independent of the activities of the PCA's region 5 office. The ARC is directly under the PCA central research office based in Manila.

The varietal program is focused on tissue culture, i.e mass propagation of planting materials. Experts at the center have developed the technology for the mass production of macapuno, a special variety of coconut, the nut of which is the source of the famous "buko" being exported to the world market. The problem, however, is the limited source of planting material and its prohibitive cost. The cost of a tissue planting material is reported at 300 pesos per seedling and obviously doubtful whether at such cost is affordable to farmers. The cost is accordingly compensated by the high recovery of macapuno nuts. About 75% to 100% macapuno nuts can be harvested in one tree as against the traditional variety of 30%. If the intention is to improve the income of coconut farmers, the planting of macapuno may be a good option. Extension efforts to disseminate this technology appears to be overlooked neither by the PCA nor MAS.

There are around 97 cultivars nationwide, 46 of which are available in the center. The experts at the center claimed that the problem of coconut trees in region 5 is the relatively low genetic potential of existing coconut trees. The PCA's current rehabilitation program (i.e fertilization) is reported to be a stop-gap measure and will not significantly increase the yield. The long-term solution is to replant the coconut farms with hybrid coconuts. The average age of coconut trees in Camalig and Daraga is still young ranging from 25 to 40 years.

Replanting, however, was reportedly constrained by the lack of seed gardens to mass produce the hybrid cultivars. This situation prevails in region 5 and Albay. Camalig and Daraga have been identified as potential sites for seed gardens. Funding for the development of these facilities are also limited. Accordingly, the PCA's capacity to produce seed nuts is estimated at 240,000 per year as against total demand of 12,000,000 per year. The PCA has developed a seed garden in Palawan (Region 4) of around 600 hectares at a cost of 228 million pesos. The seed garden is capable of providing the seed requirements of 32,400 hectares per year. The success of the nationwide replanting program can therefore be argued to be contingent on the PCA's capability to mass produce hybrid seedlings.

(5) Fiber Industry Development Authority

The FIDA's main responsibility is to promote the planting of abaca (*Musa textilis* Neo). Abaca used to be extensively grown in the Bicol region, but with the bunchy top disease which devastated large areas in the early 1980's, its cultivation drastically declined. Off late, however, there has been a renewed thrust to expand the cultivation of abaca in region 5 in view of the strong world market demand for natural fibers.

The FIDA's extension operation is centralized (Ref. Fig. G.2.8). The regional office in Legazpi city handles all disbursement for extension and other field activities. The provincial office based in Tabaco takes care of field operations. The assignment of extension people in municipal offices is clustered based on abaca hectarage unlike in the PCA where it maintains one staff per municipality.

The extension program of the FIDA mainly involves the distribution of planting materials and stripping knives for extracting abaca fiber. A tissue culture laboratory in the regional office propagates the seedling materials. The FIDA also maintains another tissue culture laboratory in Sorsogon and fiber seed banks in Catanduanes and Camarines Sur. The seed banks are the sources of plant materials for propagation at the tissue culture laboratories. The Albay tissue culture was reported to have propagated 11,000 seedlings during the first semester of 1995.

(6) Abaca Rehabilitation Program

According to the FIDA, the priority program for abaca rehabilitation is concentrated in municipalities where there are contiguous areas and isolated from industrial or along national highways to avoid possible disease contamination. There exists also a law, i.e. RA 1176, which clearly delineates the planting zones for abaca and corn because the latter has been found out to be a pest carrier (aphid) for abaca. Under the law, abaca must be grown away from corn at a distance of 500 meter-radius.

Under the on-going rehabilitation program, only 100 hectares are covered for support in 1995, 75% of which are located in Catanduanes and Sorsogon. A meager 12% is located in Albay. Furthermore, only Camalig in the Study area is included in the rehabilitation, with 3 hectares and 4 farmers as the area covered. However, there are about 100 hectares of abaca planted in Camalig. The main criterion for selection of abaca growers is willingness of the farmers to grow abaca. For every planting material given by the FIDA, the farmer is required to return two seedlings from his farm.

Pulp and paper industries in Albay (e.g. Isarog and Alindeco) have expressed their desire to assist prospective farmers to grow abaca. Abaca handicraft processors interviewed in Legazpi city have also reported that the production of abaca in Albay is insufficient to meet their requirements. These processors, including the pulp and paper industries get their abaca fibers as far as Leyte and Samar in Visayas and Davao in Mindanao. The planting of abaca can thus be an option in the Study area, especially in the uplands.

(7) Bicol University

The BU's program on agricultural extension is vested in its College of Agriculture and Forestry based in Guinobatan, Albay (Ref. Fig. G.2.9). The BUCAF has developed the capability of training extension personnel and other practitioners in agricultural promotion, including the packaging of mature technologies. This is the main contribution of the university with respect to extension. The extension activity is headed by an extension coordinator and the work is divided according to functions. The extension policies of the BU are available in the project file.

The BUCAF's umbrella program for extension is the on-going BIDANI among the rural poor. The BIDANI's entry point is through nutritional improvement. By emphasizing nutrition, the farmers are thought to grow crops and other products complementary to achieving good health and sanitation. The program stresses the critical participation of farmers in decision-making. It has a component on enhancing the skills of the LGUs, NGOs and other organizations to be self-reliant in community projects. The BIDANI covers 9 barangays in the Study area, with 7 and 2 barangays located in Daraga and Camalig, respectively.

The other extension programs of the BUCAF are so specific that they are being pursued due to external and local funding assistance. The university can fulfill its obligation to provide extension service to the extent of such support. Its own financial resources are limited.

The university has modest facilities and number of faculty staff which can be harnessed as resource persons. If these are not being taken advantage of by the MAS, presumably it is a case of improper coordination. The staff of the BUCAF can very well serve as resource persons for the WLIRD.

(8) Agricultural Training Institute

The ATI is the DA's training arm and has several training centers nationwide (Ref. Fig. G.2.10). The FTC located at the compound of the BUCAF is the facility relevant to the WLIRD. Its main function is to conduct location-specific training for extension workers, farmers, fishermen, and farm families. ATI received a grant assistance from JICA several years back in the form of audio-visual equipment. The FTC has not benefited from this assistance, however. Accordingly, the regional training center based in Naga city was a beneficiary of the JICA assistance. There is a proposal from the center to upgrade its facilities and this has been submitted to the central office for possible assistance under the JICA. The list of equipment is available in project file.

A cursory look at the trainings conducted by the FTC in 1994 covered 51 trainings involving 2,163 individuals. About 60% of the trainings were concentrated on rice and corn production techniques for farmers, agricultural technologists and seed producers, all of which were under the GPEP. Roughly 80% of the trainees were farmers. Trainings on coco-based farming system were also conducted, but none of the recipients came from the Study area. This points out that trainings are very much contingent on the availability of funding support and not necessarily on the perceived needs of the farmers.

While the FTC serves as the main training arm of the DA in the province, it does not also have clout over the other agencies, notably the PCA and FIDA. These agencies conduct their own training irrespective of the mandate of the FTC. The provincial advisory training committee has been said to coordinate this matter, but it also acts as an ad-hoc body.

The FTC services 3 provinces, namely: Albay, Sorsogon, and Masbate. It can accommodate 400 training participants at any given time and has a dormitory capable of housing 80 people. The FTC does not have any equipment for on-farm trials and demonstrations. It borrows equipment from the BUCAF and other institutions for doing its training. It has a core training staff, but also draws training personnel from the university and the DA' region 5 office.

The above condition is one of the limiting factors for the FTC to be a venue for an integrated training program. The FTC admits its difficulty of scheduling a training program outside of its ambit because of lack of equipment and training staff. It also acknowledged the difficulty of imparting field level approaches due to this limitation. Post-harvest and processing equipment are lacking.

(9) National Irrigation Administration

The NIA maintains a regional office in Naga city and its provincial office is based in Ligao, Albay. There is no doubt about its capability in constructing irrigation systems. Over the years, the NIA has proven to be competent in this field. With the devolution, however, the construction of communal irrigation system has been given to the LGUs. It is sad to note that the NIA has not yet transferred the technology to the LGUs. The regional and provincial structures of the NIA are still the same despite the devolution of communal irrigation system to the LGUs (Ref. Figs. G.2.11 and G.2.12).

A critical function of the NIA that should be examined is its role in the organization of the IAs. A number of the IAs (outside of Study area) are becoming non-viable. They have difficulty in maintaining the irrigation facilities turned over to them and the members are also dwindling. The dwindling membership is caused by lack of water supply, and hence reducing interest among members to participate and fulfill their obligations. This restricts their ability to remit amortization payments, especially for communal irrigation facilities to the NIA. Over the last five years, the amortization collection for CIS in almost all regions with the exception of regions 11 and 12 have been declining. Nationwide, the amortization collection efficiency stood at 28% in 1991 and dropped to 16% in 1995 (Ref. Table G.2.4). The NIA still looks at the IAs as organizations with no business perspective. This naive view is a deterrent to the viability of the IAs.

(10) Department of Science and Technology

The DOST maintains both a regional and provincial office in Legazpi city. The DOST's main role is in the commercialization of technologies in agriculture and industry (Ref. Fig. G.2.13).

The 1993 Annual Report cites a number of technologies being developed by the DOST, but of foremost interest to the WLIRD is the citronella project being implemented in Malilipot, Albay. The project involves extraction of citronella oil, a raw material for most pharmaceutical product. The project is being managed by a cooperative with assistance coming from the DOST. The other project is coco-fiber plant in Camalig. Both projects are relatively new and their viability are still to be proven. The availability of these technologies would serve as potential rural industries for the WLIRD.

2.2 Non-Government Organizations

Reliance on the extension services of the NGOs in the Study area, particularly in community organizing has been observed to be minimal. The extension activities of the NGOs range from mobilizing credit, capital build-up and training peoples organization on the management of small income generating projects. Random interviews among the farmers revealed hardly the existence of the NGOs in the barangays. The local-based NGOs in Albay which have been interviewed confirmed that they do not lend their services for free unless they have externally funded program. Another reason cited is, if ever funding is available, the priorities are the far flung barangays.

Among the local-based NGOs in Albay, they have also a unique problem of not being able to unify themselves and hence their extension efforts are very diffused. This observation was made by a reputable NGO in Albay. Lack of coordination among the NGOs is very evident. They have their own priorities and agenda too.

2.3 Summary of Findings

The following observations have been noticed by conducting ocular inspection in the different barangays and supplemented by interviews of local and influential people.

2.3.1 On Technology Adaptation

- (1) The technology for paddy rice production is observed to be sub-optimal. Farmers do apply fertilizers and pesticides and use the HYV seeds, but whether this is the proper farming technique is believed to be not clear among themselves. One problem that has been mentioned is the scarcity of certify seeds. Farmers get their own seeds from their previous harvests, except for those covered under the GPEP farmers. Production of certify seeds in the Study area is virtually negligible (list of seed growers is in project file).

- (2) Extension service for coconut is being handled by the PCA. The current program involves fertilization of coconut trees and replanting of old or senile trees (>60 years). This is being actively pursued because of funding assistance from the WB. However, since the extension is target-driven, only 6% of the coconut farms in the Study area are included. Thus, it is common to see poorly maintained coconut farms.
- (3) Coconut research on varietal improvement and pest and disease eradication is relatively equipped with modest facilities and technically managed by competent plant breeders.
- (4) Extension service for abaca is handled by the FIDA. The program also involves replanting and eradication of pests and diseases (bunchy top). Because of the selective nature of the extension, a negligible hectareage of 2.5 hectares is covered in Camalig Study area.
- (5) Livestock raising of improved cattle and swine breeds is evident among the farmers. It is estimated that 20% to 30% of the farm households are engaged in this activity. The presence of a breeding center in Camalig coupled by a previous livestock dispersal program of the government is believed to be the main factor for this activity. The perception among farmers to expand this activity is enthusiastic. One of the reported constraints, however, is the prohibitive cost of stocks. The cooperative rural bank in Camalig and the LBP provide livestock financing to qualified farmers although on a security basis.
- (6) Sun-drying of paddy rice and copra along the highways and so-called multi-purpose pavement is a common practice. The absence of a distinct dry season oftentimes prevent the farmers from getting well dried paddy rice and copra. Mechanical driers are widely promoted by the DA, but their acquisition cost has been reported to be prohibitive.
- (7) Soil conservation is widely promoted. However there are barangays in the Study area such as Magogon in Camalig and San Vicente Pequeno in Daraga where slopes of more than 12% are planted with annual crops. Soil erosion is expected to be a problem unless proper cultivation techniques are introduced.
- (8) There is generally minimal growing of seasonal crops such as legumes, rootcrops, and vegetables. This is also true for perennial crops, notably coffee, cacao, citrus, etc. Although these crops are feasible to grow as evidenced by their existence in some barangays, and are even highly promoted due to their earning potential, their cultivation is not intensive. The reasons that have been documented include both technical and economic. The technical problems are lack of planting materials and seeds and technical know-how. The economic problems, on the one hand are lack of short-term credit, poor farm to market road condition, security and unstable market. The lack of planting materials is critical as both the PAS and MAS do not have good nurseries.

2.3.2 On Farming Systems

- (1) Commodity-based and location specific technologies have been developed and tested by appropriate institutions within the confines of the Study area. Despite this advantage, mono-cropping is still the common practice. There is a distinct rice-rice cropping pattern under rainfed areas and coconut in the hilly lands. Except for a few farmers who practice multiple cropping and inter-cropping under coconut trees (e.g. Barangays Baligang, Talodong and Tagaytay in Camalig), the rest are mono-culture. There are admittedly factors beyond extension which continuously permit this situation. These include tenancy under coconut farms, poor road condition in remote barangays and inadequate marketing systems.

