Appendix E-9 BOX Survey

Sociological survey was conducted to find out the backgrounds and root causes of the problems identified. As there may be various and complicated backgrounds that have influenced the happening of even a single problem, the findings were concentrated to only those useful to understand in what way development plans should be considered. More concretely, it was intended that a concept, an approach and direction of development plan should be formulated taking the findings into consideration. The identified backgrounds are classified into several groups according their nature. Among them, socio-cultural and institutional backgrounds are considered critical and further analyzed

The survey team was organized jointly by the Study Team and a sociologist team of Quilino State University. The field survey was carried out through the discussions and interviews with the farmer participants when the workshops were conducted in ARCs.

Box Survey focused on the identification of invisible background of the existing problems in organizations. The Survey firstly clarified what functions of organization have a propensity to be endangered (i.e. critical "box"). It then recognized what sort of phenomena can be observed from each box, and finally, identified the backgrounds governing these phenomena.

Those backgrounds, which bring about both success and failure of organization, sometimes appear where the human resources of organization are utilized as labor, or when an important judgment is sought by the organization. To observe the backgrounds, the interviews to farmers were conducted to get into deeper stratum of the backgrounds. The critical "box" is shown in Figure E-9-1. The interviews were conducted in the following order:

1) Grasp of visible facts regarding the critical "boxes" specified in Figure 2-2-2 by asking the following questions. Replies for those questions are thought as "professed intention":

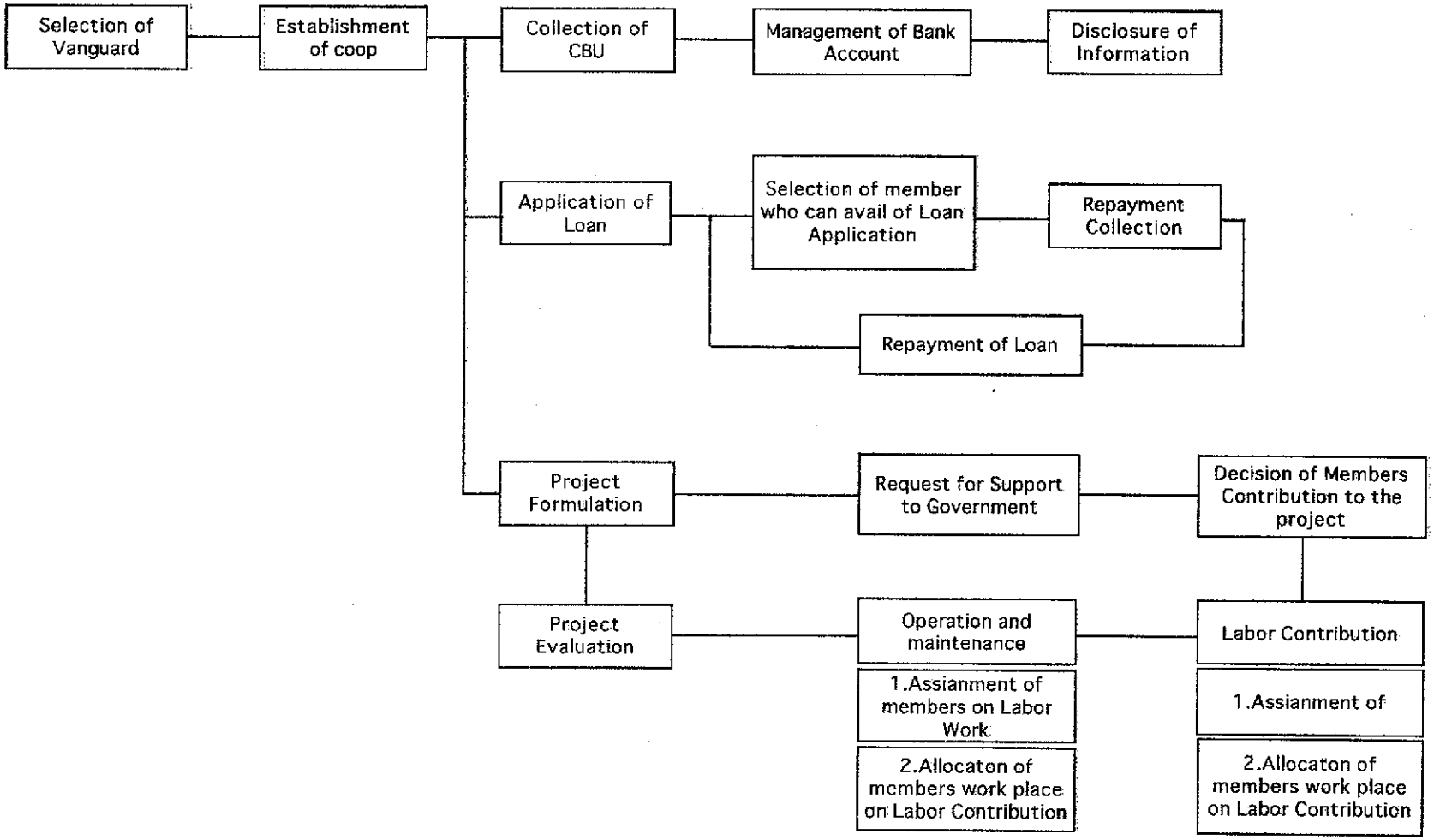
   a) Who is in charge of the contents of the "box"?
   b) For what did the one do?
   c) What are the results of that?

2) As the second step, the following questions were further asked and continued to get into deeper the backgrounds:

   a) Why was the one selected in charge for this matter?
   b) How had the one done?
   c) What was the one's merit (or incentive) by doing so?

Figure E-9-1

"A Portion of Appearance "--Background which Control the Success of Farmers



LAPOGAN MULTIPURPOSE COOPERATIVE
Tumauini, Isabela

Cooperative Category: DCC Result: "KINTARO"

Brief History

The Lapogan Multipurpose Cooperative was organized through the initiative of DA and CDA in 1989. The first Chairman of the Cooperative Mr. Juanito Basilio was suggested by DA because they thought he was qualified over the rest of the residents in the barangay because he finished his first year college and besides, he gives his opinions and reactions to issues discussed during meetings with DA. During his one year term as chairman, his leadership was evaluated by the members and the BOD's as poor as shown by very few members, only 29 of them. During his time, there were no meetings and no assignments given to the different committees. Despite the incapacity of the cooperative to avail of loans in the bank, he still initiated a 50,000.00 loan from the Land Bank and in turn loan this out to the members even without collaterals. Because of this mistake, the members were not able to pay their small loans to the cooperative, thus, an outstanding loan of 29,000.00 in the bank still exist until today. Aside from this mistake, he also suggested from the BOD that incentives be given to the BOD's and the different committees which was disapproved by the BOD since the CBU collection from members was very small which could not be sacrificed for incentives. Because of these observations made by the BOD and some members, they decided among themselves to suggest him to the position of manager so that they can elect for a new active and dedicated chairman. This plan of the BOD and some members came to reality in the next election wherein Mr. Basilio became Manager while Mr. Rogelio Manangan was elected as the new Chairman. Mr. Manangan showed good leadership by being able to convince more people to become members of the cooperative. From 29 to 116 members to date. From thereon, regular meeting were held in the barangay hall since they do not have office yet, the different committees were activated by giving them assignments, and an agreement from the BOD's, and the different Committees was made not to claim incentives yet for doing their job until such time the cooperative is capable of giving incentives. This is the reason why they came up with a strategy of increasing the CBU of every member through the "tutuk saku" system wherein every cropping, each member will given 50 kilos of dried palay for his CBU.

With the good standing of Mr. Manangan, the BOD decided to vote for him for the next scheduled election.

Summary of Results on Phenomenal Facts and Background of the Cooperative

PHENOMENAL FACTS			BACKGROUND		
Who Initiated	**For What**	**Result**	**Why He**	**How Chosen**	**Incentive**
1. Selection of Vanguard					
BOD	*to be the new chairman of the cooperative	There was a new leadership in the cooperative There was an increase in membership from 29 to 116 Good performance of the cooperative and the chairman was liked by the members	He was elected because of his leadership potentials The BOD wanted to maximize his leadership as the barangay captain and chairman of the cooperative at the same time	He was chosen through election	No monetary incentive because of the small fund of the cooperative which is only P61,000.00 in the bank
2. Establishment of the Cooperative					
Initiated by the DA through Mrs. Remedios Rapada of DA	To organize the farmers so they be in a better position to avail of loans from lending institutions	There is cooperation among members. All members are eager to organize themselves	The DA and the CDA chose Mr. Basilio whom they think is knowledgeable as compared with the rest	Chosen by DA through appointment	No monetary incentive and this is the reason for his poor performance. He has no enthusiasm to do his job well
3. Collection of CBU					
The BOD and Manager	To have an initial capital for the cooperative for agricultural loans to the members	Good collection of CBU to members Members takes turn in the agri-cultural loan due to limited fund	It is in the constitution and by-laws of the cooperative	The members suggested the BOD and Manager to do the job	No monetary incentive but they are willing to do the job for the sake of service because not all people work for money alone
4. Management of Bank Account					
Treasurer	For the safe keeping of bank accounts and to obey what is in the constitution and by-laws	Good management of bank account Smooth operation of financial matters	It is the duty of the treasurer to do the job	Appointed by the BOD and Manager	No monetary incentive for the moment due to insufficient funds but their inspiration is hope that if the coop will grow, they will still stay in the position when incentives are available

5. Disclosure of Information					
BOD, Manager and Bookkeeper	To open all information regarding the financial aspect of the cooperative to the members To promote transparency to members	All members are aware of what is going on in the cooperative	It is the duty of the BOD and bookkeeper to give members access to all records	The bookkeeper was chosen by the BOD and Manager to do the job	No monetary incentive but other incentives like social and moral as well as unity among themselves serves as their incentive
6. Loan Application					
Credit Committee	To give equal opportunity to all members to avail of loan	Members feel happy about the procedure	It is the job of the Credit Committee	Credit Committee was chosen by election	No monetary incentive but they are after the growth of their cooperative
7. Selection of members who can Avail of Loan					
Credit Committee	To properly screen loan applicants to see to it that collaterals are available so they will not experience what they experienced in the previous loans of members from the first chairman	Applicants were able to provide collaterals which ensures 100 percent loan repayments	It is the job of the committee to screen applicants to see to it that applicants have collaterals	Credit committee was chosen through election	At present, they have no incentive but with the hope that when the coop is capable of giving incentives, they will be again re-elected to the position
8. Repayments of Collections					
Treasurer	To collect loan repayments from creditors	Smooth operation of loan repayments	It is the job of the treasurer to do the job	Treasurer was chosen to do the job	No Incentive but with the hope of remaining in the position when incentives will be available
9. Repayment of Loans by Members					
Members	To pay their loans to avoid of penalty and to give chance for the rest to avail also of loans as they agreed that loans will be rotated to members	There is a smooth operation of loan repayment of members	It is the duty of the members to pay their loans	Payment of loans is in their constitution and by-laws	The incentive for the members is to avoid penalty

10. Project Evaluation					
CDA	To look into the operation and maintenance of the project	The cooperative was evaluated once	It is one of the mandates of CDA to do the job	The BOD requested for it	Incentives are in kind like chicken, rice or fruits
11. Request for Support to the Government					
BOD and Manager	To enhance development of cooperative for the good of everybody	The cooperative have not requested yet of any support from the government The officials are afraid of availing loans from banks The only government support received is the solar dryers from the DAR given to every puroks	It is the duty of the BOD and Manager to do the request for the cooperative	It is embodied in their constitution and by-laws	No incentive for this because the coop has not requested for support yet from the government
12. Decision of Members Contribution to the Project					
BOD, Manager and Members	To have a common agreement on what project to put up. It is not only the decision of one. The rule of the majority prevails	Mutual understanding between BOD, Manager and members	The BOD wanted to involve everybody in terms of decision making because the members have the obligation to be involved. In cases where decision of members are divided, the rule of majority prevails.	It is the decision of everybody	No incentive for meetings because it is the obligation of everybody to attend and participate in meetings of the cooperative.
14. Operation and Maintenance of the Project					
BOD, Chairman and Manager	For the smooth operation of the cooperative	Members are satisfied and happy about how the cooperative operates and manages	It is the duty of the BOD, Chairman and Manager	Embodied in the constitution and by-laws	No incentive
15. Labor Contribution					
Members	To practice the effective bayanihan system	Projects are easily implemented through the bayanihan approach	The members are the ones involved in the bayanihan work	Volunteerism but physically handicapped members are excused of the manual work	No incentive but it is their desire to let the cooperate grow that pushed them to do their job

RECOMMENDATIONS

1. The cooperative should try to construct an office. This is an indispensable structure in the smooth operation of the cooperative.

2. The officials should undergo training as it was discovered that majority of the officials lacks the technical knowhow in their particular jobs. Among the training needed by them are the following: Management of the cooperative, records keeping and bookkeeping.

3. The officials should be active in requesting support not only from the government but from other NGO, and PO's

4. Encourage or motivate other non members to join the cooperative to make it stronger. The best way to convince other people to join the cooperative is to show the non-members that there is unity and cooperation among members. That members benefit from the cooperative in the following:

   a. Share of stocks of members earn interest and members receive dividends or these is added to their CBU.
   b. Market assistance. The products of the members of the cooperative are put together to have a big bulk of palay so they could bargain for a higher price. When there is a big bulk of palay, the buyers will haul these products instead of the members to bring their products to the buyer.
   c. If there are benefits given by other funding institutions, the members are given priority to the benefits not to non-members.
   d. If the cooperative grow, all members could avail of loans at the same time without draining the fund of the cooperative.

   These things should be explained to non-members. This may help convince them to join the cooperative.

5. The Leaders of the Cooperative should try to avail of loans from the bank so they could use the money to let the cooperative grow. Experience is the best lesson, so that they should not be discouraged from their first experience but the experience should serve as an eye opener to them.

SUMMARY OF PREFERED INTENTIONS, BACKGROUND, ACCELERATING FACTORS, DECLINING FACTORS, POSITIVE AND NEGATIVE ACTION DRIVE

LAPOGAN, TUMAUINI, ISABELA

Sociological Background	Objective Facts and Preferred Intentions	Background	Accelerating Factors	Declining Factors	Positive Action Drive	Negative Action Drive
1. Selection of Vanguard	The DA and DAR initiated the organization of the cooperative to make the farmers strong to request for help from other institutions	The leadership of the first Chairman of the cooperative was not wanted by the members The second Chairman was liked by the members due to his sincerity and dedication to the cooperative	Good leadership Cooperative members	Leaders do not have the determination and strong will to avail of loans from the bank. This is because of their previous experiences from the first chairman. This is the reason why the cooperative have no project yet	Sincerity of leaders Capability of the Chairman Smooth relationship of Chairman, manager and BOD as well as members	Previous experience of leaders in terms of loans gave them a bad emotional impact that made them reluctant of seeking for the help from funding institutions basing it from their previous experience. They are not being challenged by the experience
2. Establishment of the Cooperative	Organize farmers into cooperative so they be in a better position to avail of loan	Membership increased in number from 29 to 116	DA, DAR, NGO's are willing to extend help if their services are requested Willingness of barangay officials to cooperate	Absence of an office where the officers and members could transact business	Officials of the cooperative are receptive to suggestions from the members	No regular meetings during the first chairman
3. Collection of CBU	Collect initial fund for the cooperative	All members are willing to continuously increase their CBU by giving 50 kilos of dried palay every cropping "tutuk saku"	Absence of permanent employee of the cooperative to do these job	Good strategy of the BOD in terms of increasing CBU from members	Willingness of members to increase their CBU	Tutuk saku is a sign of the lack of volunteerism to increase CBU
4. Management of Bank Account	The intention is to let the treasurer manage the bank account of the cooperative which is her main duty	No office of the cooperative so records and bank account as well as transactions are done in private houses which is	The cooperative adheres to its policies	No enough training for the treasurer	Willingness of the treasurer to be further trained and do his job well	Lack of technical knowhow on the part of the treasurer

		not a conducive situation for a cooperative				
5. Disclosure of Information	To practice transparency of information regarding the records and financial status of the cooperative	Records are not well prepared	Presence of records thou it is not well prepared	Lack of training for the secretary	Willingness to be trained and perform her job well	No office to keep records
6. Loan Application and Screening	Give equal opportunity to all members to avail of loans by adhering to the agreement of giving loans on a rotational basis due to the insufficient fund	Good screening of loan application	Cooperative treats all members equal in terms of availing of loans	Members of the cooperative could not avail of loans at the same time	Willingness to let every member avail of loan if possible	Limited fund of the cooperative for the members to avail of loans
7. Repayment of Loans and collections	To ensure good collection of loans The loan collection stays long in the hands of the treasurer due to the far distance of the bank	Bank is located in the town proper so the collection stays longer in the hands of the treasurer which is not safe	Good payment of loan	Far distance of bank so the collection stays longer in the hands of the treasurer	Willingness of members to pay their loans	Lack of trainings on the part of the officers
8. Project Formulation	To identify and implement projects	Officials of the cooperative are eager and willing to avail of other projects	No other projects except the solar dryer located per purok financed by the DAR	Lack of technical knowhow to prepare request for other projects from government agencies	Willingness to avail of other projects	Lack of training
9. Operation and maintenance of projects	To have a smooth operation and maintenance of projects	The operation of the cooperative is somewhat good	Dedication of Cooperative officials	Slow in requesting for other government support	Willingness and desire of members to cooperate with officials for the sake of promoting smooth operation of the cooperative	Lack of training
10. Decision of members to contribute to project	To encourage members to contribute to the implementation of identified projects	Officials listen to the opinion of members	Existence of mutual understanding between and among officers and members	No other projects	Willingness to contribute to the implementation of any project	Officials are slow in requesting for projects
11. Project Evaluation	To check the operation of the cooperative	There is an evaluation done by the DA and the	Willingness of the officers of the	Evaluation is not regular	Willingness of officers of the cooperative to be	No insider involved in the evaluation

		CDA	cooperative to subject the organization for evaluation		evaluated for possible improvement	
12. Labor contribution	Enhance the bayanihan system	There is cooperation in the cooperative which is a good potential to practice the bayanihan system	Following the bayanihan approach in enhancing cooperation. This shows that when the bayanihan approach is working, then we can say that there is cooperation among members	No other projects where bayanihan is enhanced	Willingness to do bayanihan in the cooperative	No other projects

EPIPHANY MULTIPURPOSE COOPERATIVE
Abut, Quezon, Isabela
Cooperative Category : DCC Result "VIBRANT"

Brief History

The Epiphany Multipurpose Cooperative emanated from the "Igorot Peasants Association" in 1995 which is religious-based association which originated from Baguio City. Its members then were all Igorot Cultural minorities who migrated from to Quezon province due to their acquisition of land from the area. At first, there were only 19 members of this association with an initial fund of P20,000.00. The main aim of the association is to organize themselves so they could be in a better position to help each other in times of needs. One day, the leaders of the association thought of registering this association in the Securities and Exchange Commission (SEC) but with the initial capital, it is not enough to register the association. They decided to add 1,000.00 each from the 19 members in order to be able to register it, but before this was finally registered, they thought of converting this association into a multipurpose cooperative and to widen their membership not only to the Igorots but also to the Ilocanos and other tribes in Isabela. This was decided by the leaders and members so they finally registered it as the Epiphany Multipurpose Cooperative in June 10, 1991. The BOD and the Chairman were elected. The first chairman was Albert Bumal-o who was elected because of his leadership potential and perceived honesty and sincerity to the cooperative. The chairmanship changed every year and from 1991 to the present, all chairmen were members of the Igorot tribes who were culturally known as sincere and honest people. Even the employees of the MPCI like the manager, secretary, cashier and bookkeeper are all of the same tribe. From the first chairman to the present, there was no distinct disparity in terms of their leadership and performance because the membership and the capital of the cooperative kept on increasing year after year under different chairmen. Today, the total asset of the cooperative is 20 million.

The cooperative is engaged in three major activities. The first is the lending investment wherein members are given as high as P300,000.00 loan depending on the evaluation of the Credit Committee. Originally, the highest possible loan was P600,000.00 but the present BOD and Chairman as well as the manager discovered that giving that kind of loan will limit other members from availing of loans because the fund is concentrated to only a few number of members so they have revised their policy and reduced it to P300,000.00 thereby giving a chance for everybody to avail of loan. The second activity of the cooperative is the Consumers store. As of now, the store is doing good because they prevent credits. All purchases are in terms of cash. The third activity is the Market Assistance program which is a new activity of the cooperative. It was requested by the members that the cooperative should be the one to buy their palay so that the middlemen will not take advantage of them. This program has just started this year. In this activity, the cooperative gains 0.25 centavos per kilo while the member earns 0.15 centavos per kilo higher than the private traders. This so far is good, but the cooperative is in need of a truck to haul these agriculture products. This identified need is being discussed among the BOD, the Chairman and the manager for the possibility of purchasing one truck using their 1 million loan from Quedancor.

SUMMARY OF RESULTS ON PHENOMENAL FACTS AND BACKGROUND OF THE COOPERATIVE

PHENOMENAL FACTS			BACKGROUND		
Who Initiated	**For What**	**Result**	**Why He**	**How Chosen**	**Incentive**
1. Selection of Vanguard - BOD	The BOD elects the chairman who they think could perform the job	The chairman was peacefully and honestly elected	The BOD perceive the person as dedicated and capable to the job	Through election	The chairman receives P750.00 per session or meeting
2. Establishment of the Cooperative - Initiated by the officers of the Igorot Peasants Association	To strengthen and rename the Igorot Peasants Association into Epiphany Multipurpose Cooperative to widen its membership and engage in more activities Establishment of the Epiphany Multipurpose Cooperative in 1990	Establishment of the Epiphany Multipurpose Cooperative	To serve its members and fully develop the cooperative	Through renaming and registration to SEC	The incentive is for the benefit of all members
3. Collection of CBU The Cashier	To increase the capital of the cooperative	Increase capital of the cooperative from 20,000.00 to 20 million	The cashier is knowledgeable on money matters	The cashier is appointed by the BOD	Given a monthly salary of P7,000.00
4. Management of Bank Account -Cashier	The bank account is kept by the cashier for it is her job to do so	There is no mismanagement of bank account of the cooperative	He is knowledgeable on how to perform his duties	He is appointed by the BOD and manager	Given a monthly salary of P7,000.00
5. Disclosure of Information BOD, Chairman and Manager	To provide all information related to the financial as well as operation of the cooperative	There is transparency of information and members are happy	It is their function to keep records open to all members	It is their obligation to do so	BOD, Chairman and Manager receive incentive of P700 per meeting
6. Loan Application -Credit Committee	To allow all members to have a chance to apply for loan	All members who are qualified for loans are free to apply. Members are happy about the screening and processing of applications	It is the duty of the credit committee to screen and approve qualified loans	The Credit committee was chosen through election	They are given incentive of P300 per meeting
7. Selection of Members who can apply for loan -Credit Committee	See to it that applicants meets the qualifications before are granted loans considering their capacity to pay, willingness to pay and the presence of collateral	Applicants whose applications are approved meets the stated qualifications	It is the Credit committee who is doing the job	Through Election	P300.00 per meeting
8. repayments of Loans -Members	Members are obliged to pay their loans	Members religiously pay their loans	It is their obligation to pay their loans	Obligation	Avoid penalty and earn dividends
9. Repayment of Collections Cashier	To attain a good percentage of loan repayments	100% loan collection	Obligation of the cashier	Appointed by the BOD	Monthly salary of P7,000 per month
10.project Evaluation CAVALCO, CDA	To see whether the cooperative operates in	To determine their strength and weaknesses for remedial	They are mandated to evaluate cooperatives	Obligation	They receive P1,000 each

	accordance with standards of CAVALCO and CDA who are experts along this line	measures			
10. Request for support from the government -BOD, Chairman and Manager	To avail of government assistance	Received loans from the land bank and Quedancor	It is the officials who perform this job	They were elected top do this job as one of their duties	They receive honorarium per month
11. Decision of Members to Contribute to the Project -Members	To contribute to the growth of the cooperative They adopted the strategy "one Peso everyday program"	Continuous growth of the cooperative	It is the members who makes the cooperative grow	Volunteerism	They benefit from their loans and contributions by receiving dividends
12. Operation and Maintenance of the Cooperative -Management and members	To keep the smooth operation and maintenance of the cooperative	Satisfaction of officials and members due to the honest management of the cooperative	It is everybody's concern	Obligation	Growth of the cooperative
13. Labour Contribution	To ensure the bayanihan among the members	Cooperation for a common goal of developing the cooperative	Obligation of everybody	Volunteerism	Growth of the Cooperative

GENERAL ASSESSMENT

- The cooperative has a high potential to continuously develop and grow in the next coming years if the people concerned should be able to sustain their agility, sincerity and dedication to their work.