- (2) Farming systems as an approach to improve farmers income is widely accepted and promoted by the MAS. However, there are no models of good farming systems which are noticeable in the Study area. There is reportedly a vague understanding of this approach among extension agents (as acknowledged in the PPAEP report).

2.3.3 On Institutions

- (1) The advantage of the Study area is the presence of government institutions doing extension services. One of the problems appears on the access to information sharing among these institutions. The mechanism for coordination is reportedly in place but it is very weak because of its being an ad-hoc body. No single institution has ever exerted the role of a facilitator and coordinator. As a consequence, the PCA, FIDA and other specialized institutions do their extension work oftentimes incongruent with the priorities of the LGUs with respect to the choice of clients and areas to be served. The MAS at the municipal level should ideally take this role.
- (2) The MAS provides the direct link to the farmers as regards the promotion of better and improved farming techniques. The current absorptive capacity of the MAS in the Study area is far from satisfactory due to socio-political factors. To reinforce their clout over the other agencies, they certainly need a dynamic posture. This dynamism is very much contingent on the support it gets from the current municipal leadership. It is interesting to note that the MAS in Daraga is well supported by the municipal leadership.
- (3) The ability of the government agencies to provide extension is restricted by their budget and personnel. Relative to personnel, the bulk is affiliated with the regional office of the DA which are mainly concerned with research (Ref. Table G.2.5). Each has its own priorities and unless somebody call the attention of one over another agency, it would be very difficult to integrate the extension activities. The MAS in Camalig and Daraga are lacking in this respect.
- (4) Reliance on the extension services of the NGOs in the Study area, especially on community organizing has been observed to be minimal. Random interviews among the farmers revealed hardly the existence and/or presence of the NGOs in the barangays.

2.4 Implications

With the local government code, the burden of agricultural extension has been primarily vested at the MAS. The MAS in the Study area are both ill-equipped and ill-prepared to do this task. This has affected significantly their extension efforts at the barangay level. Unless this is given serious attention, this will exacerbate inadequate delivery of extension services.

3. COMPREHENSIVE AGRARIAN REFORM PROGRAM

3.1 Land Transfer by Mode of Acquisition

The DAR classifies its land transfer by mode of acquisition. The OLT practically covers rice and corn lands previously covered under PD No. 27. The other modes of acquisition are variants that do not associate any land use. In the Study area, lands being transferred under the GFIs, VOS, VLT and CA are accordingly 90% coconut and idle lands inasmuch as the transfer of rice and corn have almost been completed.

The non-land transfer is essentially leasehold. It is a perpetual lease that stipulates fixed land rentals at no more than 25% of net production. This means that the lessee gets 75% of the net production.

3.2 Scope and Accomplishment

The scope of the CARP in the Study area is about 3,200 hectares involving 355 farmers as given below. Data by barangay are available in the project file (Ref. Tables G.3.1 and G.2.3). This represents about 38% of total agricultural lands in the Study area. This also implies that most lands are under the retention limit. The DAR has distributed the lands to bona-fide farmers by an average of 10%. The balance of 90% are said to be coconut lands.

	Scope	Accomplishment
Camalig	1,500	137
Daraga	1,700	175
Total	3,200	312
Per cent distributed	10	
Total Agricultural land	8,844	8,844
Per cent of CARP	24	4

Source: Municipal Agrarian Reform Office, Camalig and Daraga

The estimate on coconut lands covered under the CARP is about 2,400 hectares as given below. This is roughly 32% of the total coconut lands in the Study area. The DAR informs that these lands belong to compulsory acquisition. The timetable set under the law to acquire such lands is expected to commence in 1996.

Municipality	Hectarage
Camalig	900
Daraga	1,500
Total	2,400
Total coconut land in study area	7,603
Per cent CARP	32

The average farm sizes distributed under various mode of acquisition are given in below.

Mode of Acquisition	Hectarage
Operation land transfer	0.50 - 0.65
Voluntary offer to sell	0.20 - 1.85
Government financial institutions	0.67 - 1.60

Source: Municipal Agrarian Reform Office, Camalig and Daraga

3.3 Agrarian Reform Community

The ARCs are being used by the DAR as their main vehicle in promoting the delivery of support services to the CARP. It is anchored on the concept of an integrated area development. None of the barangays or cluster of barangays in the Study area has been identified as the ARC. The ARCs are located in barangays Iluluan and Salvacion in Camalig and Daraga, respectively. The DAR has its own criteria for selecting the ARCs, among which are presence of large CARP areas, accessibility, and availability of basic services. The development of future ARCs, according to the DAR, is given priority to barangays whose projects are ready for implementation. The chances of the barangays in the Study area to be considered as the ARCs are expected to be high given the components of the WLIRD.

3.4 Implications

The non-completion of land transfer for lands under coconut is likely to affect the tenurial security among the tenants. The incentive to improve their farms by applying modern inputs and intensify production through inter-cropping is at best minimal because of uncertainty over rights to cultivate the land. This condition is also applicable for those coconut lands under the retention limit. Neither the DAR nor PCA monitor the relationship between the tenant and landlord in these areas. The PCA reports that the number of tenants being assisted under its coconut rehabilitation/replanting program in the Study area ranges from 26% to 50% of the total farmers. This being the case, it is best for the DAR to place all these lands under the leasehold system. The DAR should, however, accelerate documenting the ownership structure and identify the prospective beneficiaries to expedite the distribution of these lands. Off late, however, the DAR has suspended the implementation of the leasehold system. This is to prevent the farmers from continuously paying land rentals at the expense of low production brought about by the recent calamities, especially in coconut lands. Notwithstanding this, the suspension may only be a palliative measure and as such the DAR should still continue accelerating the leasehold system. This underscores the importance of diversifying agricultural activities in coconut lands so as to expand the income opportunities of the farmers.

Another implication is the relatively small sizes of lands awarded under the CARP. Considering the physical attributes of these lands, the productivity may also be restricted.

4. COOPERATIVES

4.1 Status of Cooperatives

The cooperatives that were studied are those which are duly registered with the CDA (Ref. Table G.4.1). Through the CDA's registration, these cooperatives acquire juridical status. It should be noted that farmers cooperatives normally register with the CDA as multi-purpose, to avoid subsequent registration in case they diversify their business operations.

The number of cooperatives in the Study area is given in below. In general, they are all classified as primary cooperatives. By type of business, the cooperatives are mostly in relending. These cooperatives were mainly established to provide credit to their members, an intervention that was mainly provided by the LBP in 1992. The LBP took an active part in organizing these cooperatives in order to be eligible and can access to its small farmer financing program. There are virtually few cooperatives engaged in business other than relending.

Business	Camalig	Daraga
	Number	
Relending	4	6
Trading (palay/copra)	1	-
Transport	1	-
Consumer	2	-
Relending and Trading	1	1
Total	9	7

Source: Cooperative Development Authority

The indicators on the financial condition of the cooperatives are given below. Most of the cooperatives are newly registered, about 3 or 4 years ago, an indication of their informal structure. The average member size is about 35, most of whom are farmers. Only 60% of the members can be considered active, however, based on key informant interview with some officers of the cooperatives. The paid-up capital is about 28,000 pesos and the capital base (networth) is roughly 55,000 pesos. The average net income is about 10,000 pesos. The ratio of total assets to total liabilities (an approximation of liquidity ratio) is 1.5. This is not bad per se given that the quality of the assets of the cooperatives are mostly current in nature. For these cooperatives to have a stronger financial base and be liquid, however, they need capital accumulation.

There seems an ambivalent attitude among farmers in the Study area to join the existing cooperatives, based on random interviews of non-members. This has been reportedly due to poor information campaign and credibility problem among the cooperatives. Most cooperatives do not have formal offices, hence the operations are rather loose. Given the LBP's current accreditation and eligibility criteria for accessing to its small farmer financing, the cooperatives will have difficulty accessing financing from the LBP. For one, the LBP requires a minimum membership of 50. The more important conclusion is that it would be very difficult for these cooperatives to be self-reliant and viable over the long-term unless drastic capability building is introduced.

Indicators		
1.	Average size of members (no.)	35
2.	Average years registered (no)	3
3.	Financial (1994) (P)	
a.	Average total current assets	150,666
b.	Average total assets	168,567
c.	Average total current liabilities	1,799
d.	Average total liabilities	112,812
e.	Average members equity	50,298
f.	Average paid-up capital	28,283
g.	Average gross income	31,372
h.	Average operating expenses	20,476
i.	Average net income	10,482
j.	Average liquidity ratio	1.5
k.	Profit margin (%)	50

Source: 1994 Financial Statements of Sample Cooperatives.

4.2 Cooperatives Outside of the Study Area

4.2.1 Santo Domingo Peoples Cooperative

The SADOPECO is a federation of 13 primary cooperatives located in the municipality of Santo Domingo. It has about 800 members, 90% of whom are small farmers coming from the 13 primary cooperatives. Its membership is limited to primary cooperatives located within the confines of Santo Domingo. There are plans to expand the membership of Santo Domingo. Accordingly, the by-laws will be amended shortly to accommodate primary cooperatives outside of Santo Domingo.

The SADOPECO is claimed to be the only cooperative in Albay which has the distinction of being managed as a business enterprise. Currently, the cooperative is engaged in business activities such as relending, rice milling, feed milling, grains trading and growing livestock. The SADOPECO buys corn from a primary cooperative in the Study area. This is so far the only relationship being established by the SADOPECO with the cooperatives in the Study area. The member cooperatives of the SADOPECO receive technical assistance and other services.

The financial status of the SADOPECO is given below. Building up a financial base such as the SADOPECO is a long-term process. It received a lot of financial and technical support from foreign and local NGOs.

Year	(P 000)	
	1993	1994
Total assets	7,735	8,211
Current assets	2,828	3,770
Total liabilities	7,576	8,067
Current liabilities	1,445	2,087
Current ratio	1.96	1.80
Net worth	159	144
Gross income	928	1,087
Operating expenses	1,366	945
Net income	(438)	142
Profit margin (%)	-	15%

Source of data: SADOPECO

4.2.2 Bicol Cooperative Development Center

The BCDC is also a federation of 150 primary cooperatives. It is based in Naga City, Camarines Sur. It offers basic services to its members, mainly on capability building. The BCDC is one of the recognized and reputable NGOs in region 5 providing technical assistance to cooperatives.

Unlike the SADOPECO, the BCDC accepts primary cooperatives as members regardless of their location. Its criteria for membership are rather reasonable (see criteria in project file). The financial status of the BCDC is given below. Compared with the SADOPECO, it earned better profits during 1993 and 1994. Its resources are also modest.

	(P '000)	
Year	1993	1994
Total Assets	7,148	7,482
Total Current Assets	6,438	6,479
Total Liabilities	4,182	3,999
Total Current Liabilities	1,262	1,350
Current ratio	5.10	4.80
Net worth	2,966	3,483
Gross income	2,342	2,454
Operating expenses	2,210	2,366
Net income	132	88
Profit margin (%)	6%	4%

Source of data: BCDC

4.3 Implications

The cooperatives in the Study area are obviously immature. Neither the cooperatives existing in Camalig and Daraga can be relied upon to assume the function of providing an integral delivery of support services. With the present condition, most cooperatives will not be eligible for financial support under the small farmer financing program of the LBP.

For the cooperatives to attain a modest level of absorptive capacity, institutional strengthening is deemed required. The CDA and LBP are certainly restricted to provide technical assistance to these cooperatives due to budget constraint.

The role of the cooperatives in the WLIRD can not be overemphasized. More than the basic services that they are required to do (e.g providing farm inputs, marketing, etc.) they are envisaged to integrate production cum processing as well as extension services.

The existence of the SADOPECO and BCDC are very important in the WLIRD. These federations will be useful in improving the technical and managerial skills of the primary cooperatives. The SADOPECO and BCDC can potentially serve as "mother" cooperatives.

In view of the enterprises being established by the SADOPECO, it can easily establish a linkage with the primary cooperatives as its satellite cooperatives. Through this tie-up, the SADOPECO can at the same time coach the cooperatives on how to manage their internal operation. This scheme is the best route to foster the cooperatives to undertake agri-based industry projects.

Another option is for the existing cooperatives to consolidate their resources. This can be done for cooperatives performing the same service. In so doing, the cooperatives are expected to have stronger capital and management bases. Consolidation, however, is not going to be easy given the individualistic nature of the Bicolanos. It will take a lot of value formation among the members.

5. AGRICULTURAL CREDIT

5.1 Suppliers of Credit

There are several banks, both private and government-owned, existing within the confines of the Study area. Camalig and Daraga have both rural banks. Camalig has 2 rural banks, one of which is a cooperative rural bank. Daraga has a privately-owned managed rural bank. The important suppliers of agricultural credit are the LBP through the cooperatives, rural banks and traders. The traders have been reportedly providing mostly short-term credit needs of farmers through a special arrangement where farmers consign their produce to the traders in exchange for loans. Private commercial banks, although plentiful in Legazpi city, are not as keen as the other formal credit institutions in providing loans to the farmers for obvious reasons. The commercial banks supply mostly the credit lines of copra and abaca traders, including handicraft processors and exporters where the risk of non-loan recovery is minimal. The DBP, another government commercial bank has reported to have available credit funds for medium scale agro-industries. Its funds are generated from external and internal sources. A special financing for enterprises under its omnibus financing provides concessionary loans to individual borrowers, including cooperatives.

5.2 Demand for Credit

The demand for short-term agricultural credit is perceived to be high based on the observation provided by a rural bank in Camalig. The volume of loan releases of the LBP and the cooperative rural bank in Camalig given below shows the indicative magnitude of loans being supplied by formal credit institutions.

Year	LBP		Rural Bank
	Camalig	Daraga	Total *
1990	456	654	-
1991	474	-	3,255
1992	1,942	1,264	3,511
1993	589	106	1,516**
1994	1,368	-	2,665
1995	75***	284***	-

Source of data: LBP and Cooperative Rural Bank of Camalig

* Total for Albay

** Supervised agricultural credit

*** As of September 30, 1995

It should be mentioned, however, that while demand for agricultural credit is perceived as high, the actual demand from these formal institutions may be low. The figures of the LBP during the last quarter of 1995 is indicative of this situation. Farmer cooperatives can hardly access to the LBP because of their high credit risk and low absorptive capacity. In addition, the LBP has lately introduced a very rigid accreditation and selection criteria for cooperatives, and as such only viable cooperatives measured by absorptive capacity and earning asset level are eligible for financing under its small farmer financing program. The DBP, another government bank, also noted the dearth of good and viable project proposals.

By type of commodity, grains, livestock and coconut production were mostly the funded projects as shown in below. An interesting information is the funding of high value crops (e.g. black pepper and garlic) by the LBP. Fruits and vegetable production were also funded by the LBP.

	(P '000)					
Year	1990	1991	1992	1993	1994	1995
LBP						
Grains (palay/corn)	774	-	252	456	238	-
Livestock	312	574	2,941	239	1,130	-
High value crop	25	-	13	-	-	285
Fixed asset	-	-	-	-	-	76
Cooperative Rural Bank						
Grains (palay/corn)	-	1,170	1,563	2,109	2,005	-
Coconut	-	592	631	1,297	1,113	-
Fruits & Vegetables	-	11	9	5	4	-
Livestock	-	3,243	3,424	2,853	1,120	-
Fishing	-	13	87	16	10	-

5.3 Implications

The demand for short and long-term agricultural credit is expected to grow as agricultural production becomes intensified in the Study area. This need becomes even more important if viewed within the context of industrialization. At present, there is some degree of flexibility to provide financing for diversified projects by the formal credit institutions. This is indeed a good signal.

The LBP is expected to be the main supplier of agricultural credit because of its mandate to assist small farmers, particularly the ARBs. In addition, the LBP is continuously augmenting its resources by soliciting concessionary loans from external donors, notably the OECF. Lately, the LBP's proposal for a second OECF Rural Credit Project has been endorsed by the government. The OECF has just completed appraising the project.

In view of the above, it is best that the administration of the credit component of the WLIRD be dovetailed with the existing program of the LBP. One of the foreseen problems, however, is the low absorptive capacity of the cooperatives in the Study area. Given the current status, only a few or even none may access the LBP's credit program. This underscores the importance of strengthening the viability of the cooperatives.

6. SUMMARY OF ISSUES AND CONSTRAINTS

6.1 Agricultural Research and Extension

There is a perceived gap between applied research and extension. This weakness is more of an operational concern rather than a policy issue, however. The main issues exacerbating this gap are the following:

(a) Poor resources of the MAS

The MAS is the premier agricultural institution that provides direct link to the farmers. The current status of the MAS, however, is far from satisfactory. Although this observation varies for Daraga and Camalig, with the former having an advantage financially, both offices are generally ill-equipped and ill-prepared to handle the critical role of extension. The MAS have to contend with socio-political factors. Their extension budget is contingent on the 20% allotment coming from the internal revenue allocation (IRA). Currently, the MAS in Daraga and Camalig allocates about 15% and 5% of their budget, respectively for extension. The bulk is spent for salaries of personnel.

(b) Lack of coordination between and among the MAS and other agencies

The mechanism for coordination through the various local councils (e.g. municipal agricultural and fishery council) exists, but such a mechanism is very inactive. The MAS can not exert their clout over the other agencies because they do not have the dynamic stature. It is thus common to observe extension activities of other agencies sometimes incongruent with the priorities of the municipal government with respect to choice of farming system and clients to be served.

(c) Lack of access to information sharing

The technologies for farming systems in the Study area are reportedly available, but the farmers, particularly uplands can hardly access new and useful information because no one is on top of this activity. The MAS do not have an information unit as a depository of new and tested farming technologies. These may be available in the BUCAF and other research and experiment stations, but these are not disseminated properly. It is not only a question of availability but teaching and coaching the farmers on how to apply such technologies is done occasionally.

(d) Absence of barangay-wide extension activities

Other than the visit being made by extension agents to the barangays, there is virtually no program for barangay extension which can be argued as sustainable. The MAS, including the PAS are still dependent on national programs. To the extent that these are nationally funded, the orientations are nationwide. Activities of research and other specialized agencies are also target-driven, and such are not necessarily the priorities of the small farmers.

There exists two (2) on-going barangay-based extension projects in Albay, namely the Pilot Provincial Agricultural Extension Project (PPAEP) and Barangay Integrated Development Approach for Nutrition Improvement (BIDANI). These projects are essentially capability building for the LGUs, NGOs and rural-based organizations. One of the worthy points about these projects is the active involvement (participatory) among the farmers and rural folks in planning and implementation of support interventions in their communities. It is said that the nature of extension work is farmer-driven, quite distinct from the traditional approach of imposing on activities initiated at the top echelons of the government. The influence of these projects, however, are limited to the extent of available resources.

(c) Non-unified services of the NGOs

The NGOs have their own distinctive competence. Their common goal is to empower the grassroots. The problem which has been reportedly unique in Albay is the difficulty of having their extension efforts unified. Thus, their extension services are widely diffused.

6.2 Comprehensive Agrarian Reform Program

The progress of the CARP implementation is affected by the following:

(a) Non-completion of land transfer under coconut lands

It is estimated that there are about 1,420 hectares or 20% of total coconut lands in the Study area covered under the CARP. Most of these lands have not yet been distributed by the DAR, and thus the tenurial security of farmers under these lands is uncertain.

(b) High incidence of tenancy in small holders coconut farms

Neither the DAR nor PCA monitor the existing relationships between landlord and tenant on coconut lands. These lands are under the retention limit. There are reports that the incidence of tenancy in these areas is estimated at 26% to 50% of total farmers assisted by the PCA. The incentive for the farmer to intensify his production is certainly restricted.

(c) Smallness of landholdings awarded under the CARP

The average land sizes awarded under the CARP are relatively small. Rice and corn lands have average sizes ranging from 0.50 to 0.65 hectare per farmer. Other lands acquired under the voluntary offer to sell (VOS) and foreclosed government properties range from 0.20 to 1.85 hectare per farmer. The size and quality oftentimes determine the productivity of the land.

6.3 Farmer Cooperatives

The major constraint is the absence of strong and self-reliant cooperatives. Most cooperatives are financially and technically weak, with very loose management structure. Only 60% of the members are considered active. It is believed that these cooperatives suffer from weak leadership, conflict, poor financial control and other management-related problems.

This weakness has also been observed to be common among the IAs outside of the Study area. The IAs have basic problems on water management and maintenance of the systems. They are neither financially sound nor technically capable to make further investment or repairs on communal irrigation systems turned over to them. It is believed that the NIA's preparation for the IAs to be self-reliant organization is ought to be examined and reviewed further in light of these issues.

6.4 Agricultural Credit

The major constraint is the farmers' lack of access from formal credit institutions. Most farmers get their credit from private traders. As a result there is a mismatch between the supply of credit funds coming from formal institutions and demand for such funds.

The demand for short-term agricultural credit is perceived to be high, but actual demand is low on account of the high credit risk among farmer-borrowers, including the cooperatives. The low absorptive capacity further inhibits these borrowers to present good and viable project proposals for financing.

7. BASIC IDEAS FOR PLANNING AGRICULTURAL SUPPORT SERVICES

7.1 Agricultural Extension

7.1.1 Establishment of a Facility for Training

The facility is proposed to be the main venue for training farmers and extension agents. It is a facility fully provided with equipment necessary for conducting on-site trials on new farming techniques and systems; operations of post-harvest facilities; propagation of seeds and planting materials; and other related farming and processing activities. To be useful, the ASC should be manned by competent and skilled personnel.

It is proposed that the facility will be decided after proper consultations with concerned parties have been made, possibly in Phase II field work.. Existing facilities will also be explored. The possible facilities are the Albay Experiment Station (AES) and Farmers Training Center (FTC), both located in Albay. These facilities will be upgraded, however, to accommodate the new dimensions of the WLIRD. In addition, technical personnel from the BUCAF and other agencies may be tapped as resource persons for training the beneficiaries of the WLIRD.

7.1.2 Organization and Deployment of Barangay Extension Agents

Barangay extension agents (BEAs) are proposed to be drawn and selected from among dynamic farmers and will be trained accordingly to support the cadre' of extension agents of the MAS which are believed to be inadequate and sometimes overworked. The BEAs are voluntary workers. They will be assisted by providing them farm inputs and other demonstration kits which can be used in their farms as showcases for farm trials. The BEAs are expected to be the focal leaders to train and encourage their co-farmers to adopt better farming technologies.

To operationalize the BEAs, demonstration farms strategically located in the Study area will be established. These demonstration farms will be developed according to development zones (e.g. one for lowland and another for upland). It is proposed that equipment to be provided (e.g. post-harvest facility) and to be used for demonstration be maintained by the cooperatives.

7.1.3 Training of Technical Personnel of the MAS

The technical people belonging to the MAS, including municipal agricultural officers are proposed to undergo further training to familiarize themselves with the activities planned for the WLIRD. More than anything else the training will not be limited to technical but also in developmental planning to hone their skills for better planning and programming of extension activities.

7.1.4 Tightening of Extension Coordination Between and Among Agencies

The MAS will be relied upon as the main body to deliver extension service. For it to be effective, it should be supported technically and financially by the local chief executive. It is therefore proposed that the local chief executive initiate and activate the local bodies established so that extension can be coordinated properly.

7.2 Coordination with the DAR on the CARP

The DAR is expected to accelerate the distribution of coconut lands covered under the CARP. The department will do this within the ambit of the CARP law. This means that even if a timetable is set, there are legal infirmities which may derail the immediate distribution of these lands in the Study area.

Under this circumstance, it is proposed that the DAR places all the coconut lands under the leasehold system. The DAR should also come up with a monitoring system to track down tenurial relationships in these areas whether or not there are violations committed by farmer beneficiaries and landlords. This is necessary to effect the implementation of the proposed CARP land trust system in the model project area. Under this proposal, landless farmers association will cultivate the coconut lands under a mutual agreement with landowners with the farmer paying fixed rentals to the landowners.

There are other aspects of the CARP, particularly in the delivery of support services that are relevant to the project. Foremost is the so-called ARCs being currently promoted by DAR as its flagship program. The concept of the ARCs is patterned after the integrated area-based development. Briefly, the idea about its development is to focus support services to a barangay or cluster of barangay where the extent of land distribution and carp beneficiaries abound. The DAR envisions the ARCs eventually to be the communities where agro-based enterprises and managed successfully by the farmers' cooperatives as the vehicle to prosperous rural areas.

7.3 Strengthening and/or Establishment of Farmers' Organizations

The strengthening and/or establishment of farmers' organization stems from the fact that these organizations will render basic agricultural support services and operate and maintain some facilities constructed under the project. The services will be in the form of producing and supplying quality seeds, fertilizers, and other farm inputs; processing and marketing of farm products; and operating post-harvest facilities and maintaining an irrigation dam. It is the intention to see eventually these farmers' organization managing such activities as business enterprises.

The matter of strengthening the existing cooperatives is by no means an easy task. There are simply technical, financial and socio-cultural factors that make rehabilitation a long process. To handle this situation, it is proposed that the following measures will be considered:

- (1) Evaluate the existing cooperatives or related farmers organizations such as the SCFOs and see if the current resources permit expansion for activities designed under the model projects, otherwise new organizations may have to be formed.
- (2) For the formation of new cooperatives, it is envisaged that only those farmers who are willing and have enough capital should initially be encouraged to form the core group. To do it otherwise will be very unwieldy. The formation should be initiated by and among the beneficiaries, preferably those with inclination to do business endeavors and landless farmers. As a rule model barangays can start with minimum membership of 50 to be eligible under LBP's lending program.
- (3) Training should be given based on needs. There are several approaches and modules and this can be adequately handled by reputable and local-based NGOs.
- (4) Existing cooperatives is envisaged to be linked up with federations for on the job training and acquisition of skills in marketing, finance, etc. Two federations, namely the SADOPECO and BCDC can serve as potential partners for this arrangement. In addition, cooperatives performing the same activity in adjacent barangay will be encouraged to merge their resources to be able to assume the planned activities.
- (5) The aspect of establishing a new IA will be highlighted given the unique condition in the Study area where the proportion of landless is high at 70% of total farm households. There should be a plan where a new organization mainly responsible for service be established. Such a plan should improve the full cost recovery of the system. The new IAs should be organized by reputable NGOs. It is also proposed

that the perspective of the IAs over the long-term should be developed business entities to ensure their viability.

7.4 Agricultural Credit

The administration of agricultural credit requirement of the WLIRD is proposed to be dovetailed with the current small farmer financing program of the LBP. This underscores the importance of having strong and viable cooperatives since the LBP courses its financing only to cooperatives. In the meantime, however, that the cooperatives are not eligible under the LBP financing, the federation may act as the borrower and relend the funds to the members of the cooperatives.

7.5 Participation of Beneficiaries

The participation of beneficiaries will cover the entire spectrum of development activities, i.e. from planning to execution. The organization of beneficiaries will be looked into with existing organization. The only problem with these existing organizations is their viability. The organization of new group will therefore become inevitable. Coupled with this organizing activity will be enhancing the skills of the organizations as effective conduits for the delivery of integrated support services.