RECOMMENDATIONS

- The officials of the cooperative should continue doing their good job and look into the feasibility of the plan of purchasing a truck for the cooperative
- They should keep the solidarity of their tribe to rule over the cooperative as this is one of the accelerating factor for the continuous development of the cooperative
- New members should be briefed on the status as well as activities of the cooperative because it came out from the interview that new members lacks knowledge on the activities of the cooperative
- Officials and employees should not be satisfied of their present knowledge about cooperative but instead should strive for continuous training to update and upgrade their knowledge to enhance the continuous smooth operation of the cooperative

SUMMARY OF PREFERRED INTENTIONS, BACKGROUND, ACCELERATING AND DECLING FACTORS, POSITIVE AND NEGATIVE ACTION DRIVE

Sociological Background	Objective facts and preferred intentions	Background	Accelerating Factors	Declining factors	Positive Action Drive	Negative Action Drive
1. Selection of Vanguad	To choose the qualified leader	Chairman are changed every year	Good start. Uniformity of tribes in the BOD and Chairmanship	Capital is not yet sufficient for the Cooperative	Values and cultures of the Igorots. They are known as honest and dedicated people	None
2. Establishment of Cooperative	This is intended to help its members along exploitations of middlemen	This Coop started from a tribal association with good intentions to help one another	Uniformity of goals for the cooperative	none	The desire of all members to increase their CBU	none
3. Collection of CBU	this to increase the capital of the cooperative intends	Continuous increase of CBU	"One peso everyday program" contributes to the growth of the cooperative	New members are not aware of all the activities of the cooperative	The desire of all members to increase their CBU	none
4. Management of Bank account	To keep bank accounts of the cooperative safe in the hands of the right person, the cashier	Cashier is knowledgeable of his job	Financial transactions are done in the office under the supervision of the manager	none	Cashier if knowledgeable of his jib	none
5. Disclosure of Information	The coop intends to provide transparency to all members	This was practiced ever since the coop started	Strong desire for transparency. Existence of yearly assembly meetings	New members are reluctant to ask for information about the cooperative	The honesty of the officer	none
6. Loan Application	It is the intention of this section to provide equal opportunity to members to apply for loan	Equal chance for loan application has been practiced from the beginning	Members avail of loans so long as they meet the requirements of the credit committee	Not all member have titled for collateral	Strict screening of loan applicants	Members without collaterals can not avail of bigger loans except for emergency loans which does not exceed five thousand pesos
7. Loan Repayment	It is the intention of the coop to collect 100% of the loans	Good loan repayments from the beginning of the coop	Good percentage of loan repayments	Low harvest brought about by calamity	Desire of members to pay their loans	Low harvest for sometimes
8. Loan Collections	It is the desire to attain 100 % loan collection	Good beginning of loan collection	100% loan collections	Not 100% collections when crops are destroyed by calamities	Desire of members to pay their loans	Low harvest in times of calamities

9. Project Formulation	It is the intention of the coop to formulate projects beneficial to the members	Members are involved in project formulation	Involvement of members	No feasibility study conducted	Honest and sincere project identification	Limited knowledge of BOD in feasibility preparation
10. Operation and Maintenance of the project	It is the intention to smoothly operate the project	The coop had been properly maintained from the beginning	Existence of dedicated and honest officials	Limited projects for a strong coop like epiphany	Strong and honest service	Absence of strong determination to avail of more loans despite their capability to manage loans
11. decision of Members to contribute to projects	It is the intention of members to increase their CBU through contribution	Members continuously increase their CBU through the One peso everyday scheme	Motivated members toward the increase of CBU	none	Highly motivated members	none
12. project Evaluation	The intention of the coop to continuously subject the coop for evaluation because of their desire to improve	The coop is yearly evaluated by either CAVALCO or CDA	The strong desire for evaluation	none	The desire to continuously improve	none
13. Labour Contribution	It is the intention of the coop to continuously practice bayanihan system	The bayanihan system emanated frommthe cultural communities	Strong desire for bayanihan	none	Bayanihan to the igorot is a precious culture	none

SUMMARY OF RESULTS ON PHENOMENAL FACTS AND BACKGROUND OF THE COOPERATIVE

PHENOMENAL FACTS			BACKGROUND		
Who Initiated	**For What**	**Result**	**Why He**	**How Chosen**	**Incentive**
1. Selection of Vanguard -Leaders of the Episcopal Church where the 19 Igorots are members	To foster unity and solidarity among members of the religious organizations	Organization of the "Igorot Peasants Association" headed by a President	The President was chosen to lead the group because he is respected by the members because of his honesty and sincerity in all his activities	The President was appointed by the members	The President has no monetary incentive but he is doing his job as president because of his so sincerity to serve his members
2. Establishment of the Cooperative -Initiated by the Officers of the Igorot Peasant Association	To strengthen and rename the Igorot Peasant Association into Epiphany Multipurpose Cooperative to widen its membership and engage in more activities. The establishment of the Epiphany MPCI was in 1990	Good start of the Epiphany Multipurpose Cooperative. At the beginning of the cooperative, the officers and members had a unified vision of	The first chairman of the cooperative was Mr. Albert Bumal-o who was chosen by the assembly because of his leadership and honesty in his service which was recognized by the members	The leaders of the cooperative like the BODs and chairman were elected using the parliamentary procedure. Parliamentary	There was no personal incentive for the first chairman. The first set of BOD's agreed not to get incentives until such time the cooperative is capable of paying incentive. For the

		letting their cooperative grow		procedure is a very popular system of election among the Igorot Cultural minorities	Igorots, when they agree on something, everybody is committed to follow said agreement. Anybody who violates the agreement will be excluded from the group. This is observed in most cultural minorities that originated in the highlands.
3. Collection of CBU -The Cashier	To increase the capital of the cooperative	Increased the capital of the cooperative from 20,000 to 20 million	The cashier is knowledgeable on money matters because she underwent trainings conducted by CAVALCO and because of the continuous supervision by the manager	The cashier is appointed by the BOD	Given a monthly salary of P7,000.00
4. Management of Bank Account -Cashier	The bank account is kept by the cashier because it is her job	There is no mismanagement of bank account of the cooperative	She is knowledgeable on how to perform her duties because she is well trained	She is appointed by the BOD and manager	Given a monthly salary of P7,000.00
5. Disclosure of Information -BOD, Chairman and Manager	To provide all information related to the financial as well as operation of the cooperative to members	There is transparency of information and members are happy about it.	It is their function to keep records open to all members	It is their obligation as officials of the cooperative to practice transparency	BOD, Chairman and manager receive incentive of P700.00 per meeting.
6. Loan Application -Credit Committee	To allow all members to have a chance to apply for loan so long as they meet the requirements of the cooperative (ability to pay, willingness to pay, good record on previous loan, and presence of land titles as collateral is loan is above P5,000). If loans are below P5,000, it is considered an emergency loan and they need not produce collateral but they should have a CBU of not less than P2,000. This emergency	All members who are qualified for loans are free to apply. Members are happy about the screening and processing of applications because the criteria for qualified loan applicants are strictly followed without favoritism.	It is the duty of the credit committee to screen and approve qualified loans. These duties are embodied in their functions under their constitution and by-laws and as instructed by the manager	The Credit Committee was chosen through election	They are given incentive of P300 per meeting

	loan is payable only for three month with 1.5% interest per month				
7. Selection of Members who can apply for loan -Credit Committee	See to it that applicants meets the qualifications before they are granted loans	Applicants whose applications are approved meets the stated qualifications	It is the credit committee who is doing the job	Through elections	P300.00 per meeting
8. Repayment of Loans -Members	Members are obliged to pay their loans	Members religiously pay their loan	Every member of any cooperative who obtained loan has the obligation to pay his/her loan and this is strictly followed by the members as well as officers of the Epiphany cooperative. Cooperatives whose members are reluctant to pay their loans will not grow. The existence of this problem sometimes depends on the leadership of officers but most often lie on the values and attitudes of people. It is observed that Ilocanos (superior tribe) are not usually trusted on keeping their promises on doing their obligations. The Igorots are a different cultures. They are sincere in their promises and do their obligations	Obligation	Because of the strong cooperation and commitment as well as good values of the Igorots, they pay their loans on time and as an incentive, they avoid penalty which is 4% per month as compared to the 1.5% per month interest when loans are not due
9. Repayment of Collections -Cashier	To attain a good percentage of loan collection to avoid penalty it loans reached its due date. It is also the obligation of the cashier to prepare reminder notes to members whose loans are about to reach their due dates	100% loan collection	Obligation of the cashier	Appointed by the BOD	Monthly salary of P7,000 per month
10. Project Evaluation -CAVALCO, CDA which is done yearly	To see whether the cooperative operates in accordance with standards of CAVALCO and CDA who are experts along this line. Through evaluation, the	Evaluation is done yearly since the chairman of the cooperative serves only for one year. Before the next	They are mandated to evaluate cooperatives	Obligation	They receive P1,000.00 each

	cooperative will know their strength and weaknesses so they know what to improve	chairman will take over, there is a need to evaluate the performance of the cooperative under the existing chairman. This is the policy of the cooperative. Other cooperatives do not do evaluation yearly but they only do it if the BOD wanted to request for evaluation. They don't have policies on evaluation.			
11. Request for support from the government -BOD, Chairman and Manager	To avail of government assistance to help develop the cooperative	Receive loans from the land bank and QUEDANCOR	It is the officials who perform this job	They were selected to do this job as one of their duties	They receive honorarium per month
12. Decision of Member to contribute to the Project -Members -it is always the policy (unwritten policy) of the BOD's and chairman to let the members decide on the kind and amount of contribution to projects of the cooperative. The officials never impose contributions because for this tribe, if contributions are imposed, the more that they do not pay because they wanted to determine their contribution and not to be dictated	To contribute to the growth of the cooperative They adapted the strategy "one peso everyday program"	Continuous growth of the cooperative	It is the members who makes the cooperative grow	Volunteerism	They benefit from their loans and contributions by receiving dividends
13. Operation and Maintenance of the cooperative -Management and Members	To keep the smooth operation and maintenance of the cooperative	Satisfaction of officials and members due to the honest management of the cooperative	It is everybody's concern	Obligation	Growth of the Cooperative

14. Labour Contribution -Everybody's Concern	To ensure bayanihan among the members	Cooperation for a common goal of developing the cooperative	Obligation of everybody	Volunteerism is one of the good attitudes of this tribe as part of their culture. This is the reason why leaders don't find any difficulty in convening bayanihan work. This is one of the factors that contributed to the success of this cooperative as compared with the rest	Growth of the cooperative

LA SUERTE MULTIPURPOSE COOPERATIVE
La Suerte, Angadanana, Isabela
Cooperative Category: DCC Result "ANARCHY"

Brief History

The La Suerte Multipurpose Cooperative was organized in 1995 through the initiative of their Development Facilitator from the DAR in the person of Mr. Cristito Acoba. He initiated the election of the BOD wherein Mr. Romy Villanueva was elected as chairman. The BOD appointed Mr. Placido Mateo as the manager of the cooperative from 1995 to present. During the time of Mr. Acoba, their was an initial members of 17 who contributed P1,000.00 each which was initially given as agricultural loans to their members. After 2 years, the cooperative died. This happened because when the members availed of loans, they backed out from the cooperative with the intention not to pay their loans in exchange with their CBU. They were able to do this because they did not give any collateral for their loan. This happened because the members as well as officers lacks training and they do not know the importance of organizing themselves into cooperative. The failure of the first cooperative is due to the poor leadership of the chairman and manager because they do not have enough dedication and sincerity to let the cooperative grow and they lack leadership to motivate the members. In 1997, this cooperative was revived and the second chairman Mr. Elias Ruiz was elected as chairman. This time the cooperative slowly increased its membership to 140. This happened because of the help of the DA who conducted a series of trainings on cooperative management that served as an eye opener to the residents which convinced them to join the cooperative. The increase of membership is not due to the leadership of the second chairman but this is due to the DA and DAR's trainings.