8. PUBLIC CONSULTATION SURVEY ON FARMERS IN THE MODEL PROJECT AREAS

8.1 Introduction

This section presents the concerns of the farmers' beneficiaries in the 4 model project areas. A two-pronged approach was employed, notably a series of public consultation among the beneficiaries; and a validation survey involving a stratified random sampling among the expected farmer beneficiaries of the project. For purposes of this report only the major findings are presented in this Annex. There is, however, a separate compendium of documents providing all the details of this activity. It should be noted that a local NGO conducted this activity for the project.

8.2 Results of the Public Consultation Survey

8.2.1 Introduction

To encourage the involvement of the project beneficiaries at the project planning stage, the JICA Study Team has recommended the conduct of public consultation survey in the following model areas:

- a) Lowland Irrigation Model Area (Camalig Diversion) which covers Barangays Ilawod, Libod, Ligban, Tagaytay and Gotob;
- b) Lowland Irrigation Model Area (Dam No. 2) comprising of Binitayan, Comun, Cotmon, Inarado, Alobo, Tabon-Tabon and Burgos;
- c) Upland Corn-Based Model Area (Barangay Magogon); and
- d) Upland Coconut-Based Model Area (Barangay San Ramon).

The activity was undertaken from June to August 1996 and entailed the conduct of a series of public consultation meetings at the barangay level and the interview of 400 respondents in the aforementioned sites to solicit the comments and suggestions from the intended project beneficiaries and make the project design more relevant and responsive to their needs.

8.2.2 Objectives

The conduct of the public consultation survey is envisaged to:

- (a) promote the participation of prospective project beneficiaries and reflect their concerns and willingness in planning, implementation and operation of the proposed Model Rural Development Plan; and
- (b) collect additional primary data on the socio-economic condition of farmer beneficiaries in the model areas.

8.2.3 Scope of Work

The engagement is primarily composed of two (2) major activities; namely: the conduct of consultation meetings per model area and at the barangay level and the undertaking of interview survey to 400 respondents in the four (4) model rural development areas.

Specifically, it entails the following activities:

- a) gathering of secondary data relevant to the design of the consultation;

- b) arrangement and actual conduct of the three (3) phases of public consultation meetings;
- c) actual conduct of the interview survey covering 400 farmer households;
- d) survey data inputting and processing;
- e) conduct of statistical analysis for each of the questions reflected in the interview survey;
- f) preparation of statistical analysis on the survey results; and
- g) submission of the Final Report.

8.2.4 Geographical Scope of the Public Consultation Survey

The consultation meetings covered 17 barangays of Camalig and Daraga comprising of Barangays Ilawod, Libod, Ligban, Tagaytay, Gotob (Camalig Diversion), Binitayan, Comun, Cotmon, Inarado, Alobo, Tabon-Tabon, Burgos, Taladong, Bongabong, Lacag (Dam No.2), Magogon and San Ramon.

The interview survey was conducted in the following barangays with the corresponding number of respondents:

Number of Respondents of the Interview Survey		
Camalig Diversion		
Ilawod	81	
Libod	13	
Ligban	16	
Tagaytay	41	
Gotob	15	166
Dam No. 2		
Binitayan	12	
Comun	19	
Cotmon	48	
Inarado	55	
Alobo	14	
Tabon-Tabon	7	
Burgos	11	166
Magogon		22
San Ramon		46
TOTAL		400

8.2.5 Final Results of the Consultation Meetings

This activity was conducted in three (3) phases as follows:

- a) First meeting which entailed the conduct of discussions in each of the model area to present the overall concept and components of the WLIRD. The representatives from the line agencies, local government units of Daraga and Camalig and the JICA study team members attended these meetings.
- b) Conduct of farmers' meetings at the barangay level which facilitated the discussion of specific issues relevant to each barangay. The meetings also enabled the farmers to clarify issues and other concerns which were not tackled in the first consultation meetings. The farmers were assisted in the discussion by the moderator from SEED Inc.

- c) Second meeting in each model area which focused on the recommended project design by the JICA study team. The recommendations per model area to alleviate the socio-economic situation of the farming sector were presented and discussed with the project beneficiaries. These meetings were also participated in by the representatives from line and local government agencies.

(1) Objectives

The meeting per model area was aimed at accomplishing the following objectives:

- a) to present the overall project concept and components to the intended project beneficiaries;
- b) to explain the specific project components per model area and to gather comments and suggestions from the participants;
- c) to elaborate on the requirements necessary to facilitate the implementation of the proposed project;
- d) to emphasize the importance of the active involvement of the target beneficiaries in the development and management of the project to ensure its sustainability; and
- e) to gather primary data necessary to come up with the farmers' profile in each model area.

(2) Content

The first consultation meeting per model area focused on the following topics:

- a) Presentation of the backgrounds on the Western Legazpi Irrigation and Rural Development Project;
- b) Presentation of the Outline of the Model Rural Development Project covering the following components : irrigation (for lowland model areas), physical infrastructure (i.e. barangay roads, Level II water supply) agricultural support services and institutional strengthening; and
- c) Discussion on the following requirements to facilitate the implementation of the project.
 - 1 For the lowland model areas
 - i) formation of irrigators association;
 - ii) payment of irrigators service fees; and
 - iii) payment of amortization of irrigation system
 - 2 For the upland model areas
 - i) formation/strengthening of farming-marketing service cooperative;
 - ii) extension and intensification of intercropping farming system; and
 - iii) improved practice in upland management through the adoption of SALT technology.

Visual presentations were made to facilitate the presentation and discussion of specific project components. These materials were also made into brochures and distributed to the participants for information and reference purposes.

(3) Participants

A total of 301 farmers attended the 1st consultation meeting held per model area. The following table reflects the details of the attendance in these meetings.

Number of Participants in the 1st Consultation Meeting Per Model Area	
1. Camalig Diversion	81
2. Dam Site No. 2	103
3. Magogon	44
4. San Ramon	73
Total	301

The representatives from the National Economic and Development Authority (NEDA), the Philippine Coconut Authority (PCA), the Provincial Planning and Development Office (PROVINCIAL PLANNING DEVELOPMENT OFFICE), the Provincial Agriculture Services Office (PAS), the Municipal Agriculture Services Office (MAS), the Municipal Planning and Development Office (MPDO) and the Municipal Agrarian Reform Office (MAR) in Camalig and Daraga also attended these meetings.

(4) Profile of Participant Farmers

There were 515 farmers interviewed in the consultation and farmers' meetings conducted. The breakdown is reflected in the following table:

Number of Farmers Interviewed	
Model Area	Number of Farmers
Camalig Diversion	69
Dam Site No. 2	266
Magogon	55
San Ramon	125
Total	515

(4.1) Camalig Diversion Lowland Model Project Area

a) Farmers by Age Distribution Group

Majority (41%) of the farmers belong to the 51-65 age category; followed by those within 31-50 (28%) years of age.

b) Number of Years Living in the Barangay

Most of the farmers were born in the barangay opting to stay and cultivate the land in their respective birthplaces. Twenty-three (23%) percent are migrants who have been staying in the barangay for more than 20 years.

c) Marital Status of Farmers

Ninety-three (93%) of those who attended were married.

d) Number of Children

Most of the farmers (29%) have 7-8 children closely followed by those with 5-6 children (22%). The farmers in these area still have the tendency to have a number of children who could assist in the farming activities.

- e) **Total Number of Persons in the Household**
- Thirty-two (32%) have 3-4 members in the family while 25% have 5-6 household members. It could mean that the children have families of their own and living apart from the family or they have left home to seek better employment opportunities outside of their barangays.
- f) **Maximum Level of Education Attained**
- farmers have completed elementary education (45%) with only 13% reaching college education. Nobody was able to finish college among the respondents.
- g) **Languages that Farmers Can Speak**
- Fifty-two (52%) speak Bicol only while 28% speak Bicol and Tagalog. Nineteen (19%) percent are conversant in Bicol and English.
- h) **Number of Farmers That are or Have Been Barangay Captain/Councilor**
- Only 7 respondents have been involved in the formal political organizations in the model area.
- i) **Member of Cooperative/Other Kind of Farmers Organizations**
- Less than half of the respondents are members of cooperative. A high percentage (41%) have never been members of any cooperative due to the fact that there are no existing organizations in their area.
- j) **Time Dedicated to Farming**
- Twenty (20) respondents or 29% are full-time farmers. However, a great number (25%) have said that they devote part of their time as part time farm laborers. The same number of respondents (25%) also mentioned that they are also engaged in handicraft production. This reflects the need of additional source of income to sustain their day-to-day expenses.
- k) **Total Annual Cash Income of Household**
- Fifty-five (55%) percent are earning less than P10,000.00 per year validating the initial finding that low income is one of the problems prevalent in the model area
- l) **Operating Farm Size and Tenurial Arrangement**
- Most of the farmers own their farms although the average farm size is less than 1 hectare. The same situation also holds true to those respondents who are leasing land.
- m) **Number of Crops**
- Majority (61%) does not practice intercropping. Rice is the only crop that they usually plant in their farm.
- n) **Level of Production**
- Those who are mainly producing rice (54%) are utilizing the harvest for home consumption only considering that majority are cultivating less than a hectare of land. Forty-four (44%) percent on the other hand utilize the produce for marketing and home consumption. A small portion (2%) is producing rice solely for marketing purposes. Crop 2 (coconut) is mainly produced for marketing and home consumption (58%) while Crop 3 (rootcrops, banana) is mainly for home consumption only.

(4.2) Dam No. 2 Lowland Model Project Area

a) Farmers by Age Distribution Group

Majority of the farmers (47%) belong to the 31-50 age bracket.

b) Number of Years Living in the Barangay

Fifty-eight (58%) have been born in the barangay while 24% are migrants from other municipalities in Albay.

c) Marital Status of Farmers

Most (95%) of the farmers who were interviewed are married.

d) Number of Children

The number of children in the family ranges from 5-6 (26%) closely followed by households with 3-4 children (20%).

e) Total Number of Persons in the Household

Most of the farmers belong to a big household with members numbering from 5-6 (24%). For some there is still a tendency to have family numbers within the 7-8 range, a proof of the prevalence of extended families in the rural areas. However, a substantial number of (24%) of the interviewed farmers have 3-4 persons as household members indicating the growing tendency of the respondents to confine themselves with the immediate members of the family.

f) Maximum Level of Education Attained

Fifty-four (54%) have finished their elementary education. Only 4% have completed college while 2% did not have any formal education.

g) Languages that Farmers Can Speak

Seventy (70%) percent are well-versed in Bicol and Tagalog while 20% can converse in English and Bicol as well.

h) Number of Farmers That Are or Have Been Barangay Captain/Councilor

Forty (40%) percent have been involved in political organizations, having served as a barangay captain or barangay councilor at one time or the other.

i) Membership in Cooperative/Other Kind of Farmers Organization

A very high (62%) percentage have never been a member of any organization showing a vast potential of the populace which could be tapped in the formation of farmers associations.

j) Time Dedicated to Farming

Fifty-one (51%) are full-time farmers while 27% are part-time farmer/part time farm labor. Due to its proximity to the town proper 14% indicated that they are part-time employee/part time farmer.

k) Total Annual Cash Income of Household

Most of the respondents (48%) have annual income below P10,000.00. Twenty-two (22%) percent have yearly income ranging from P10-15,000.00

l) Operating Farm Size and Tenurial Arrangement

Seventy-five (75%) of the farmers own land while 25% are tenants. They are mostly cultivating farms less than one (1) hectare. Others, 31% and 34% respectively are farming lands from 1-1.49 has.

m) Number of Crops

Majority of the farmers (57%) are planting only one (1) crop. Twenty four (24%) percent are planting two crops in about the same area.

n) Level of Production

A small percentage (43%) for rice (Crop 1); 36% for coconut (Crop 2) and 8% for corn (Crop 3) are producing for the sole purpose of marketing their crops. The situation could be primarily due to the average farm size that majority of the farmers are cultivating. Majority (52% for Crop 1 and 61% for crop 3) are utilizing their produce for home consumption only.

(4.3) Magogon Upland Model Project Area

a) Farmers by Age Distribution Group

Most of the farmers (49%) are within the age range of 31-50 years old, closely followed by those in 51-65 age bracket. Only 13% are within the 15-30 years age group.

b) Number of Years Living in the Barangay

Fifty-one (51%) were born in the barangay with 25% coming from other municipalities of Albay.

c) Marital Status of Farmers

Majority of the respondents (95%) are married.

d) Number of Children

Most of the respondents (27%) have the tendency to have 5-6 children while a close second are those with 3-4 children (25%).

e) Total Number of Persons in the Household

Thirty one (31%) percent of the households have 5-6 members while those with 3-4 members are ranked second. There is a strong indication that those household with 3-4 members could be those families with the same number of children as reflected in Item (d) indicating a high dependency ratio in the family.

f) Maximum Level of Education Attained

Access to elementary education has enabled 58% of the respondents to complete this level. There are 7 residents who were able to finish college.