At present, the cooperative have P76,000.00 as their capital and this is being used to grant agricultural loans to the members as this is their need. Today, the loan repayment is becoming better. Members are able to pay their loans. This is because they gave collaterals to their loans. During the time of the first chairman, they decided to increase their CBU by paying P500.00 per cropping which did not materialize because the members could not afford to pay, due to low income from the farm. Their experience became a lesson to the second chairman. He proposed to the BOD to reduce the 500 to 200.00 per cropping this year which was approved by the members of the board . This is being implemented now. As a general assessment, the chairman lacks leadership. This is shown by the absence of projects of the cooperative and the lack of initiative to avail of loans from the banks. They are afraid to avail of loan because they lack the technical know-how to manage the loan. At any rate, the cooperative is negotiating for a 2 million worth of loan in the form of a 4 wheel tractor from the DAR. This is being negotiated right now.

One point that contributed to the very slow progress of the cooperative is the non-participation of the barangay officials during the initial years of the cooperative bcause of the "wait and see" attitude of the barangay officials. Their early participation should have made the cooperative stronger. The Barangay Captain and some of his officials became members just this year. The entrance of the barangay captain motivated some residents to join the cooperative that increase the membership.

The reason why the committee and the BOD are not close to each other is because of the absence of regular meetings. They do not schedule meetings so often because they do not have an office. The absence of an office contributes to the to the poor operation of the cooperative because there is no place where transactions of the cooperative is done

SUMMARY OF RESULTS ON PHENOMENAL FACTS AND BACKGROUND OF THE COOPERATIVE

PHENOMENAL FACTS			BACKGROUND		
Who Initiated	For What	Result	Why He	How Chosen	Incentive
1. Selection of Vanguard BOD	To manage the new cooperative	There was an initial membership of 17	The BOD thought he is qualified for the job because he was talkative during meetings	The chairman was chosen through election	No monetary incentive. Their desire is to let the cooperative grow
2. Establishment of the Cooperative This was initiated by the DF of DAR	To organize a cooperative to help the members in their farming activities (loan)	From an initial members of 17, it became 140 The attitude of the farmers slowly being changed. This is due to their attendance to trainings conducted by DA	The BOD's have chosen this new chairman because he is perceived to be qualified thinking that he is better than anybody else in the BOD based on his educational qualification. He reached college level as compared with the rest of the BOD.	Like the first chairman, he was also chosen through election from the BOD	No initiative like the first chairman but to aspire for the growth of the cooperative
3. Collection of CBU It is the BOD and the Manager	To collect CBU from the incoming members and additional CBU from old members to increase CBU collections	There is an increase CBU from P17,000 to P76,000 to date	It is their duty to perform this job and to substitute the credit committee which are inactive due to the lack of motivation and knowledge of the job The BOD do not change their cashier because she is just new and they wanted to let her be trained. The Credit Committee could be changed because they are waiting for the next coming election which is done every year.	The BOD and manager volunteered to do this job for the sake of the cooperative	They have no monetary initiative but like the rest, it is their desire to develop their own cooperative
4. Management of Bank Account It is the BOD and Chairman	To keep the funds of the cooperative safe	The bank account is safe in the hands of the Chairman and the Manager	He is suggested by the BOD since their treasurer is new and she does not know her job yet	She was suggested by the BOPD and members	No monetary fund because of the insufficient funds of the cooperative
5. Disclosure of Information The BOD and Chairman	To provide all information regarding the financial status and operations of the project open to all members	There is transparency of information and members are at least happy about this	The BOD and Chairman perform this function because the secretary is not motivated to do the work because of the lack of knowledge and the absence of incentive	The volunteered to do the job otherwise nobody will do the job because the people responsible are not active to insufficient knowledge	No incentive but they are only after of service

6. Loan Application Chairman, BOD	For the members to be given the chance to avail of agricultural loans	Some members availed of the agricultural loans. This agricultural loan is done on a rotational basis due to insufficient fund	They are assisting the credit committee who are not doing their job due to the absence of motivation and of course incentives	They volunteered to do the job for the smooth operation of the cooperative	All the efforts done by the BOD and Chairman as well as the manager are without incentive because of their desire to let the ccop grow so in the future they could suggest for incentives
7. Selection of members who can avail of loans -Chairman and the BOD	See to it that applicants of loans above 3,000 pesos should provide collaterals. Collaterals maybe documents of farm implements, farm animals or land titles	Provision of collaterals to loans above 3,000.00 pesos	They did the job because they wanted to ensure that all members who wanted to avail of loans have their collaterals. The credit committee who should be doing this job are inaction due to reasons stated earlier	They volunteered to do the job to assist in the screening of loan applicants for the smooth operations of loans	No incentive but for service
8. Repayment of Loans - Members	To pay their loans for the other members to have the chance to also avail of loan	Good turn over of loan repayment. It is being rotated to farmers although loans are in small amount	It is the obligation of members to pay their loans	They are mandated by their constitution and by-laws to pay their loans	Avoidance of penalty of 4% interest per month
9. Repayment of collection -BOD, Chairman and Managers	To ensure good collection of loans from members	There is a good collection from loans	They do the job to ensure a good collection since the credit committee is inactive	They volunteered to do the job	No personal incentive but to ensure good collection from loans
10. Project Evaluation Development Facilitator	The DF evaluates the cooperative and give suggestions on how the cooperative should operate	The DF gives his recommendations on the result of his evaluation like: lack of technical know how by members and officials, lack of motivation on the part of the members, lack of incentive, the practice of laissez faire leadership style	He was suggested by DAR to make an assessment of the cooperative	He was requested by DAR because of the intention of the cooperative to avail of a 2 million worth 4 wheel tractor	He has no monetary incentive but he did it for service
11. Request for Support from the Government BOD, Chairman and Manager	To request for assistance from government agencies	They are negotiating for a 4 wheel tractor loan from DAR	They are the people who are in the position to do the job	No body appointed them for the job but it is their duty	The high hope to avail of loan
12. Decision of Members contribution to the project -Members	The members decided on their contribution but until now they have not implemented it yet	Their plans remains as plans as of now because members are not motivated to pursue their plans	They are the ones who decided on what contribution could they give to the cooperative	The members take advantage of the loose leadership of their officials by giving their own decision and insisting that their	Any positive result of their contribution benefits all members of the cooperative

				decision will be followed. Since the members comprise the majority, the officials could not do anything.	
13. Operation and Maintenance of the project -BOD, Chairman, Manager	For the smooth operation of the cooperative	Members are benefited from the cooperative in form of availing for loans from funding institutions, to sell their products at a higher price, to buy agricultural inputs in bulk to bargain at a lower price	Everybody is involved in the bayanihan system if ever there are projects	It is the obligation of all members to cooperate with the officials of the cooperative	No incentive but they do it for the sake of the cooperative
14. Labour Contribution -Members, BOD and Manager	To ensure labor contribution among all members of the cooperative irrespective of positions	Ensure the bayanihan system but unfortunately there are no projects where bayanihan could be practiced	The members are willing to try the bayanihan if ever there are project for the cooperatrive	It is the obligation of all members to contribute their labor to any ;projects of the cooperative	No incentive but they do it for the cooperative

GENERAL ASSESSMENT

- The cooperative have the desire to grow and develop but leaders are too loose to enforce planned projects.

The leaders of the cooperative have the strong desire but they do not have full control on the management of the cooperative. What is needed in La Suerte are strong leaders who makes sensible decisions pertaining to the operations and maintenance of the cooperative. Officials should not give too much freedom on the members to interfere with management decisions because the members are not united. Each one of the members have different opinions and decisions which leads to the disunity of the members and officers in terms of decisions. They could not agree on a common decision.

- Members are not motivated to perform their duties.

Members during meetings show their willingness to participate in activities of the cooperative but it comes to the actual performance of the work, they are reluctant to participate. They are not true to their promises during meetings. This is an indication that they are not motivated. They have the potential to become active members if they will be well motivated. This could be done by DA, DAR and the barangay officials.

- Laissez Fair leadership is not effective at La Suerte where people are passive having negative attitudes.

The people of La Suerte belongs to the superior tribe (Ilocanos) and this tribe is known for their "ningas cogon" attitude. This means that they are active at the start but this activeness will eventually fade away. They are more inclined on personal interest rather than group interest. This attitude make it difficult for the leaders to lead them, thus people of La Suerte are like babies who need continuous care and training until such time they are well motivated and determined to stand on their own feet.

RECOMMENDATIONS

- There is a need for leaders of the cooperative to change their leadership styles suited to the people in the village. From their background, a mixture of the democratic and dictatorship might be effective to mobilize and motive these people.

- An office for the cooperative should be built to have a common place of convergence among officials and members to keep a closer camaraderie which is needed for the promotion of a common goal.

- There is a dire need to keep the cooperative strong so it could compete with private traders who are monopolizing the market of agricultural products from the barangay at the disadvantage of the farmers

- Leaders of the cooperative should try to avail of other loans to start the operation of the cooperative. Honesty, sincerity and dedication to the job are indispensable indicators to make a cooperative grow and develop.

SUMMARY OF PREFERRED INTENTIONS, BACKGROUND, ACCELERATING AS WELL AS DECLINING FACTORS, ACTIVE AND NEGATIVE DRIVE FORCE

Sociological Background	Objective Facts and Preferred Intentions	Background	Accelerating Factors	Declining Factors	Positive Action drive	Negative Action drive
1. Selection of Vanguard	The DAR organized the cooperative through their DF to make their organization strong and capable of bargaining for a higher price for their products	The leadership of both the first and second chairman of the cooperative are too loose that members are given a lot of freedom to make decisions in terms of increase in CBU. It is true that their membership grew and as a result, there was an increase in CBU but they should have earned more CBU than what they have today if only officials are wise enough to design strategies on how each member should add some more on their CBU. Sometimes loose leadership is effective but this depends on the kind values and the attitudes of the people. This maybe effective to Epiphany because the people are different from the people of La Suerte.	Members are cooperative if they are harnessed and if they understand the importance of a cooperative	Liassez Fair leadership style of the Chairman	Determination and Sincerity of officers	Previous experience of the cooperative gave them a bad impact, thus they became strict in giving out loans
2. Establishment of Cooperative	The cooperative was revived for the second time after the cooperative broke down due to the mismanagement of the first chairman and also the members. There was no determination among the first set of officers to let the cooperative grow	The cooperative broke down twice due to the ignorance of members. Members after availing of loans backed out from the cooperative and refused to pay their loans in exchange for their CBU. This happened because the members were not required to give collateral. This also shows that members don't know the importance of joining the cooperative.	The initiative to revive the dead cooperative was done and now the membership increased. This is because of the continuous support of the DA and the DAR in holding trainings to farmers wherein they slowly understood.	Wait and see attitude of members. They wanted to join the cooperative only if it is progressing The cooperative is not strong enough to stand on their own. If the DA and DAR will stop assisting them at this moment, the cooperative will surely die for the	The initiative of the BOD and Chairman to revive the cooperative	Low education of members and officers

				third time.		
3. Collection of CBU	The leadership of Mr. Elias gave rise to an increase in membership and CBU. This happens because the present BOD together with the chairman were able to realize the errors done by the previous management and started to correct these errors. As a result, there was an increase of CBU from 17,000 during the first chairman to 76,000.00 during the time of the second chairman.	The first CBU collection of 17,000 was given out in the form of loan to the members without any collateral. Until this time, the loans were not yet paid so the operation of the cooperative stopped. Mr Elias revived the cooperative and he tried his best to convince the officials of the barangay with the help of the DF to join the cooperative which they did. The chairman also requested for a continuous support from the DA and DAR. These strategies resulted to an increase in membership to 140 and an increase in CBU	The desire of the Manager and Chairman to increase CBU collection of the members	Non-educated members in terms of cooperative, its advantages and importance mentioned in box 15 of the first table	Strong desire of chairman and manager to let the cooperative grow	The lack of knowledge of members and officials regarding cooperative operation and maintenance
4. Management of Bank Account	There is an existing bank account of the cooperative but since the bank is far from La Suerte, the Cashier and the Chairman holds the cash. They invests the money in terms of loan to their members. They only keep a maintaining balance in the bank.	The cooperative has a new treasurer and she does not know what she is doing so the chairman assist her in managing the bank account	The existence of bank account where funds are deposited	There is a very small amount of money left in the bank	The money is invested as loan to members	Small maintaining balance in the bank
5. Disclosure of Information	The officials of the cooperative realized the need to practice transparency through the advice of the DA and DAR so that members and other government agencies could help them identify their errors so they could improve	With the help of the DA and DAR, the officials learned how to prepare and keep records open to members who wanted to know some information regarding the performance of the cooperative. The officials learned from their trainings from DA and DAR that transparency is good in order to improve the cooperative by accepting suggestions of members and other government agencies who looks into the records.	Sincerity of the cooperative officials to open records to members. They do this during general assemblies and meetings. Financial status are presented and members are given the chance to know the status of	Insufficient knowledge of officials and members despite the trainings conducted Negative values of members like the "ningas cogon, wait and	They are starting to practice transparency to members	Incomplete records

			their CBU.	see, and manana habit" are detrimental to the cooperative. Manana habits means postponement of activities while ningas cogon means they are good only on the start of the project.		
6. Loan Application	The cooperative learned lesson from their previous experience wherein loan applicants were not screened and collaterals were not required. This time, the chairman of the BOD assists the credit committee in screening loan applicants considering the following criteria: a) presence of collaterals, b)willingness to pay loans per cropping	With the 76,000.00 capital, the BOD's decided to give loans to qualified members who meets the requirement like the presence of collateral. Since the amount is not sufficient for the members to avail of loan at the same time, they decided to rotate the loans to members.	No disparity among members	Not all members could avail of loan at the same time due to limited fund	Equal chance for all members to avail of loan	Insufficient fund
7. Loan repayment	Collection of loans has improved by 80%. This is due to the determination of the officials to go around during harvest time. The officials decided to accept palay as payments. The other members who could not	Loan repayment was difficult at first because the officials waited for the voluntary initiative of the members to pay which they found not effective. This time the officials go around during harvest time to collect payments in cash or palay. This strategy improved the loan repayment of members.	With the help of the trainings and determination of the BOD's or officials to go around to collect loan repayments, the members slowly developed their willingness to pay loans. What is	Bad collection of the first loan due to the mismanagement of the first chairman and BOD. They allowed members to avail of loan without	Through the motivation of DA and DAR, the officials slowly developed determination to let the cooperative grow.	Bad records of first members

	pay are given penalty of 4% per month.		needed here is patience on the part of the officials until such time the members realizes the importance of supporting the cooperative.	collaterals and since the members do not realize the importance of the cooperative, they backed out after availing of loan. When they were out of the cooperative, they did not pay their loans and they did this because they did not give any collateral. Some of the first members backed out after availing of loans and refused to pay loans	Because of their determination, they are motivated to go around during harvest time to collect loans from members.	
8. Loan Collection	Loan collections has improved due to the initiative of the BOD's to go around to collect payments during harvest time. The members also slowly developed the willingness to pay their loans due to the trainings given to them by DA.	All members who backed-out from the cooperative are ashame to register back to the cooperative because of what they did .	Improved loan collections due to the continuous training which helped members understand better the purpose of the cooperative	Bad debts of the first batch of members	Willingness of new members to pay their loans	Insufficient fund to let everybody avail of loans
9. project Formulation	The desire to formulate projects for the cooperative	No project for the cooperative yet	The desire to formulate projects but until now, non yet	Lack technical know how in project identification	At least there is the desire to formulate projects	No projects until now despite their existence for 5 years
10. Operation and	Keeps the smooth operation of the	The cooperative died twice within the period of 5 years	Presence of dedicated chairman and BOD	Too loose leadership	Sincerity to the service by	Lack of leadership

Maintenance of the project	cooperative			(giving members too much freedom)	chairman and BOD	potential for chairman
11. Decision of members to contribute to project	To activate members to contribute to the development of project	Members are not motivated to look into the importance of giving contribution for the development of the cooperative	Members are potential to become active if properly harnessed through trainings. This potential is observed in them because they are showing positive changes in their attitude. They slowly learn to cooperate with the officials by paying their loans.	Officials don't know how to harness members	High hopes for members to become active	Lack of technical know how by officials
12. Project Evaluation	To determine strength and weaknesses of the cooperative for possible remedial measures	No evaluation of the ccop from experts like the CDA	The existence of a concerned development Facilitator	No request for evaluation from BOD and Chairman	At least the DF have the initiative although he is not the proper person to do so	Lack of initiative from coop officials to request for evaluation
13. Lasbour Contribution	To promote the use of the bayanihan approach	The members wanted to do bayanihan but no opportunity to do so since the cooperative has no project yet	Desire to do bayanihan	Absence of project where members could exercise their bayanihan interest	Strong desire to practice bayanihan	Absence of projects

AMULUNGAN MULTIPURPOSE COOPERATIVE
Rizal, Santiago, Isabela

Cooperative Category: DCC result: "PATAY"

Brief History

The Amulungan Multipurpose Cooperative started as an Agrarian reform Beneficiary Association (ARBA) which was organized in 1989 through the initiative of the DAR. When it was an ARBA, the management of the association was good and the members were then happy. The DAR assigned Mr. Rodrigo Gonzaga who was suggested by his son Felipe an employee of the DAR and his brother Nestor Gonzaga who was then the MARO of Santiago, Isabela. Rodrigo Gonzaga did not last long as Manager of the Association due to his sudden death. When he died, his son from the DAR Felipe took over the Association. Felipe initiated the conversion of the ARBA into an MPCI. As an MPCI, a new sets of officers have to be elected. Felipe manipulated the election. He saw to it that his friends in the DAR became members of the BOD. In this cooperative, most of its members are the relatives of the manager. This happened because majority of the residents in the barangay are his relatives. From the time he took over, he did not allow the cooperative to change him as manager. His leadership was terrible for the members. The existence of Croonies is rampant. Dictatorship and monopoly of decisions are practiced. He was disliked by the members after noticing his intentions and after discovering his anomalous activities. It was already late when the members discovered all his activities because at first the members did not notice his bad intentions.

SUMMARY OF RESULTS ON PHENOMENAL FACTS AND BACKGROUND OF THE COOPERATIVE

Phenomenal facts			**Background**		
Who Initiated	**For what**	**Result**	**Why He**	**How Chosen**	**Incentive**
1. Selection of Vanguard					
DAR assigned Rodrigo Gonzaga as Manager of the ARBA	To organize the farmers into a cooperative to avail of credits	The leadership of Rodrigo Gonzaga was good but when he was succeeded by his son Felipe of the DAR, his leadership was terrible for the members. The members hate him for cheating them by malversing the money of the cooperative, monopolizing decisions, his dictatorial management, availing of big loans from the banks without their knowledge, by investing the money into projects which were not decided by the assembly, and by not returning their collaterals	Felipe is the son of Rodrigo	By Succession	The incentive was hidden from the members that is to enrich himself at the expense of the members
2. Establishment of Cooperative					
DAR through Mr. Rodrigo Gonzaga	Organize the Cooperative to avail of credits	ARBA was successful MPCI died due to management of a dictator manager	Felipe is the son of Mr. Rodrigo, the deceased ARBA Manager	Done through succession	The members receive incentives by availing of

					agricultural loans during the time of the father, Mr. Rodrigo Gonzaga
3. Collection of CBU					
CBU collection was done by the manager himself	To obtain high CBU collection to meet the amount needed for his intention to loan from banks	There were complains from the BOD and Members with regards with manipulation of funds	Could not entrust CBU collection to the BOD and Treasurer because of his bad intention	By encroaching to the job of the BOD and Treasurer	The manager gets all possible incentives which is determined by him During the initial stage of the leadership of Felipe Gonzaga, some members availed of agricultural loans with collaterals
4. Management of Bank Account					
Manager together with his croonies	To be sure that he has the bank book so he could make withdrawals anytime	Complains from the treasurer, BOD's and members for the mismanagement of funds	This was done because some of the BODs were his croonies and friends	He created a situation wherein the non relative BODs and members could not complain	He gets what he wanted
5. Disclosure of Information					
Manager decided not to expose records	To keep his anomalies remain secret	Complains from non relative members and BODs	The manager is powerful to do what he wants	This was done by convincing his relatives and friends to support his decisions. In return for their support, they receive certain monetary incentive from him	Records of anomalies are out of the reach of BODs and members
6. Loan Application					
Manager	To recruit applicant who have land titles as their	Applicants provided collaterals but only collaterals of non-relatives were used to	The manager was the one who enforced only land titles as collaterals	He asked the BODs and members that he will do that job	The incentive of the manager in doing the job is to collect

	collateral	avail of big loans from the banks		to ensure that loans applicants will have their collaterals to ensure that they will pay their loans	collaterals which he will use in applying for loans in the banks which he did
7. Loan Repayment					
Members	To obey their constitution and by-laws and also to get back their collaterals but they were not able to retrieve their land titles since these were used as collaterals for big loans in the bank	Members paid their agricultural loans but failed to get back their collaterals	Members were instructed by the manager to pay their loans so they could get back their land titles but this promise did not come true	Members volunteered to pay their loans to the manager thinking that the payments were deposited to the accounts of their cooperative in the bank	Members were able to pay their loans thus no penalty but there are some members who were not able to pay their loans and these were the people who were threatened by the manager to sue to court if they will not sign a waiver stating that their loans are condoned but their collaterals will still remain with him. These people were forced to signed because they don't want to be sued to court
8. Repayment of collections					
Manager	To be able to use the collection for his business	The cooperative was bankrupt	The manager assigned his BOD friends	By using his BOD relatives and friends	He could manipulate the money collected
9. Project Formulation					
Manager	Support for availing of loans from banks	The manager availed of several loans using the cooperative	He is powerful	He volunteered to be the one to identify projects where the loan should be invested	The loan was not beneficial to the cooperative
10. Request for Support from the Government					
Manager and BOD	In support to the loan applications to the different banks	He availed of 18.1M from various banks	He is knowledgeable of availing of loans	He volunteered to do the job	He manipulated the money from the loan
11. Decision of members Contribution to the Project					

Manager	To support his intention of putting up the projects	Members failed to give their contributions Members developed hatred to their manager	He is powerful to decide on the kind of project	He volunteered to do the job	He used the money for his business and used a partial amount for the Pseudo project of the coope-rative like the rice mill, water pump and warehouse which have lacking parts thus non-functional.
12. Project Evaluation					
Manager	Manager decided not to let the cooperative be evaluated by any external institution	No evaluation and audit was done	The manager have the power to dictate the BOD not to agree on any offer for evaluation of the cooperative	He was persistent of his decision	He gets what he wanted
13. Operation and Maintenance of the Project					
Manager	To manipulate its operation	There was a monopoly of decision It appeared that the cooperative is privately owned	He infl;uenced the BOD to always agree with him	He was persistent to do all the decisions	He get what he wanted
14. Labor Contribution					
Manager	To make use of the labor of the members	No bayanihan support from members	He was not successful this time	He volunteered to do the job	None

RECOMMENDATIONS

1. The Amulungan Farmers should forget all about the existing Cooperative because it is impossible for them to revive the organization with 18.1 million credit from the bank.