- g) **Languages that Farmers Can Speak**
Eighty-four (84%) are conversant in Bicol and Tagalog while 20% could speak English and Bicol.
- h) **Number of Farmers that Are or Have been Barangay Captain/Councilor**
Only a few (16%) have been involved in formal political organizations in the model area.
- i) **Member of Cooperative/Other Kind of Farmer Organization**
Forty-two (42%) are members of the Cooperative. However a high (38%) percentage said that they have never been a member of any farmers organization.
- j) **Time Dedicated to Farming**
Twenty seven (27%) percent indicated that they are full time farmers while 35% responded that they are part time farmer/part-time farm laborers. The average farmer has the tendency to look for other employment since he is cultivating farm a little less than a hectare, the produce of which is not enough to sustain the day to day family expenses.
- k) **Total Annual Cash Income of Household**
Majority for the respondents (31%) earn an average income of P10-15,000 per year. Others have income of P15-20,000 annually.
- l) **Operating Farm Size and Tenurial Arrangement**
Seventy-eight (78%) percent of the farmers own their farm. Thirty-two (32%) are cultivating farms with an average size of 1.149 has; 25% are tilling farms with a land area of 2-2.99 hectares. Those leasing land are also cultivating farm with the same land area as that of the landowners.
- m) **Number of Crop**
A high percentage (62%) are practicing intercropping while 22% have one main crop and small area of second crop.
- n) **Level of Production**
Quite a number of farmers (73%) for Crop 1 (corn) are producing for home consumption and marketing purposes. Crop 2 (rice) is basically utilized for home consumption only. Production generally is not meant for sole marketing purposes only.

(4.4) **San Ramon Upland Model Project Area**

- a) **Farmers by Age Distribution Group**
Fifty-four (54%) percent belong to the 31-50 age category closely followed by those within the 51-65 (22%) age bracket.
- b) **Number of Years Living in the Barangay**
Most of the farmers (42%) have been born in the barangay. Twenty-six (26%) percent came from other municipalities to settle in San Ramon.

- c) **Marital Status of Farmers**
Ninety (90%) percent of the respondents are married.
- d) **Number of Children**
The trend is to have 3-4 (22%) and 5-6 (22%) children. Sixteen (16%) respondents are even opting to have only 1-2 children.
- e) **Total Number of Persons in the Household**
Most (29%) of the respondents have 3-4 family members closely followed by these with 5-6 household members.
- f) **Maximum Level of Education Attended**
Fifty-four (54%) percent have completed their elementary education. A low percentage (2%) were able to finish their college education while ten (10%) percent have reached college.
- g) **Languages that Farmers Can Speak**
Majority (56%) speak Bicol and Tagalog although 22% are conversant in Bicol only. Fourteen (14%) percent could even speak English and Bicol.
- h) **Number of Farmers That Are or Have Been Barangay Captain/Councilor**
Only 3% of the respondents have been elected to public office.
- i) **Member of Cooperative/Other Kind of Farmer Organization**
A high (65%) percentage have never been a member of any cooperative while 21% responded that they are presently members of farmers' organizations.
- j) **Time Dedicated to Farming**
Only 27% are full time farmers; others have to be engaged in other part-time activities to support their families.
- k) **Total Annual Cash Income of Household**
Fifty-eight (58%) percent have an income of less than P10,000 per year while 18% are earning P10-15,000 annually.
- l) **Operating Farm Size and Tenurial Arrangement**
Ninety-five (95%) percent own or are amortizing their lands. Fifty-five (45%) percent are cultivating lands with a average area of 1-1.49 with 17% of the farmers tilling farms with sizes ranging from 3-4.99 ha.
- m) **Number of Crops**
Fifty nine (59%) percent have two crops in about same area while 23% are planting only one crop.
- n) **Level of Production**
Thirty-eight (38%) responded that they are producing coconut (crop 1) for marketing and home consumption purposes. A great number (33%) also stated that the harvest

is meant for marketing only. Crops 2 (corn) and 3 (rootcrops and banana) are basically for marketing and home consumption also.

8.3 Results of the Farmers' Concerns on Rural and Agricultural Development

(1) Camalig Diversion and Dam No.2 Lowland Model Project Areas

For both consultation and validation survey, there was general consistency on the acceptability of the project with respect to introduction of new concepts and ideas on how to promote rural development (Ref. Tables G 8.1 to G 8.28). The results of the survey are summarized below. In the consultation meetings that were held, the farmer beneficiaries exhibited their desire to actively participate in the implementation of the project. A number of issues and concerns were reflected (Ref. Table G.8 .29).

- An average of ninety-three (93%) percent of the surveyed lowland farmers strongly felt that the stated conditions for the successful implementation of the project can be attained.
- Ninety-seven (97%) percent expressed willingness to give the necessary support for the project implementation.
- Nine-two (92%) percent were willing to allow the right-of-way for the canal construction.
- Exemption from payment of ISF seems to be the more popular compensation scheme for the right of way.
- Government compensation ranked first among the options for compensation of land acquisition for dam reservoir. Resettlement was considered least popular among the options.
- Assistance in the operation and maintenance of irrigation system was mentioned as first priority for the affected farmers. Provision of employment opportunities was mentioned as second concern.
- Seventy nine (79%) percent agree to the proposed irrigation water rotation scheme during dry season.
- Ninety three (93%) percent expressed willingness to actively participate in the canal operation and maintenance.
- Ninety three (93%) percent of the respondents appear to see no problem with the membership of farmers from other barangays in the IA.
- Ninety three (93%) percent perceive as favorable the management and maintenance of the irrigation system with the farmers from other barangay.
- Landowners were cited by thirty-two (32%) percent as those that should comprise the membership of IAs and IGs. Twenty six (26%) percent mentioned owner and lessee/sharecropper.
- The payment of ISF/investment cost amortization is perceived by thirty-three (33%) percent of the lowland farmers as the responsibility of landowners. Twenty nine (29%) percent see it as the responsibility of owner-cultivators and lessees/sharecroppers.
- Eight-five (85%) percent view as acceptable the concept of lessee/sharecropper/caretaker organization as irrigation service agent under the IA or separately.
- Ninety-two (92%) percent were willing to participate in the formation/strengthening of farmers' marketing service cooperative.
- Seventy-four (74%) percent viewed the utilization of the proposed post-harvest facility to be mainly for ISF collection. On the other hand, its operation should be mainly for IA and IG members according to 80 percent of the respondents.

- Solar dryer appears to be the most needed post-harvest facility as cited by 43 percent of the lowland farmer-respondents. Ricemill was also mentioned as a basic requirement.
- Seventy-nine (79%) percent of the respondents agree to the concept of post-harvest facility operation and maintenance by landless farm households. As for the organization to undertake its management, the IAs and IGs were identified as most suitable.
- Purchase of equipment appears as the foremost technical assistance needed for the setting up of the post-harvest facilities. Construction of facilities was ranked second.
- Fifty (50%) percent opined that the site nearest the barangay center would be the most ideal location of the post-harvest facilities.
- Tractors are among the machinery primarily needed to improve productivity.
- Forty five (45%) percent thought the management of the farm machinery should be through the IAs and IGs; whereas its operation condition may be through custom service with charge, as viewed by eighty-seven (87%) percent of respondents.
- The construction of irrigation/drainage infrastructure is overwhelmingly cited by the lowland farmer-respondent as top priority component of the project.

(2) Magogon and San Ramon Upland Model Project Areas

In the upland model project areas, the desire to participate in the implementation of the project was generally met with enthusiasm (Ref. Tables G.8.30 to G.8. 52). The results of the survey are summarized below. A number of issues and concerns were reflected during the meeting (Ref. Table G.8.53).

- Ninety one (91%) percent of the surveyed upland farmers consider the pre-requisites and conditions for the implementation of the project attainable.
- Ninety three (93%) percent will give support for the implementation and operation of the project.
- Ninety (90%) percent will allow the right of way of road construction.
- Ninety (90%) percent are willing to participate actively in the formation/strengthening of farming-marketing service cooperative.
- Sixty-six (66%) percent of the farmers practice intercropping, with 53 percent having corn as the main intercrop.
- Fifty one (51%) percent are willing to plant intercrops.
- Lack of financial resources, time constraints and presence of stray animals were among the reasons cited for the absence of intercrop.
- There is no strong evidence on the presence of groups that have access/priority in receiving government support services.
- Shortage of income and less employment opportunities are two of the main reasons for the outmigration of young residents from the barangay.
- Agricultural enhancement ranks first in the priority requirements for sustainable development of the barangay. Rural infrastructure development and increased employment opportunities were second and third priority.
- While being a major practical issue from a social acceptability point of view, eighty-eight (88%) percent of the upland farmers expressed agreement to the concept of barangay cluster formation.
- Inter-village road appears number one in the priorities for village infrastructure improvement. Potable water supply and rural electrification ranked second and third, respectively.

- Eighty-seven (87%) percent of the respondents are agreeable to the concept of nucleus farming.
- Nearly one half of them were of the opinion that a privately owned area would be a suitable potential site of the nucleus farm.
- For the coconut-based development area, landowners and lessees are cited by thirty-five (35%) percent as those that should compose the membership of the coconut farmers cooperative. Also mentioned in this regard are actual cultivators thirty-one (31%) percent.
- Ninety (90%) percent are amenable to the concept of formation of farmers trust association.
- Fixed rent arrangement is deemed by 64 percent of the upland farmers to be the best form of managing the nucleus farm. Thirty six (36%) percent deemed it to be through land trust contract.
- Seventy-two (72%) percent agree to the concept of collective ownership of the nucleus farm.
- Technical and marketing support were the main government support identified as urgent for the establishment of a nucleus farm.
- Fiber processing, coconut processing, and feed mill are among the economic activities cited that could be managed by the farmers' cooperative.

9. ORGANIZATIONAL AND MANAGEMENT PLAN FOR PROJECT IMPLEMENTATION

9.1 Introduction

The configuration of the WLIRDP presents an opportunity for a localized implementation. The project components in terms of the construction of physical infrastructure facilities and provision of agricultural support and institutional interventions are essentially services devolved to the LGUs. This important consideration is being emphasized to acknowledge the expected role of the LGUs in Albay. It is therefore important to put forward the following principles as guideposts in crafting the organizational and management plan:

- (1) The choice of the executing and/or lead agency must be consistent with the principles of devolution and decentralized management. This principle, however, in no way rules out the intensive involvement of the national agencies. The appropriate mechanisms for coordination should be in place to ensure flawless execution of project activities.
- (2) The project organization should allow the completion of project activities within a defined schedule of implementation. It should permit interventions to be phased-out at designated time without causing serious upheavals and allow the local institutions to continue and maintain the planned activities and facilities established by the project.
- (3) The project organization should reflect the experiences of previous and existing management models, especially those that are working well within the framework of provincial and municipal governments.
- (4) The project organization should reinforce existing parastatal bodies to provide long-term agricultural support services such as extension, credit, and marketing necessary to ensure successful rural development initiatives.
- (5) The project organization should permit the national agencies to support the execution of the planned activities both in terms of technical and financial support and allow the project to benefit from the expertise of such agencies.

9.2 Organizations and Institutions in the Project Area

It is important to cite the various organizations and institutions available in the Project area as such bodies are instrumental in facilitating the execution of planned activities for the project. Spectrally, they are described below:

In terms of local governance, the PGA and MGCD are practically the premier agencies performing the delivery of basic services. Within the MGCD, there also exists the respective barangay governments. Through the local government code the hierarchical delineation of responsibilities by political boundary was established (Ref. Table G.9.1). The PGA has a provincial development plan coupled with a public investment program. The PGA is also responsible for executing inter-municipal project, an example of which is the recently completed Australian-funded project on agricultural extension. The other projects being implemented are mainly infrastructure projects either locally-funded or bilaterally-funded inherited from the national line agencies. The MGCD have also initiated small public infrastructure projects (e.g. public market). The municipality of Daraga is rated as a first class while Camalig is a third class municipality. The classification indicates resources and normally first class municipalities have greater leeway in budget spending. The 41 barangay governments rely on their IRA as the funding source for projects in their community. The types of infrastructure projects being implemented range from construction of multi-purpose

hall, deep wells for potable water supply, multi-purpose pavement and/or basketball court to barangay health stations. In sum, the nature of public investment of these offices is generally bias towards basic infrastructure. This is understandable given the quick impact of these capital investments. Another factor is the unharnessed planning skills of most local officials and hence the generation and execution of projects other than traditional infrastructure is limited.

In the area of agricultural support services, the existing agencies providing direct services can be divided into 5 classes: (a) offices directly affiliated to the PGA and MGCD; (b) specialized agencies attached to the DA, notably PCA, FIDA and ATI; (c) academe, mainly the BUCAF; (d) banking institution, primarily the LBP; and (e) cooperatives and NGOs. An assessment of the capabilities of these institutions is given in Section 2. The MAS provides the direct link to the farmers in terms of giving advice on better farming techniques. This function is likewise being shared by PCA (coconut) and FIDA (abaca). The current extension effort, however, is far from satisfactory primarily because of inadequate resources and inactive local bodies (e.g. agriculture and fishery councils) supposedly created to improve coordination. Similarly, the flow of agricultural credit to farmers with the LBP as the main institution is hampered because of low level of viability of farmers organizations. There is a mismatch between the demand for and supply of funds. An interesting observation, however, is the existence of the SADOPECO which lend its services (marketing and technical assistance) to a primary cooperative, Magogon Farmers Multi-Purpose Cooperative in barangay Magogon which is one of the model areas for upland development.

On agrarian reform, the DAR maintains its regional, provincial and municipal offices in the Study area. It has likewise established several committees up to the barangay level to mediate agrarian conflicts. The most significant problem, however, is the non-completion of land transfer in coconut lands on sizes below 25 ha. The DAR has just started distributing lands of sizes from 25 ha and above, and it may take a few years more before it can complete this work. Two parcels under the VOS scheme covering 81 ha have been distributed in San Ramon, a model development project. In addition, the program on leasehold has not yet been fully implemented. Share tenancy is still common among coconut farms. The implication is that inter-cropping as a way to increase income of farmer beneficiaries may be difficult to introduce in small coconut landholdings. The ARCs are also promoted as a strategy to promote the delivery of support services to ARBs. None of the model areas is covered by the ARCs. However, this will not rule out the consideration by the DAR to eventually declare the model areas as additional ARCs.

On environmental matters, the DENR which has offices at the provincial and municipal levels is the premier agency dealing on natural resource conservation. Some of the regulatory functions of DENR, however, have already been devolved to the PGA and MGCD, particularly on pollution control laws. The implementation of community-based agro-forestry project is also with the PGA and MGCD. Watershed management is under the supervision of the DENR.

On public infrastructure, the PGA and MGCD through the PEO and MEO, are modestly staffed to carry out the construction of facilities such as provincial and barangay roads and bridges, water supply, communal irrigation systems, etc. It is observed, however, that the capability of these offices in planning and construction of communal irrigation system is considered as not yet developed. For WLIRD, the planning was initiated by the NIA which maintains a regional office in Naga city and provincial office in Ligao. With respect to national highways, the DPWH is the executing agency and has its office in Legaspi city.

On rural organizations, the existence of grassroots organizations performing common concerns is available. These organizations are very informal and have no juridical personality, but very active in providing services under the "bayanihan" (collective) spirit. In the maintenance of simple irrigation systems privately owned in barangays Inarado, Comun, Cotmun and Binitayan, for instance, around 20 to 25 farmers in each barangay have grouped

themselves together and collectively operate their irrigation facilities. These groups collect fees (about 1 cavern/ha/season) for the cleaning and repair of canals as the need arises.

The barangays have their own set of officers and councils whose memberships include the youth and adults as well. The council oftentimes assume the responsibility of running water users associations which have become inactive. This is the case in Barangay Taladong. It should be noted that water users associations have been formed in barangays covered by Level II water supply. In view, however, of the weak structure of these organizations coupled by the non-follow up of technical support from concerned agencies, the associations dissipated. On the contrary, the water users association in Gotob is doing well in terms of maintaining the facility, including the collection of water fees. From one barangay to another, the level of activeness of such associations vary. This points out the problem of leadership and cooperation among members.

From the above, there are a number of institutions which can facilitate project implementation. What is apparently needed is to have an inter-disciplinary body capable of coordinating the activities of the various institutions and improve as well the level of absorptive capacity of such institutions. This is by no means an easy task and will certainly require adjustments in the existing structures of concerned LGUs in the Study area.

9.3 The Existing Administrative Framework of Relevance to the WLIRDP

The project components of the WLIRDP essentially comprise of construction of communal irrigation systems; improvement of provincial and barangay roads; rehabilitation of Level-II water supply; improvement of agriculture in lowland and upland farming; and strengthening of agricultural extension support and rural and farmers organizations to cover both hardware and software elements. In addition, the political boundaries of the project cover 2 municipalities of the Province of Albay. By virtue of the local autonomy act (RA 7160) all of the above activities have been devolved to the LGUs. The local autonomy act has given broad powers to the LGUs with respect to control and authority over execution of public infrastructure projects as well as delivery of basic services, including regulatory functions. Among other things, such transfer of responsibilities from the national line agencies to the LGUS are:

- (1) Provision of basic services and facilities
 - Construction of locally-funded public works and infrastructures
 - Construction of nationally funded school buildings and hospitals
 - Provision of social services
 - Development of tourism
 - Provision for housing
 - Implementation of community-based forestry projects
 - Health services
 - Agricultural extension and on-site research
 - Provision of telecommunication services

- (2) Transfer of regulatory functions
 - Reclassification of agricultural lands
 - Enforcement of environmental laws
 - Inspection of food products
 - Provision of quarantine services
 - Enforcement of national building code
 - Licensing and approval of subdivision plans
 - Establishment of amusements

- (3) Institutionalization of linkage between GO and NGO
 - Membership in local councils
 - Private sector participation in the delivery of basic services
 - Joint NGO-LGU undertakings
- (4) Increased fiscal powers
 - Powers of taxation
 - Increases in IRA
 - Direct sourcing of foreign assistance without the need of national government concurrence

The above mandate, however, in no way rules out the intensive participation of the national agencies in the execution of vital infrastructure projects at the local level. As a matter of practice and to the extent that the LGUs have not yet strengthened their absorptive capacities, the national agencies have still been relied upon by the LGUs as the source of technical assistance. Notwithstanding this arrangement, the LGUs through the local chief executives have practically the final say with respect to the management of local affairs.

Thus, given the current socio-political context vis-a-vis the proposed configuration of the WLIRD, the ideal administrative framework for the execution of the project components is to situate the project organization under the ambit of the PGA.

9.4 Constraints

- (1) Absorptive capacity of the LGUs and other local bodies. The pressing constraint is the inadequate skills in general management, engineering and infrastructure capabilities. The PGA's track record in implementing rural development projects is rather limited. It can cite only a few projects. One example is the Australian-funded agricultural extension project terminated early this year. It has also inherited devolved public infrastructure projects funded by bilateral donors. These projects, however, are sectoral in nature and were executed as single component. It can thus be argued that the PGA's experience is far from perfect. The experiences of the MGCD are virtually negligible. The local institutions as described above also suffer from the same fate. There will surely be a learning process to take place before the level of absorptive capacity of these institutions can reach satisfactory levels. This condition should not in any way, however, preclude, the LGUs in planning and implementing the WLIRD. On the contrary, this should be taken as an opportunity to hone their skills in managing rural development projects.
- (2) Internal Coordination Within and Among the LGUs and National Line Agencies. The level of coordination with respect to economic plan formulation at the regional and provincial can be said to be more than satisfactory. The regional plan is generally well conceived. The provincial plan of Albay together with its investment program is generally consistent with the regional and MTPDP. This is due to the influence of the NEDA Region 5 office which has traditionally demonstrated its distinctive competence in coordinating planning activity coupled by a very competent staff serving as secretariat to the RDC. At the municipal level, however, this is not the case. In the two municipalities covered by the WLIRD, only the MGD has come up with a socio-economic plan. It is a not a perfect plan but the priorities of the municipality are at least documented.

The more pressing concern really is the coordination on the execution of undeveloped services. It is a common observation to see the offices directly attached to the PGA and MGCD to be rather reactive instead of being proactive in this situation. In the area of agricultural extension and research, as in the case of the MAS, they can not

influence the activities of the DA's specialized agencies. Under the CARP program, there is also little coordination between the MARO and MAS at the municipal level. The coordination becomes only active as the need arises. There are special local bodies created to look after this concern, but unfortunately such bodies are non-functioning. The need to reactivate and reorient their activities is deemed urgent.

- (3) Resources of the LGUs. The resources of the PGA and MGCD in terms of funds are rather restricted. This is critical because the central element to sustainable development is providing the much needed funds to carry out developmental activities. For these offices to be effective implementors, they have to augment the money, normally the IRA, they receive from the national government. It is therefore incumbent for the concerned local chief executives to source additional funds and use prudently their fiscal powers to raise the necessary funding support.

9.5 Proposed Organization to Implement the Project

It is very clear from the above that the implementation of the WLIRDP will be vested within the framework of the PGA. It is proposed that an organizational body directly affiliated with the PGA will be established. The proposal is to call this body as the Western Legaspi Rural Development Project Office directly attached to the PGA. There are 2 structures central to the organizational framework (Ref. Fig. G.9.1).

- (1) The Inter-Agency Project Coordinating Committee (IAPCC). The IAPCC is proposed to be the policy-making body which will resolve policy issues affecting project implementation. It will discuss and approve work plans and budgets for the project. The IAPCC is proposed to be chaired by the Provincial Governor and its members should be high level staff (regional director) or local chief executives from agencies providing staff support and directly participating in the execution of the project. It is proposed that the membership, as shown in Figure G.9.1, may be expanded depending on the exigency of the service of an agency that may be called upon by the chairman.
- (2) The Project Management Unit (PMU). The PMU will be the implementing organizational body (Ref. Fig. G.9.2). Its existence is time-bound and co-terminus with the envisaged activities of the project. It will be run by a professional and competent project manager. The PMU will be staffed with middle-level personnel, preferably drawn from the various offices of the PGA and MGCD and other participating agencies so as to ensure continuity of activities the moment project intervention phases out. Personnel detailed to the PMU can continue the activities of the project the moment they return to their mother agencies.

The level of work to be done under the WLIRDP will require a degree of focus. It will do planning, coordination and supervision of assignment. It will also delegate the execution of activities which are not within its competence. It should be emphasized that the delegation of authority does in any way imply outright transfer of responsibility. As far as practicable, activities should be jointly implemented with the concerned agencies as the intent is to make the PMU a training ground for staff of the provincial and municipal offices to strengthen their capabilities in project planning and execution.

For the proposed organizational structure to work, it is important that the following conditions should be met:

- (1) The counterpart fund or budget, the main tool for development, should be made available both as to its size and timing of release. The budget should cover funds for capital outlays, personnel, institutional and interim O and M for facilities established. This should be effectively controlled and managed by the PMU. Releases and disbursement of funds will be made by the PMU.

- (2) The incentives for detailed personnel to the PMU should be made available to encourage enthusiasm and dedication among the staff given the rural development nature of the project. The salary scale for its staff should be competitive to attract the best people. Allowances and honoraria should be made available for detailed personnel.
- (3) The activities should be as transparent as possible to avoid any misconception about project transactions. This calls for strict monitoring and supervision of project activities.

9.5.1 Divisional Responsibilities

1. Engineering Division

The activities will cover construction and supervision of irrigation, rural roads, water supply, flood control and drainage and other civil works associated with the project. This division will work closely with the NIA for the irrigation component; the PEO and MEO for roads and water supply; and flood control and drainage with the DPWH. It is suggested that an appropriate working arrangement between the PMU and NIA be made so that expertise in irrigation planning and construction can be transferred to the concerned provincial and municipal offices. The NIA, being the premier irrigation executing agency, is suggested to lend its technical engineers under a mutual agreement with the PMU through this division to train the people assigned in the project. Such arrangement can take the form of technical advice and construction supervision from the NIA where the efforts of the agency will be properly compensated under existing government auditing rules. It is thus important that the staff to be detailed in this division should be professional engineers from the provincial and municipal governments.

The division should be managed by a senior professional engineer. As most of the construction activities will be completed within 2 to 4 years, its personnel should immediately phase-out and go back to their mother units. Maintenance work is expected to be limited as this activity will be the responsibility of the farmers' organizations, notably the ISAs and water users associations. Notwithstanding this, it is important that during construction, the staff should also be given enough training on maintenance work so that the farmers' organization will be properly guided even after project activities have been terminated.

2. Agricultural Support Division

The agricultural support division will be responsible primarily in the improvement of the delivery of agricultural extension. The main activities will include conduct of agricultural training for municipal extension agents and BEAs, establishment of demonstration farms in 4 model project areas, establishment of nucleus farm and nursery; establishment of post-harvest complex, land and soil conservation work, and providing an extension program on improved farm practices and water management. This division will see to it that equipment needed to rehabilitate the BUCAF and the municipal training centers are properly allocated and installed to such institutions.

The division will be managed by a senior agriculturist to be assisted by staff from the PAS, MAS, FIDA, NIA and other offices of the DA which may be deemed as important in assisting the project. The core staff of this division is recommended to come from the MAS as such personnel represent the direct link to the farmers. It is also suggested that the MAS personnel will be intensively trained and fully equipped with facilities to improve their mobility for greater access to farmers and better coordination with the other agencies.

2.1 Conduct of agricultural training and extension

The conduct of agricultural training will be jointly done with the FTC and BUCAF based in Guinobatan, Albay. The equipment to be provided by the project should be adequate to train the staff and beneficiaries of the project. The proposal is to train the municipal extension agents at the FTC which in turn will become the trainers (Ref. Fig. G. 9.3). The trainers will eventually be the ones to directly teach the farmers. It is proposed that the existing farmers training center in Daraga and another to be established in Camalig be utilized to accommodate minor training needs of the farmers in the 4 model project areas.

The training will be a continuing activity following the cycle of cropping calendar developed for the 4 model project areas. It is suggested that the training modules be designed by the FTC/BUCAF based on the agricultural program of the model project areas. The following training needs will be considered:

Lowland Model Project Areas

Paddy Rice

- Land preparation
- Optimal sowing and harvesting
- Fertilizer application
- Seed production and storage
- Plant density
- Treshing
- Drying

Upland Model Project Areas

Magogon Area (Corn, Coffee and Poultry)

- Land preparation
- Harvesting
- Fertilizer application
- Seed production and storage
- Contour farming- Strip cropping
- Treshing
- Drying
- Shelling

San Ramon Area (Abaca)

- Propagation method
- Plant density
- Fertilizer application
- Contour farming
- Strip cropping
- Stripping

The organization of barangay extension agents (BEAs) is a mechanism to be introduced in the Project area to increase the frequency of contact to farmers. This is a basic weakness of the existing extension delivery. The BEAs are volunteer farmers from the respective farmers organizations in the model project areas and will be designated as key contact farmers in the 4 model project areas. In Camalig and Dam No.2 model areas, the BEAs will have their trial plots on their own farm lots and this will be used as applied learning centers. There are 14 barangays covered in both areas and it is suggested that one BEA be designated per barangay, a total of 14 BEAs. In Magogon area, the same arrangement will be followed although the assignment of the BEA, to be selected among the cooperative members, will be rotated. This is consistent with the envisaged plan for Magogon to rotate the cultivation of corn to prevent further soil degradation. This means that every year a new BEA will be designated. In the San Ramon area, the demonstration farm will be the nucleus and production farms. One (1) BEA will also be designated to be the outreach agent for abaca production. The demonstrations conducted by the BEAs on their own farm plots are essential to prove that recommended new practices are sound and can be applied by the normal farmer. With the BEAs, it is expected that more farmers will be covered compared as before because of improved accessibility. The BEAs will be provided with basic inputs such as fertilizers, seeds, extension kits, etc. to be used as training materials. Co-farmers will be brought to these demonstration farms through cross and field visits to be able to adopt and practice the improved farming models presented.