2. Those members whose title is not yet returned by the manager despite the payment of their loans should consult an attorney to settle the case with the manager in court.

3. The farmers should initiate a new cooperative but has to look into the legality of doing so with the fact that there is an existing cooperative in their barangays, only it is dead.

4. All victims of the manager should overcome their weaknesses like fear of relative, fear of going to court and ignorance of the law by consulting advice from an attorney. In doing so, they should determine first if this attorney has some sort of connections or relationship with the manager. They should contribute a certain amount to pay the attorney otherwise the attorney would not be doing his best in their favor. If this will happen, it will be the attorney who will fight for them, digging into the records, informing the bank about how he availed of the loan and how it was spent as part of his desire to retrieve the collaterals of victims.

SUMMARY OF PREFERRED INTENTIONS, BACKGROUND, ACCELERATING FACTORS, DECLINING FACTORS, POSITIVE AND NEGATIVE ACTION FORCE

Sociological Background	Objective facts and Preferred Intentions	Background	Accelerating factors	Declining Factors	Positive Action Drive	Negative Action drive
1. Selection of Vanguard	Established to organize farmers to avail of loans	The manager has bad intentions for the cooperative	Cooperation of the members because they have no idea of the hidden intention of the manager	Power of succession of management of the cooperative from father to son Monopoly of leadership by one manager Manager controls transaction of the cooperative Majority of the BODs are friends and compadres of the Manager Majority of the members are his relatives	The ARBA has a good start which should have been continued	Members don't have the nerve to complain and report him to authorities because majority of the residents of the barangay are his relatives Members allow themselves to be threatened by the manager Members allow the manager to exploit them because of their ignorance on the legality of matters pertaining their problems. They were thinking that what the manager is doing is in accordance with the law
2. Establishment of the Cooperative	The objective of organizing to avail of credits	There was no election upon the death of the ARBA president but succession was done by the son	With the educational background of the managers is suppose to be a good potential for the cooperative	The knowledge and educational background of the manager was not used properly All Committees are just dummy. They are not functional	Intelligent manager	Nepotism and Croonism The manager capitalized on the members's ignorance or absence of knowledge as well as fears of any untoward incident from relatives surrounding them

3. Collection of CBU	The hidden motive of the manager to collect and use the money for himself	CBU was collected by the manager The sweet tongue of the manager encouraged the members to give their share in the CBU	Good convincing power of the manager to collect CBU	No involvement of any committee in the collection of CBU	Willingness of the members to give their CBU	CBU collection served as a drive for temptation on the part of the manager
4. Management of Bank Account	The manager intends to keep the bank account for his convenience	Manager encroached in the duty of the treasurer	No accelerating potential seen in the cooperative with this kind of manager	The possession of the bank account tempted him to make withdrawals anytime with his croonies	No positive action drive in this case	The temptation to malverse the fund
5. Disclosure of Information	There is the intention of keeping all information from anybody	Records of the cooperative are in his hands	No feasible accelerating factors	No transparency of records	At least there are records although these records by now has been manipulated and tampered	Presence of bad intentions
6. Loan application and Screening	The existence of the intention to grant loans only to members who have land titled for their collaterals so these could be used by the manager in availing of more loans from the banks	BOD and manager are looking for collaterals for their own intentions There is no valid reasons given to members whose application are disqualified	At least some members were able to loan which latter on became disadvantagious on their part	Ciollaterals were not given back to members who paid their loans Loans from the banks have no possibility of being paid by the cooperative	Some members were granted loans which made them happy for a moment	Could not get back their collaterals from the bank
7. Loan repayment and collection repayments	The intention of loan repayment is to obtain 100 % collection	Collection of loans is done by the manager not the BOD and other committees Those members who were not able to pay were forced to sign a waiver for the forgiveness of their loans but could not regain their collaterals	Eagerness of the Manager to obtain 100% collection	Collections were not given to the treasurer for deposits in the bank	The desire to have a perfect collection for him to use in his business or from other plans	The desire to collect loan repayments for personal use
8. Project Formulation	The manager and his friends had a bad intention of pretending	Projects were not decided by the majority but by him and his	Cooperative management have the capability to implement	Monopoly of decision	Manager is knowledgeable	Self-centered motive

	to use the loans into a non-functional projects	friends and relatives The contractor of the projects had a mutual understanding with the manager	projects if only management is honest and sincere			
9. request for government Support	The manager had the intention of requesting projects and funds from other institutions but these do not go to the cooperative	The Manager who is an employee of the DAR prepared all the request	The Manager Capitalized on his knowledge	The knowledge of the manager was used for his own benefit	No positive action drive	Ignorance of the members led them to be exploited
10. Decision of Members Contribution to the project	No decision of members were taken into consideration by the Manager	All decisions lies in the managers's hand				
11. Project Evaluation	No project evaluation done ever since he was the manager	He intends to hide the truth about what he is doing				
12. labor Contribution of members	Members decided not to cooperate anymore with the managers upon knowing and observing what he is doing					

Appendix F Agricultural / Rural Infrastructure

F.1 Development Plan of Each ARC

F.2 Post Harvest Development

F.2.1 Drying Facilities

F.2.2 Warehouse

F.3 Irrigation Facility Development

F.4 Farm to Market Road Development

Appendix F Agricultural/Rural Infrastructures

F.1 Development Plan of Each ARC

Initially, the study area covers 21 ARCs which consist of 40 barangays however, since Isabela Settlement was divided into three clusters, namely: La Suerte, Dipasivi, and Cenea that made the study area 23 ARCs.

The barangays have their own development plans but the prioritization of the identified proposed projects were not in accordance to rural development planning. However, this will still be used in this plan as a basis (table F-1-1).

Table F-1-1 Barangay Development Plan (1)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
1	Lapogan	1	(4) Solar Dryer (7 units = 7 x 15 x 28 m)	(1) Communal Pump Irrigation Project (T=325 ha, A=325 ha)	(2) Road Concreting (7 km) (3) Construction of FTMR (9 km)	(5) School Building (6) Drinking Well (14 units)
2	Quiling	1	(1) MPP (200 m → 2 x 100 m x 4 m)		(2) Construction of FTMR including box culvert and pipe culvert (2 km) (3) Rehabilitation of FTMR including box culvert and pipe culvert (1 km)	
3	(omitted)					
4	San Manuel	1	(2) MPP (100 m)		(1) Construction of FTMR (1-1) San Manuel - Sta. Maria including culvert and bridge (2 km) (1-2) San Manuel - Pangal Sur including culvert or bridge (2 km) (1-3) San Manuel - Villa Fermin (2 km) (1-4) San Manuel - San Antonio (2 km) (1-5) San Manuel - Sta. Ana (1 km) (1-6) San Manuel - Pangal Sur (1.5 km)	
5	San Miguel (Ramon)	1	(4) Solar Dryer (4 units) for Purok 2,3,4 & 5	(1) Construction of new Sub-Lateral canal (L=2.8 km) (T=100 ha, A=100 ha)	(2) Construction of FTMR, San Miguel - Bamdan Creek (1.5 km) (3) Construction/Maintenance of Bry Road (2.5 km) (a) Construction of FTMR to purok-8 (2.6 km)	(5) Water Supply System, level-1 : (Deep tube well + elevated tank) (6) Day Care Center (2) (7) Health Center (1)
6	Amulungan - Rizal	1		(7) Rehab. of weir on drainage canal for water re-use	(1) Concrete Pavement for Lopez St, (3.0 km) (2) Rehab. of Kabulalaan St, (1.8 km) (3) Rehab. of Silva St, (2.5 km) (4) Rehab. of Olimon St, (1.0 km) (5) Rehab. of Village St, (1.0 km) (6) Rehab. of Olonan St, (0.5 km)	

Table F-1-1 Barangay Development Plan (2)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
7	Isabela Settlement					
7-1	La Suerte Cluster	5			(1) Rehabilitation of Road (1-1) La Suerte-Buenavista including Bridge (2 km) (1-2) Buenavista-Victory (3.0 km) (1-3) Buenavista-San Marcelo including bridges (5 km) (1-4) San Vicente-Macalauat (4 km) (1-5) La Suerte-Lunac (1.2 km)	
	La Suerte		(2) Solar Dryer (1 unit) (4) MPP (200 m) (7) Warehouse for coop	(6) Installation of small irrigation pump		(3) School Building (5) Potable Water Supply System, grade up to level-3
	San Marcelo		(2) Solar Dryer (5 units) (4) MPP (200 m)			(3) Potable Water Supply System, replace of pump and motor (5) Electricity (6) Rice and Corn Mill (7) School Building (8) Health Center (9) Thresher (10) Day Care Center (11) Waiting Shed (12) Bry Hall
	Victory		(2) Solar Dryer (3 units) (7) Mechanical Dryer (11) MPP (200 m)	(5) Installation of small irrigation pumps from spring to farm 3units		(3) Electricity (4) Drinking Well 4 units 30 m (6) Tractor 4WD (8) Community Center (9) School Buildings and Fence (10) Day Care Center (12) Bry Hall (13) Thresher
	Buenavista		(2) Solar Dryer (4 units) (7) MPP (200 m)			(3) Electricity (4) Bry Hall/ Community Center (5) Thresher (6) Drinking Well 4 units 27 m deep (8) School Buildings and Fence (9) Day Care Center
	San Vicente		(3) Solar Dryer 4 units and MPP 400 m (10) Mechanical Dryer	(9) Installation of small irrigation pump		(2) Electricity (4) Tractor 1 unit of 4WD (5) Drinking Wells (6) School Buildings (7) Bry Hall/ Community Center (8) Day Care Center

Table F-1-1 Barangay Development Plan (3)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
7-2	Dipasivi Cluster	4				
	Dipacamo		(4) Mechanical Dryer 60 cav/D (7) Solar Dryer (3 units)		(1) Construction of FTMR including Bridge (5.0 km)	(2) School Building (3) Health Center (5) 4WD Tractor (6) Water Supply System (8) Day Care Center
	Palawan		(4) MPP (200 m) (5) Warehouse	(8) Installation of small irrigation pump	(1) Rehabilitation of Bry roads (5.0 km)	(2) Bry Hall (3) School Building (6) Mini-Sport Coulisium (7) Drinking Well
	Sinalugan		(3) MPP (200 m)		(1) Construction of FTMR, barangay to farm (15 km)	(2) Concrete Bry Hall (4) School Building (2 rooms) (5) Health Center
	Villa Remedios		(3) Solar Dryer (3 units)		(1) Construction FTMR, Dipacamo to Villa Remedios including bridge (3.0 km) (4) Construction of FTMR, Palawan to Villa Remedios (2.5 km) (5) Construction of FTMR, barangay to farm (5 km)	(2) Electricity (6) Bry Hall
7-3	Censa Cluster	5				
	Centro-I		(4) Solar Dryer (2 units)		(1) Rehabilitation of Centro-I to La Suerte (6 km) (2) Rehabilitation of Centro-I to Nakar (2 km) (5) Bry Road	(3) Potable Water Well 25 units
	Centro-II				(1) Rehabilitation of Centro-II to Magleticial (5 km) (2km in Bry) (2) Rehab. of Centro-II to Estella (L=3 km) (2 km) (3) Bry Road	(4) Potable Water Well 15 units
	Nakar		(5) MPP (4 x 200 m)		(1) Rehabilitation of Nakar to Centro-II (3.0 km) (1.5 km in Bry) (2) Rehabilitation of Nakar to San Vicente (3.5 km) (2 km in Bry) (3) Rehabilitation of Nakar to La Suerte (3 km) (1.5 km in Bry) (4) Bry Road (2 km)	(6) Potable Water Well 4 units
	Estrella		(3) MPP (3 x 200 m)		(1) Rehabilitation of Estrella to Centro-II (3.0 km) (1.0 km in Bry) (2) Construction of Estrella to Narra (3 km) (6) Bry Road (2 km)	(4) Bry Hall (5) School Building
	Anonang		NA	NA	NA	NA