For the BEAs to become effective extension agents at the barangay level, they will undergo basic and applied training. It is suggested that they undergo lectures and discussion for one day every two weeks either at the municipal training center or in BUCAF/FTC. They should be assisted to set up the trial plots, especially in the lowland model areas. In return they

should be available for consultation by their co-farmers on alternate market days. Once the BEAs have acquired the necessary skills, they are expected to be permanent liaison of the municipal extension agents in providing extension work at the barangay level.

2.2 Post-Harvest Operations

Post-harvest facilities will be made available to the farmers in the 4 model project areas to improve the quality of farm produce (Ref. Post-harvest and marketing). The O and M of these facilities should be taught properly to the farmers' organizations. It is expected that FTC/BUCAF will again be the main venue of training the designated representatives of farmers' organizations. Actual demonstrations will be done at the barangay level through the municipal training center in Daraga and/or Camalig. This division will also make arrangement with private institutions for on the job training. In the case of the San Ramon upland model project area, ALINDECO will be relied upon to introduce the use of abaca stripping machine. Other private companies expected to be linked up with the farmers organizations in the 4 model project areas will be tapped for their marketing services.

It is suggested that the facilities will be initially maintained by the project. As soon as the respective farmers' associations are ready to operate such facilities, the ownership will be transferred to them. It is therefore important that initial maintenance fund will be provided by the project, and be recovered through an appropriate cost recovery scheme.

2.3 Nursery

A nucleus nursery will be established in San Ramon model project area for the propagation of shade, fruit trees and abaca seedlings. This will be jointly established with the farmers' organizations established in the said area together with the ALINDECO and FIDA. Another one will also be established in Magogon area under a similar scheme to be jointly established with the Magogon Farmers Multi-Purpose Cooperative. As in the other facilities, the nurseries will be maintained by the farmers' association in San Ramon and Magogon model project areas. Initial investments in the form of water supply, seedlings, sprayer and other equipment will be provided under the project to be repaid by the farmers associations as soon as these facilities start to provide revenues.

2.4 Soil conservation

Soil conservation practices will be implemented in the 2 upland model project areas. This will be part of the demonstration activities to be considered. Initial investments for bench and/or contour terracing will be provided by the project. To be able to sustain this activity, which is very critical in the long-term, it is recommended that a sub-unit within the soil and water management section of the PAS and MAS be established to continue on a wider scale the activities on soil conservation initiated by the project. Presently, the soil and water management section does not have any distinct activity on soil conservation. Watershed management in Dam No. 2 lowland model project area will be intensified to protect the watershed.

2.5 Establishment of Municipal Training Center in Camalig

A municipal training center is proposed to be established in Camalig, the cost of which will be funded out of local counterpart funds. The building should be completed before the equipment to be provided by the project will be installed. There is no major problem foreseen in Daraga as it has already an existing training center. All it needs is minor repair and rehabilitation. Effort should also be made to finish such rehabilitation work before equipment will be delivered and installed.

2.6 Other Facilities

All other facilities to be provided by the project and be given to the farmers associations will be repaid. It is important that this division should design an appropriate cost recovery scheme so that all amortization payments will be plowed back to the concerned LGUs.

3. Institutional Development Division

The activities of this division will essentially cover the establishment of new farmers' organizations in Camalig, Dam No. 2 and San Ramon model project areas; strengthening of the existing cooperative in Magogon model area and water users associations in Gotob, Taladong, Gabawan, and Inarado; coordinating with other agencies relative to assisting the farmers associations in accessing agricultural credit and markets; and conduct of training and seminars for the PMU staff and other participating agencies.

The division will be managed by an institutional or human resource development staff, preferably with extensive exposure in community organizing. It is proposed that personnel of this division should come from the NIA, PAS and MAS, especially those who have worked in similar activities.

3.1 Institutional Aspect of Rural and Farmers' Organizations

New dimensions will be introduced in the formation and strengthening of farmers' organizations to improve their viabilities and delivery of service. This will involve the participation of the so-called landless (tenants, caretakers, etc.) comprising about 60-70% of the households in the project area. A new organization specializing on providing services in both the lowland and model areas will be organized. This will eventually be service cooperatives. About 90% of the respondents in the upland model areas have indicated their willingness to form this association (Ref. Section 8). The involvement of this group will permit opportunities in terms of job generation and specialization of functions in the community. Another aspect is the formation of coconut landowners associations (i.e. absentee and non-cultivator) who will simply assign the cultivation of their farms to a cooperative under a trust agreement. Some 80% of the non-cultivator respondents in the upland model areas have considered this arrangement as acceptable (Ref. Section 8). This will be a positive step towards intensification of coconut farms in the upland.

3.2 Establishment of New Farmers' Organizations in Lowland Model Project Areas

The existing mode of organizing the IAs in Camalig and Dam No.2 model project areas will be modified as the traditional approach suffers from serious flaws. In fact there are no juridically organized IAs in the 2 lowland model project areas. However, there exists informal irrigators group in Dam No. 2 model project area and very small group in Camalig model project area. Hence their recognition into a formal organization is a necessity given the responsibility of amortizing and maintaining the communal irrigation facilities constructed.

The IAs are traditionally viewed as collecting agents with minimal business perspective. Several existing communal IAs nationwide are slowly disintegrating in view of organizational and management problems. The low collection of ISFs (an average of 20%) and poor maintenance of the facilities are indicative of the seriousness of the problem. Although developing the IAs to become business entities is easier said than done there must be a way to break the vicious circle of undevelopment.

The proposal, as shown in Figure G.9.4, is to spin-off a new organization exclusively performing a service. This will be called the irrigators service associations (ISAs), and the original IAs will now be called irrigators beneficiaries associations (IBAs). The ISAs will be service organization eventually to become a service cooperative. The majority members of the ISAs are the landless who are believed to represent a sizable proportion in the project area (about 70% of total farm households). This participation in effect allows this group to have

permanent economic opportunities. All services relative to collection of ISF, water distribution, canal maintenance and operation of post-harvest facilities will be handled by the ISAs. The IBAs, on the other hand, can undertake production enhancement activities. The new approach will allow specialization of activities. While before the IAs were made to perform everything, this time, however, most of their functions and responsibilities will be delegated to the ISAs.

The establishment of the ISAs, a new departure from the traditional organization of IAs, has a basis. In the survey conducted among the sample respondents in Camalig and Dam No.2 model project area, favorable response was received relative to the formation of such organization (Ref. Section 8). The ISAs and IBAs will have to be organized prior to actual construction work. The timing of organizing will be based on the construction of the irrigation facilities as shown in the implementation schedule (Ref. Implementation schedule). It is suggested for each ISAs, sub-ISAs will be organized by individual and/or cluster of blocks in each model project area. There are 29 and 39 blocks in Camalig Diversion and Dam No.2 lowland model project areas, respectively. The number of farm households corresponds to about 1,000 per lowland model project area. The sub-ISAs will elect their respective heads to form the composition of the board for each ISA. The board in turn will elect its own set of officers. It is suggested that the structure of the ISAs will have a semi-corporate charter and the activities will be treated as profit centers. The same structure will be adopted for the IBAs.

The social preparation needed for these groups will certainly be a long process. It is not simply a matter of organizing them but seeing to it that at some point in time, they will become full-fledged cooperatives managed as business entities. It is recommended that the process of developing these organizations, especially the ISAs should at least be 2 to 5 years depending on the absorptive capacity of the organizations and financial resources. A reputable NGO should be contracted out to handle the social and business preparation of these groups. It is highly suggested that the NGO should immerse with the organizations and preferably stay in the area until such time that the associations are ready to assume their normal functions. While an NGO will be required to nurture these associations, however, the extension service should be equally intensified. The PMU through this division and NIA are suggested to work closely with the NGO in the technical aspect of training on water management and distribution. The NIA has demonstrated its competence on this work.

3.3 Strengthening of the Farmers' Organization in Magogon Upland Model Project Area

The Magogon Farmers Multi-Purpose Cooperative is proposed to be the main institution to be strengthened in Magogon area for the promotion of upland corn-based farming. The cooperative has 38 members, mostly small landowners whose main crop is corn. The financial performance of the cooperative, based on its 1995 financial statement, revealed the following: current ratio of 1.15; net worth of 14,000 pesos; and net loss of 12,000 pesos. By standards, the financial performance is not that impressive. The cooperative also maintains a loan account with the LBP of about 90,000 pesos used for corn production. The cooperative also used to have an existing marketing tie-up with SADOPECO, a federation located outside of the project area. While the cooperative indeed suffers from these weaknesses, it can nevertheless be reinforced to become a viable organization.

The proposed strengthening for the Magogon cooperative will depart from the usual live-in and lecture classes. The proposed framework of strengthening is given in Figure G.9.5. It is recommended that the PMU will select an appropriate management firm or a reputable NGO to assist the cooperative, not necessarily limited, in the areas of basic accounting, cash management, leadership and other basic management courses. The appointed management firm will train the cooperative and install the necessary control system. It is highly suggested that the cooperative should professionalize its management by appointing professional manager and staff instead of relying on the services of its members as officers. On enterprise development, it is suggested that SADOPECO be tapped to lend its services under a mutual arrangement where the Magogon cooperative can renew its marketing tie-up with the

federation. The Magogon cooperative can learn from the experiences of the SADOPECO in managing business enterprises.

It is suggested that the Magogon cooperative will maintain the facilities to be put up in the model farm, among which are nucleus farm, nucleus facilities, notably post-harvest equipment and other facilities such as the handicraft sub-center. It is therefore important that the cooperative will also designate and select the BEAs who can continuously carry out the agro-farming techniques being introduced under the project. In addition, the cooperative should increase its current membership to be able to augment its Capital Built-Up and be readily eligible under the various financing program for cooperatives of the LBP.

A basic scheme that is suggested for the cooperative to be able to increase its CAPITAL BUILT-UP is to organize the landless within the Magogon and affiliate it as part of the cooperative. The new membership should increase the capital base of the cooperative to be able to handle its future activities. One such activity is to enter into a trust agreement with coconut landowners association to manage the farm of these absentee landowners. The cooperative can pay a fixed rental for the use of their lands. The formation of coconut landowners association met a favorable response in the survey conducted in the Magogon upland model project area (Ref. Section 8).

3.4 Establishment of nucleus farms in Magogon and San Ramon Upland Model Areas

The concept of a nucleus farm is proposed to be established in Magogon and San Ramon areas, the 2 model project areas for the uplands. The nucleus farm cum nursery, including the post-harvest and other facilities is planned to be operated collectively by the farmers' organization. The concept per se as gathered in a survey among 69 respondents conducted in the upland model project areas indicated 87% acceptance. A high percentage of 81% among the same respondents favored collective ownership of the facilities provided under the nucleus farm (Ref. Section 8).

The idea of introducing the nucleus farm stems from the need to have economies of scale relative to the provision of farm support and other ancillary services. Intensive farming, especially inter-cropping in the uplands is by no means easy to introduce unless there is focus of support services to the farmers. This is also true with integration of other farming business. The current practice of delivering agricultural support services characterized as fragmented and piece-meal has only exacerbated the worsening condition of the upland farmers. Productivity of the farms is gradually deteriorating because of unabated soil erosion. To remedy this situation, a concerted effort among the farmers will have to be encouraged by bringing them together to work under the guise of a nucleus farm. While the nucleus farm will be established, this will not prevent the individual farmers to cultivate their own farms. As a matter of strategy, the idea will initially be introduced on a small scale, about 1 to 3 ha-farm, and will gradually be expanded until its spill over effects to the outlying areas are felt by the farmers. The key to a successful nucleus farm is that it should be operated as a center for profit generation and technology dissemination. Otherwise, it is bound to disintegrate. This underscores the need to have strong and viable farmers organizations.

As planned, the nucleus farm to be developed in San Ramon is a CARP area of two land parcels. The first parcel of 44 ha with 23 CARP beneficiaries has already been distributed under a mother CLOA. There is, however, an available 8-ha lot reserved for future distribution. Roughly 3 ha of this parcel will be developed into a nucleus nursery (production farm) for abaca seedlings. The other parcel of 37 ha with 26 CARP beneficiaries has not yet been distributed. This will be the area, around 1.5 ha, where a nucleus farm will be established. The proposed nucleus farm in San Ramon will be planned by reconfiguring the existing boundary survey of the farm land. The main purpose is to demonstrate proper allocation of farm lots based on a system of productivity potential rather than the arbitrarily imposed grid network resulting in form lots with boundary lines running along steep slopes. This approach is expected to improve the manner by which the DAR will subdivide estates in

the uplands for distribution to CARP beneficiaries. The Magogon nucleus farm will be established in one of the farm lots owned by a cooperative member.

3.5 Establishment of Farmers Organization in San Ramon Upland Model Area

Figure G.9.6 shows the scheme of farmers organization in San Ramon model area. A CARP beneficiary organization will be formed to manage the nucleus farm for abaca production. In addition, landless farmers in nearby blocks will be organized to manage the proposed nucleus abaca nursery, including other services. This association is similar to the concept of the ISAs.

A significant proportion of coconut lands is owned by absentee landowners or non-owner cultivator in San Ramon area. The formation of an association among this group generally met a favorable response with 80% of the owner/non-cultivator respondents considering it as acceptable (Ref. Section 8). This will be a positive step towards intensive cultivation of coconut farms in the upland. The barriers to inter-cropping in coconut lands are expected to be minimized as the landowners will also be assured of income in terms of fixed rentals. The coconut landowners association can assign the cultivation of their lands to the landless farmers association under a trust agreement where the latter can pay fixed rentals for the use of the former's farms. The landless farmers association can manage the farm under a nucleus arrangement. This will be a new dimension of farmers organizational linkage in the upland model project areas.

3.6 Strengthening of Rural Water Users Associations

There are 4 barangays to be covered by the Level II rural water supply component of the project: Taladong, Inarado, Gabawan and Gotob. Of the 4 barangays, only Gotob has the most active and dynamic water users association. The 3 other barangays have their respective water users associations but the current conditions are far from satisfactory. The water user association in Taladong is practically dead. Its functions have been taken over by the barangay council. In Inarado, the water user association, organized in 1983 with 99 members is still intact but ceased in collecting water fees since early 1996 because of problems ranging from limited water supply, pilferage to lack of discipline among consumers (e.g. illegal connections). In the case of Gabawan, it is even worse as the water user association is virtually non-existent. The case of Gotob is rather an exceptional organization. It has a very strong organization with full cooperation among the members. There is a plan to introduce volumetric system of water usage to be able to collect the exact price of water consumed.

As the water users associations will be responsible for the maintenance of the water supply to be rehabilitated, hence the viability of these associations cannot be overemphasized. The need to reactivate the associations in Taladong, Inarado and Gabawan is strongly suggested. Providing the necessary technical support in terms of training and actual maintenance should be made by this division. With respect to improving the capability of the association to manage and operate the system, the experiences of Gotob should be considered as a model. It is recommended that the people running the Gotob water users association should serve as trainers for the 3 barangays and replicate the system which is working well in Gotob to the 3 barangays.

3.7 Coordination with the LBP for Agricultural Credit

There are two (2) types of credit that will be needed in the project, namely: working capital or short-term for seasonal production, trading and agro-cottage industries; and long-term for financing for on-farm investments. For the beneficiaries to have access to these credit, it is recommended to establish a special lending window to be managed and administered by the LBP. The PMU should establish a seed fund and this amount will be matched by the LBP to constitute the credit fund for onward lending to the farmers' organizations. It is suggested that this division will assist the ISAs, Magogon Farmers Multi-Purpose Cooperative and other landless farmers' organizations established under the project to access to the LBP for

financing the credit requirements of the beneficiaries. The institutional development division will jointly prepare the proposals with the farmers organizations and also screen and evaluate the eligibility of each borrower. It is very important that since no individual borrower can access to the LBP, the organizations must be financially viable. This underscores the importance of strengthening the ISAs and other farmers organizations.

3.8 Marketing

The availability of markets is important in motivating the farmers to produce quality and regular supply of farm produce. While the ISAs and the cooperatives will handle the marketing of their produce, it will be helpful if this division can provide market information on prospective buyers, prices and volume required. It is suggested that this division will link the farmers associations with potential buyers. Market sourcing will thus be a major activity of the institutional development division. A number of these activities will be performed by the farmers organizations in the 4 model project areas.

The other aspect of marketing is in the supply of major agricultural inputs. The ISAs and the cooperative can do a good service by providing these inputs to their members. Bulk purchasing is suggested and financing can be tied-up with the LBP to avail of discounts from reputable suppliers.

4. Planning and Monitoring Division

The planning and monitoring division will be responsible for instituting control relative to day-to-day operations of the PMU. Its main activities will include preparation of quarterly/annual work plans, monitor progress of work and expenditures and conduct impact and evaluation studies. The planning and monitoring division will also serve as secretariat to the IAPCC. The division will be headed by a senior development economist with staff to be drawn, preferably from the Provincial Planning Development Office.

5. Administration Division

The activities of this division will include preparation of budgets, record keeping of budget, personnel, expenditure and other accounting records, procurement of supplies and equipment and other general services. The division will be managed by a senior administrative officer to be assisted by accountant, budget and finance personnel.

6. Farmers' Committee

The farmers committee will be composed of selected farmer leaders duly selected by their co-farmers to advise the PMU on issues pertaining to execution of project components as they affect their livelihood. The creation of this committee is consistent with the policy on participatory approach. Through this committee, the resolution of sensitive issues such ROW, relocation, just compensation for damaged/acquired properties, water rights, etc. should be facilitated. It is suggested that membership to the committee should preferably be the president and/or chairman of duly recognized farmers organizations, including the water users associations. It is further recommended that the membership should be rotated annually and its secretariat will be the institutional development division.

9.5.2 Project Administration

1. The Role of the IAPCC

The IAPCC is the highest policy making body of the executing agency. It is therefore important that whatever decisions reached by the IAPCC should be considered final and executory. It should decide as a collegial body. Being a policy making body, no one among its members should intervene in the current operations of the project, particularly the PMU. One of the most important tasks of the IAPCC is the approval of the counterpart budget.

Prior to construction work, it is also necessary for the IAPCC to appoint a competent project manager to the PMU.

2. The Project Manager

The project manager is responsible for the day-to-day operations of the PMU, which is the executing body. It is therefore important that the project manager should have had considerable experience in operations work. The qualification should be a senior professional engineer or rural development planner with extensive experience in the implementation of rural development projects.

3. Operation and Maintenance

The concerned agencies responsible for operation and maintenance of facilities constructed is given in Table G.9.2

4. Personnel Complement

The staffing pattern and financial requirement of the PMU is given in Tables G.9.3 and G.9.4. As explained earlier, the staff composition will be mostly detailed personnel coming from the participating agencies. Only those personnel who will be hired will require new budgetary outlay.

9.5.3 Project Implementation Schedule

1. General Activities

The implementation of the project, as shown in Figure 9.7, is estimated to be completed in about 5 years. The first year will be mainly for setting up the organizational structures for project execution and information dissemination through public consultation with the farmer beneficiaries. The second year will be devoted to: planning and design work for the infrastructure facilities to be constructed, notably the irrigation and rural road facilities; installation of post-harvest facilities in the upland model project areas and equipment for the use of training agricultural extension agents and farmers; and establishment of new farmers' organizations. The construction of the Camalig Diversion weir and Dam No.2 irrigation component will begin in the middle of the third year and it is expected to be completed until the last quarter of the fourth year. The third and fourth years will focus on the construction of the major infrastructure facilities. The same schedule will also coincide with the institutionalization of farmers' organization and intensive training for both the farmers and extension agents. This activity will continue until the end of the project. The fifth year will begin the inter-phasing of the different stakeholders of the project. This is where the institutional component of the project becomes critical. Hence it should be emphasized that this is not a static phase but rather a continuing activity. Even beyond the project's implementation schedule, there should be efforts to continue strengthening and training the farmers and farmers' organizations to introduce them to the dynamic state of modern farming and agri-business. After the project phases out, the mechanism to continue the activities initiated under the project and maintain and operate the facilities established must be sustained. This is the essence of setting up the PMU and the manpower complement coming from the various participating agencies. These staff are expected to continue the activities of the project the moment they go back to their mother agencies.

2. Participatory Approach in Rural and Farmers' Organizations

The issue of organizing the proposed farmers' organizations is very critical to the long-term viability of these institutions. The process and what structure these farmers' organizations should follow are elements that will answer the question of how the farmers' organizations will function effectively. The approach is clearly depicted in Figure G.9.8. In addition, the proposed linkages have been discussed in the preceding sections. Note that there will be a

matching of the timing of the physical activities of the WLIRD relative to the formation of the ISAs, IBAs, CARP beneficiaries, landless associations and water users associations. Second, the participatory nature will cover the entire spectrum of activities from pre-organization to the integration phase as such there will be an active involvement of the community not only in planning, policy-making but in execution as well (Ref. Figure 9.7). Through this means, it is expected that conflicting interests will be minimized. Third, the farmers' organizations will be designed to have a semi-corporate charter as the activities such as operation of production and post-harvest centers, nucleus and production farms and collection of ISF/AF, etc. will all be treated as profit centers. Although the plan is to eventually see these organizations as full-fledged cooperative in the future, the key to their viability and cohesiveness is that they should earn modest profit and deliver quality service to their members. To realize this, professional and skilled staff by initially detailing volunteer graduates from the BUCAF university to nurture participating agency in project execution. The integration phase will witness the transformation of the farmers' organizations into mature cooperatives. This is where the integrated support services project becomes relevant.

9.6 Implementation Issues Requiring Further Attention

- (1) Displacement of 22 houses in dam No. 2. The construction of the dam No.2 will involve the inundation of 40 ha involving around 22 houses in barangay Lacag. This is going to be a sensitive issue despite the tremendous benefit that the dam no. 2 is expected to offer. The consultation held with the affected families who are mostly landowners indicated in general their willingness to be compensated for the damaged properties. The tenants (about 3 families) whose only tangible assets are their houses are also willing to be compensated but they should, as a matter of their right, be given lands under the CARP program. It is thus suggested that the DAR should explore the possibility of including these tenants as eligible beneficiary of the CARP in a nearby barangay. The other possibility is to integrate these families in the resettlement area acquired by the PGA for Mayon victims. Accordingly, the PGA acquired around 22 ha in barangay Anislag and the resettlement will require only 8 ha. The program as reported will include core housing and livelihood assistance for the victims which can also be applied to these potential victims.
- (2) Just compensation for Right Of Way. This is an issue given the policy that properties acquired under the communal irrigation system for tertiary canals need not be repaid as such constitutes the equity of the affected farmer-beneficiaries. This policy is not, however, the practice for other public infrastructure project notably provincial and barangay roads. The implementation of this policy under the communal irrigation system will surely face an administrative problem depending on the extent of the property being damaged or acquired. While the IAs will be requested to resolve this issue with their members, the application of this policy need not be rigid. It is suggested that just compensation be applied by substituting incentives to be given to affected farmers. Such incentives can take the form of deferred payment of ISF until the total cost for damages is fully compensated, outright payment of properties following expropriation proceedings for public infrastructure projects, and priority for employment during construction work.
- (3) Cost Recovery for Irrigation Facilities, Post-Harvest and Other Equipment. The investment cost for the irrigation facilities, post-harvest, farm machineries and equipment to be constructed and provided to farmers' organizations will be recovered. The farmers' organizations and/or cooperatives will amortize the investment cost of such facilities. The motorcycles to be given to municipal extension agents should, as a rule, be also repaid. The mechanism for recovering the cost of such facilities within the framework of the provincial and municipal is not yet established. This will probably be the first time that the PGA and MGCD will experience this case. In communal irrigation system, and following the current policy of the NIA, the direct cost of the Camalig diversion weir will have to be repaid by the IAs. In dam No.2, the

cost to be amortized by the IAs will only include the irrigation facilities and structures excluding the dam and its appurtenant structures. It is strongly recommended that the same policy on communal irrigation system as set forth by the NIA be adopted for consistency and sustainability of the irrigation project. Disregarding the NIA policy will create distortion and undue advantage for farmers amortizing their irrigation system with the NIA. Such irrigation amortization payment will have significant impact if reinvested by the LGUs in Albay on irrigation projects in other municipalities. Full cost recovery should also be applied to the other facilities. For purposes of control and accountability, a clear and simple system of collection and remittance should be established so that all amortization payments will be plowed back to the provincial and municipal coffers.

- (4) Subdivision of CARP Coconut Lands/Uplands. There are serious flaws in the current practice that the DAR is awarding lands in the uplands. The manner of awarding on the basis of actual tillage to original occupants creates inequalities as it completely ignores economic potential or productivity consideration. The defects in the current subdivision survey are: arbitrarily imposed grid system resulting in form lots with boundary lines along steep slopes; and parcellation of lots of equal gross sizes but lying on different land forms. This issue is central to the model area in San Ramon and a counterproposal will be introduced to correct this basic flaw.
- (5) Ensuring the rights of the landless. The incidence of landless in the project area is very high. Around 70% of the households are considered landless. Available lands under the CARP for distribution are not that abundant given the problem of hereditary succession and further land fragmentation. The chance for this group of people to be given land is rather limited. But this should not preclude them to participate in the development process. On the contrary, the more that they should be brought into the mainstream of development as this is a matter of right. The formation of landless group into a viable organization and permitting them to render a service to the farmers organizations, IAs and cooperatives should be given due attention. This is an intervention to be introduced in the project.

List of Institutions Visited

Government

1. Department of Agriculture, Region 5
2. Provincial Agricultural Services, Albay
3. Provincial Veterinary Services, Albay
4. Provincial Environment Services, Albay
5. Provincial Government of Albay
6. Philippine Coconut Authority, Region 5 and Albay
7. Fiber Industry Development Authority, Region 5
8. Municipal Agricultural Services, Camalig and Daraga
9. Municipal Government of Camalig and Daraga
10. Department of Trade and Industry, Region 5 and Albay
11. Board of Investments, Region 5
12. Land Bank of the Philippines, Field Office, Albay
13. Development Bank of the Philippines, Legazpi City
14. Cooperative Rural Bank of the Philippines, Camalig
15. Albay Research Center, Guinobatan Albay
16. Bicol University College of Agriculture, Guinobatan, Albay
17. Farmers Training Center, Guinobatan, Albay
18. National Irrigation Administration, Ligao, Albay
19. Cooperative Development Authority, Albay
20. Municipal Agrarian Reform Office, Camalig and Daraga
21. Provincial Agrarian Reform Office, Albay
22. Department of Labor and Employment, Region 5
23. Department of Science and Technology, Region 5
24. National Economic and Development Authority
25. Provincial Agricultural Extension Project

Non-Government Organizations

1. Bicol Development Cooperative Center, Naga city
2. Bicol Small Business Development Institute, Legazpi city
3. Magogon Multi-purpose Cooperative
4. Pambo Irrigators Association, Daraga
5. Santo Domingo Peoples Development Cooperative
6. Ibalon Multi-purpose Cooperative, Daraga