Table F-1-1 Barangay Development Plan (4)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
8	Minagbag	1	(4) MPP (5 units) (5) Mechanical Dryer: Capacity = 150 cav/D	(3) Padapad Communal Irrigation Project (A=45 ha) (5) Magmat Communal Irrigation Project (A=300 ha) (7) Manga-nangamot Communal Irrigation Project (A=43 ha)	(2) Rehabilitation of FTMR (2-1) Aggasaid to ISF Rd, (3.5 km) (2-2) Sabado to Rainfed area (2-3) Minagbag to Magamot Communal Irrigation Project, (3.5 km) (2-4) Avecilla along LAT. Exstra Rd to NIA Canal, (1.0 km) (2-5) Valdez Rd., (1.5 km) (2-6) Leal Rd., (1.5 km)	(1) Level-2 Water Supply System for 465 HH (Deep tube well + Elevated Tank) (8) Multi-purpose Social Center, 25m x 40m (9) Warehouse, Capa; 10,000 cavems, 25 m x 40m
9	Cabaruan	1	(4) Solar Dryer (3 units)	(1) Caunayan Communal Irrigation Project (T=600 ha, A=200 ha)	(2) Rehabilitation of Road to Quimala including 4 box-culverts (12 km) (3) Road to CIP dam site including 2 box culverts (3 km) (7) Rehabilitation of FTMR upto access road to dam site (2 km)	(5) Bry center com Solar Dryer (6) Rehab. Daycare Center
10	Capirpiriwan	1		(1) Capirpirwan Communal Irrigation Project (T=140 ha, A=140 ha) (2) Installation of small irrigation pump ; 2 units; 4 inch, 16 hp	(3) Rehab. R4 0.4 km (4) Rehab. R5 0.9 km (5) Rehab. R6 5.0 km (6) Rehab. R11 1.5 km (7) Rehab. R8 1.8 km (8) Rehab. R7 2.0 km (9) Rehab. R2 4.2 km (10) Rehab. R10 2.5 km (11) Rehab. R9 0.8 km (12) Rehab. R3 0.4 km (13) Rehab. R12 0.25 km (14) Rehab. R1 4.0 km	(15) Grade up Level-1 to Level-3
11	Fermeldy	1	(4) MPP (L=1,200 m) (6) Solar Dryer (12 units) (8) Mechanical Dryer (1 unit)	(2) Installation of small irrigation pump	(3) Rehabilitation of Road Fermeldy to Santa	(1) School Building (5) Health Center (7) 4 Wheel Tractor, 1 unit
12	Luzon	1	(1) MPP (1,000 m)	(3) Drainage along railway (3 km)	(2) Rehabilitation of FTMR (600 m) (6) Rehabilitation of Residential Road (4.4 km)	(4) School (5) Church

Table F-1-1 Barangay Development Plan (5)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
13	Progreso	1	(2) Solar Dryer (2 units)		(1) Rehabilitation of Road; Progreso to Villa Sanchez (15 km) (3) Box Culvert 1 unit (within Bry) (6) Rehabilitation of Road; Progreso to Rogos (4 km)	(4) Potable Water 4 units (5) Electrification
14	Yeban Nort/Benito Soliven					
	Yeban Norte		(5) Solar Dryer (4 units)		(2) Construction of FTMR (2-1) Antigo to Gayong-Gayong (2 km) (2-2) Turod to Sunlife (3 km) (2-3) Barikik to Punit (2 km) (2-4) Kainiogan to Surcoc (1.5 km) (3) Concreting of Bry Road (2 km) (6) Maintenance of Road to Poblasion (5 km)	(1) School Building (4) Children Park 3 units
	Yeban Sur		(1) Solar Dryer (5 units)		(3) Rehabilitation of Road in Bry (5 km)	(2) Water Pump for potable water 20 units (5) School Building
15	Canan	1	(2) MPP (2.5 km) (3) Solar Dryer (1 unit)	(6) Concrete Lining on Irrigation Canal (NIA)	(1) Construction of FTMR (5.0 km)	(4) Health Center (5) Day Care Center
16	Andarayan	1	(4) MPP (500 m) (6) Mechanical Dryer (30-50 Cav/D)	(1) Andarayan Communal Pump Irrigation Project (T=900 ha, A=340 ha)	(2) Rehabilitation of FTMR (2-1) Road within Bry (200 m) (2-2) Road within Bry (110 m) (2-3) Road within Farm (6 km)	(3) Water System to Level 2 (5) Transportation Facility 4WD 1 unit (7) Learning & Research Center 1 unit
17	Bantug Petines	1	(4) Solar Dryer (2 units) (5) MPP (300 m)	(12) Rehabilitation of Drainage Crossing on Irrigation Canal	(2) Rehabilitation of FTMR (3 km) (3) Box Culvert (3)	(1) Multi-Purpose Communication Center (15 x 33) (6) Sport Complex 1 unit (7) School Building (8) RIC Building (4x6 m) (9) Concrete Fence (10) Stage (11) Artificial well 3 units

Table F-1-1 Barangay Development Plan (6)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
18	Dalena & Simanu	3				
	Dalena				(1) Rehabilitation of Road From San Pabro to Dalena w/ overflow bridge (80m) (6.5 km) (2) Rehabilitation of Road From Dalena to San Vicente (4.0 km)	(3) 4 Wheel Tractor (4) Electricity (5) Coop financial
	Simanu Norte		(6) Solar Dryer (4 units)	(4) Rehabilitation of Communal Irrigation System and extension of 1.5 km of Main Canal	(1) Rehabilitation of Road From S.N. to National Highway (4.0 km) (2) Rehabilitation of Road From S.N. to Nagbanaalau Sitio (3.0 km) (3) Rehabilitation of Road S.N. to Corn Farm including bridge (5 km)	(5) Potable Water System 1 km away from Bry center
	Simanu Sur				(1) Rehabilitation of Road From S.S. to junction of National road to S.N (2.5 km) (2) Bridge of the road to S.N.	(3) Protection of flood water invasion
19	Dammao	1			(2) Rehabilitation of FTMR (2-1) Dammao to Main Canal (1.0 km) (2-2) Main Canal to Farm (1.0 km) (2-3) Dammao to Farm (village) (900 m)	(1) Bry Hall, 6 x 8 m (3) Potable water pump 5 units
20	San Miguel (Burgos)	1		(1) Installation of small irrigation pumps (23 unit)	(2) Rehabilitation of FTMR (2-1) San Miguel to Calabban (4 km) (2-2) San Miguel to Divisoria (3 km) (4) Rehab. of Roads in residential area (4.4 km)	(3) Multi-purpose School
21	San Ramon	1	(7) Solar Dryer (1 unit)		(1) Rehabilitation of Road and construction of bridge on Tao Tao River (80 m), (1.5 km) (3) Construction of Provincial Road to San Manuel (1.0 km) (4) Construction of road to San Rafael (1.0 m) (5) Rehabilitation of FTMR to San Andres-Macatal (1.0 m) (6) Rehabilitation of FTMR to Apiat (1.0 km)	(2) Multi-purpose Bry Hall (35 m x 15 m) (8) Potable Water Supply System grade up Level-3

Table F-1-1 Varangay Development Plan (7)

No.	Name of ARC	No. Bgy	Post Harvest	Irrigation System	Farm To Market Road	Water Supply & Others
22	Viola Estate Cluster	4				
	Santiago		(3) Warehouse (30 x 15 m)		(1) Rehabilitation of FTMR to San Rouque (8 km) including 3 km concrete + 5 km Gravel	(2) 4 Wheel Tractor 2 units (4) Capital
	Banquero				(2) Rehabilitation of Banquero-National Highway including bridge (3.0 km) (3) Rehabilitation of Banquero-Santiago Roads (2.0 km)	(1) 4 Wheel Tractor 4 units (4) School Buildings (5) Community Center (6) Bry Hall (under construction)
	Sallucong		(3) Solar Dryer (12 units) (4) Mechanical Dryer (2 x 150 cav./10hrs)	(5) Installation of small irrigation pumps	(2) Rehabilitation of Sallucong-Santiago road (2.0 km)	(1) Flood Control (6) 4 Wheel Tractor 2 (7) 2 Wheel Tractor 10
	Binarsang				(2) Rehabilitation of Bibarsang-Sallucong road including overflow bridge (1.0 km) (3) Rehabilitation of Bibarsang-Sto. Domingo road (1.0 km)	(1) Flood Control (4) 4 Wheel Tractor 1 (5) Corn Sheller 2

F.2 Post Harvest Development

The development of post harvest facilities are considered primarily for saving production losses and securing higher selling prices for agricultural products. The post harvest facilities consist of drying facilities and warehouses for storage.

F.2.1 Drying Facilities

(1) General

There are three types of dryings facilities considered in the study: solar dryer, multi-purpose pavement, (MPP) and a mechanical dryer.

A solar dryer is a concrete pavement used for drying agricultural products such as rice and corn. It is constructed in an area owned by the barangay, cooperative or an individual. Sometimes, it used for recreational purposes. The Department of Agriculture (DA) is providing drying facilities to farmers with an area of 15.0 m x 28.0 m. x 0.10 m. (thickness).

A multi-purpose pavement is a concreted portion of a road usually 100 linear meters/unit which is used for drying farm produce. However, drying of agricultural products on MPP often deteriorates the quality due to breakage, causes traffic and even hazardous to the commuters.

Mechanical dryer is a drying machine usually used during rainy season. Some cooperatives have purchased or availed this facility but not utilized well due high operational cost.

Total required capacities of these facilities are depending on the projected agricultural products which is described on Table C-2-3 in Appendix C Agriculture. Following percentage to projected agricultural products will be considered for drying paddy and corn. Table F-2-1 shows drying agricultural products by categories for each ARC.

Private Drying Facilities

Solar Dryer	15 % of projected Production

Drying Facilities Operated by Barangay office

Solar Dryer and MPP	65 % of Projected Product of paddy and corn

Drying Facilities Operated by Co-operative

Solar Dryer attached to Warehouse 15 % of Projected Product of paddy and corn

Mechanical Dryer 5 % of Projected Product of paddy and corn

ARC Development plans have been classified following five (5) development categories.

Category	Classification	Topography	Possibility of Irrigation Development
A	Prime Agriculture Area	Almost Flat Area	-
B	Developing Area	Almost Flat Area	-
C	Developing Area	Mixture Flat & Hilly	Yes
D	Developing Area	Mixture Flat & Hilly	No
E	Maginal Area	Almost Hilly Area	-

Drying facilities will be implemented in accordance with development category as mentioned above; Category A, B and C will implement drying facilities in short term development stage and middle term development stage, and Category D and E will implement during short, middle and long term development stage in consideration with agricultural development. Implementation schedules by stage are as mentioned below.

Category A, B and C

Short Term Development One third of value of projected products including dryer area in barangay development plan.

Middle Term Development Remain area for dryer.

Category D and E

Short Term Development smaller value between 15 % of projected products of paddy and corn, and dryer's area in the barangay development plan.

Middle Term Development One third of value of projected products minus area to be developed under short term development.

Long Term Development Remain area for dryer.

(2) Solar Dryer and MPP Operated by Barangay Office

a) Required Area of Solar Dryer and MPP by Crop

Required area of solar dryer and MPP operated by Barangay office can be estimated by following procedure and sample of procedure (in case of Lopogan ARC) is given below;

Conditions :

Production Value by paddy	: 39,000 cavan
Targeted Production Value (65 % of above)	: 25,350 cavan = 39,000 x 0.65
Harvesting Period	: 30 days or 60 days
Conversion Rate (harvested product to dried)	: 0.845
Spreading Thickness	: 0.135 m
Volume per Cavan	: 0.15 cu.m/cavan
Drying Duration Necessary for One Drying Batch	: 2 days

Estimation :

Required area for solar dryer by crop and season operated by Barangay can be estimated by below method and required area by ARC is shown on Table F-2-2.

Required Area = (Targeted Production Value) / (Harvesting Period) / (Conversion Rate) / (Spreading Thickness) / (Volume per Cavan) / (Drying Duration)
= 25,350 / 30 / 0.845 / 0.135 / 0.15 / 2 = 24,691 sq.m

b) Development Schedule of Solar Dryer

Following procedure will be considered for setting development schedule season, and development schedule by each Barangay is given in Table F-2-2.

Required Area of Solar Dryer (S/D) operated by Barangay :
27,477 sq.m = 24,691 (paddy) + 2,786 (corn)

Existing Facilities	:	Solar Dryer	5,040 sq.m
		MPP	4,000 sq.m
		Total	9,040 sq.m

Projected Area	18,437 sq.m = 27,477 – 9,040	
Short Term Development	1/3 of projected product	6,146 sq.m = 18,437 x 1/3
	Barangay Development Plan	2,940 sq.m (S/D)
	Barangay Development Plan	0 sq.m (MPP)
	Total	2,940 sq.m
Middle Term Development	12,291 sq.m = 18,437 x 2/3	

(3) Dryer Facilities Operated by Cooperative

a) Required Area of Solar Dryer by Crop

Required area of solar dryer by crop and season operated by cooperative can be estimated by following procedure and sample of procedure (in case of Lopogan ARC) is giving below;

Conditions :

Production Value by crop	: 39,000 cavan
Targeted Production Value (15 % of above)	: 5,850 cavan = 39,000 x 0.15
Harvesting Period	: 30 days or 60 days
Conversion Rate (harvested product to dried)	: 0.845
Spreading Thickness	: 0.135 m
Volume per Cavan	: 0.15 cu.m/cavan
Drying Duration Necessary for One Drying Batch	: 2 days

Estimation :

Required area for solar dryer operated by Barangay can be estimated by below method and required area by ARC is shown on Table F-2-3.

Required Area by Paddy = (Targeted Production Value) / (Harvesting Period) / (Conversion Rate) / (Spreading Thickness) / (Volume per Cavan) / (Drying Duration)

= 5,850 / 30 / 0.845 /0.135 / 0.15 / 2 = 5,698 sq.m

Required Area by Corn = 1,320 / 60 / 0.845 / 0.135 / 0.15 / 2 = 643 sq.m

Total Area = 5,698 + 643 = 6,341 sq.m

b) Development Schedule of Solar Dryer

Solar dryer operated by cooperative will be developed after cooperative will be active and land acquisition will be set up.

(4) Mechanical Dryer Operated by Cooperative

a) Required Area of Mechanical Dryer by Crop

Required capacity of mechanical dryer operated by cooperative can be estimated by following procedure and sample of procedure (in case of Lopogan ARC) is giving below;

Conditions :

Production Value by crop	: 39,000 cavan
Targeted Production Value (5 % of above)	: 1,950 cavan = 39,000 x 0.05
Harvesting Period	: 30 days or 60 days
Drying Duration Necessary for One Drying Batch	: 1 days

Estimation :

Required capacity for mechanical dryer operated by cooperative can be estimated by below method and required area by ARC is shown on Table F-2-4. The projected capacity of mechanical dryer is determined by reducing in existing capacity.

Required Capacity = (Targeted Production Value) / (Harvesting Period) / (Drying Duration)
= 1,950 / 30 / 1 = 65 cavan (paddy)

Required Capacity = (Targeted Production Value) / (Harvesting Period) / (Drying Duration)
= 440 / 60 / 1 = 7 cavan (corn)

b) Development Schedule of Mechanical Dryer

Mechanical dryer operated by cooperative will be developed in the warehouse after cooperative will be active and land acquisition will be set up.

F.2.2 Warehouse

A warehouse is a facility wherein agricultural products can be stored for a longer time while waiting for a higher price. In the study, it is projected that about twenty (20) percent of the dried agricultural products will be stored.

Projected area (floor size) of warehouse by Barangay is estimated by following procedure;

i) Required net floor area by crop and season is calculated by method mentioned below.
ii) Required total net area by ARC is estimated as a sum of required net floor area by crop at same season.
iii) Required net floor area by ARC is considered as bigger area between required total net floor area by wet season and required total net floor area by dry season.
iv) Required net floor area by Barangay is given by required net floor area by ARC divided by number of Barangay.
v) Projected net floor area by Barangay is calculated by required net floor area by Barangay by minus 70 percent of existing warehouse floor area. 30 percent of floor area of existing warehouse is considered as a space for preventing moisture from wall and working space.
vi) Projected net floor size is considered based on the projected net floor area by Barangay.
vii) Planned floor size of warehouse is designed dimensions of projected net floor size plus 3.0 m, which is the space for preventing moisture from wall and working space. Number means number of warehouses planed in ARC.

Required net floor area by crop and season is estimated by following procedure

Conditions :

Paddy dried by solar dryer operated by cooperative	:	7,170 cavan
Paddy dried by Mechanical dryer operated by cooperative	:	2,390 cavan
Total of the above	:	9,560 cavan

Pilling Number		: 20 cavans
Size of one cavan sack	(length)	: 0.80 m
	(width)	: 0.40 m

Estimation :

Required net area of warehouse by crop and season can be estimated by below method and planned floor area of projected warehouse in Barangay is shown on Table F-2-5.

Required Net Floor Area by Crop and Season

= (Total of agricultural production dried by solar dryer and mechanical dryer operated by cooperative) / (Pilling number) x (length of one cavan sack) x (Width of one cavan sack)

= 7,800 / 20 x 0.80 x0.40 = 125 sq.m

Required Net Floor Area by Season

= (Required Net Floor Area by Paddy) + (Required Net Floor Area by Corn)

= 125 + 35 = 192 sq.m

Table F-2-1 Drying Agricultural Products by Categories (1)

No.	Name of ARC	Season	Crop	Projected Agricultural Product	Drying Facilities by Operating Organization								
					Farmers' Drying Facilities		Barangay's Drying Facilities		Cooperative's Drying Facilities		Mechanical Dryer (under cooperative)		Total
				(cavan)	%	(cavan)	%	(cavan)	%	(cavan)	%	(cavan)	(cavan)
1	Lapogan	Wet	Paddy	39,000	15	5,850	65	25,350	15	5,850	5	1,950	39,000
			Corn	8,800	15	1,320	65	5,720	15	1,320	5	440	8,800
		Dry	Paddy	39,000	15	5,850	65	25,350	15	5,850	5	1,950	39,000
			Corn	8,800	15	1,320	65	5,720	15	1,320	5	440	8,800
2	Quiling	Wet	Paddy	18,120	15	2,718	65	11,778	15	2,718	5	906	18,120
			Corn	4,560	15	684	65	2,964	15	684	5	228	4,560
		Dry	Paddy	18,120	15	2,718	65	11,778	15	2,718	5	906	18,120
			Corn	4,560	15	684	65	2,964	15	684	5	228	4,560
3	(omitted)												
4	San Manuel	Wet	Paddy	26,400	15	3,960	65	17,160	15	3,960	5	1,320	26,400
			Corn	24,000	15	3,600	65	15,600	15	3,600	5	1,200	24,000
		Dry	Paddy	23,000	15	3,450	65	14,950	15	3,450	5	1,150	23,000
			Corn	24,000	15	3,600	65	15,600	15	3,600	5	1,200	24,000
5	San Miguel (Ramon)	Wet	Paddy	39,240	15	5,886	65	25,506	15	5,886	5	1,962	39,240
			Corn	4,800	15	720	65	3,120	15	720	5	240	4,800
		Dry	Paddy	39,240	15	5,886	65	25,506	15	5,886	5	1,962	39,240
			Corn	4,800	15	720	65	3,120	15	720	5	240	4,800
6	Amulungan - Rizal	Wet	Paddy	36,600	15	5,490	65	23,790	15	5,490	5	1,830	36,600
			Corn	0	15	0	65	0	15	0	5	0	0
		Dry	Paddy	36,600	15	5,490	65	23,790	15	5,490	5	1,830	36,600
			Corn	0	15	0	65	0	15	0	5	0	0
7-1	Isabela Settlement La Suerte Cluster	Wet	Paddy	15,440	15	2,316	65	10,036	15	2,316	5	772	15,440
			Corn	49,000	15	7,350	65	31,850	15	7,350	5	2,450	49,000
		Dry	Paddy	14,320	15	2,148	65	9,308	15	2,148	5	716	14,320
			Corn	49,000	15	7,350	65	31,850	15	7,350	5	2,450	49,000
7-2	Isabela Settlement Dipasivi Cluster	Wet	Paddy	7,360	15	1,104	65	4,784	15	1,104	5	368	7,360
			Corn	27,300	15	4,095	65	17,745	15	4,095	5	1,365	27,300
		Dry	Paddy	5,760	15	864	65	3,744	15	864	5	288	5,760
			Corn	27,300	15	4,095	65	17,745	15	4,095	5	1,365	27,300
7-3	Isabela Settlement Cenea Cluster	Wet	Paddy	16,880	15	2,532	65	10,972	15	2,532	5	844	16,880
			Corn	43,400	15	6,510	65	28,210	15	6,510	5	2,170	43,400
		Dry	Paddy	9,840	15	1,476	65	6,396	15	1,476	5	492	9,840
			Corn	43,400	15	6,510	65	28,210	15	6,510	5	2,170	43,400
8	Minagbag	Wet	Paddy	61,440	15	9,216	65	39,936	15	9,216	5	3,072	61,440
			Corn	24,960	15	3,744	65	16,224	15	3,744	5	1,248	24,960
		Dry	Paddy	52,200	15	7,830	65	33,930	15	7,830	5	2,610	52,200
			Corn	24,960	15	3,744	65	16,224	15	3,744	5	1,248	24,960

Table F-2-1 Drying Agricultural Products by Categories (2)

No.	Name of ARC	Season	Crop	Projected Agricultural Product	Drying Facilities by Operating Organization								
					Farmers' Drying Facilities		Barangay's Drying Facilities		Cooperative's Drying Facilities		Mechanical Dryer (under cooperative)		Total
				(cavan)	%	(cavan)	%	(cavan)	%	(cavan)	%	(cavan)	(cavan)
9	Cabaruan	Wet	Paddy	17,385	15	2,608	65	11,300	15	2,608	5	869	17,385
			Corn	20,480	15	3,072	65	13,312	15	3,072	5	1024	20,480
		Dry	Paddy	15,300	15	2,295	65	9,945	15	2,295	5	765	15,300
			Corn	20,480	15	3,072	65	13,312	15	3,072	5	1024	20,480
10	Capirpiriwan	Wet	Paddy	10,200	15	1,530	65	6,630	15	1,530	5	510	10,200
			Corn	11,440	15	1,716	65	7,436	15	1,716	5	572	11,440
		Dry	Paddy	10,200	15	1,530	65	6,630	15	1,530	5	510	10,200
			Corn	11,440	15	1,716	65	7,436	15	1,716	5	572	11,440
11	Fermeldy	Wet	Paddy	0	15	0	65	0	15	0	5	0	0
			Corn	19,600	15	2,940	65	12,740	15	2,940	5	980	19,600
		Dry	Paddy	0	15	0	65	0	15	0	5	0	0
			Corn	19,600	15	2,940	65	12,740	15	2,940	5	980	19,600
12	Luzon	Wet	Paddy	49,800	15	7,470	65	32,370	15	7,470	5	2,490	49,800
			Corn	1,680	15	252	65	1,092	15	252	5	84	1,680
		Dry	Paddy	49,800	15	7,470	65	32,370	15	7,470	5	2,490	49,800
			Corn	1,680	15	252	65	1,092	15	252	5	84	1,680
13	Progreso	Wet	Paddy	5,220	15	783	65	3,393	15	783	5	261	5,220
			Corn	7,630	15	1,145	65	4,960	15	1,145	5	380	7,630
		Dry	Paddy	5,220	15	783	65	3,393	15	783	5	261	5,220
			Corn	7,630	15	1,145	65	4,960	15	1,145	5	380	7,630
14	Yeban Nort/Benito Soliven	Wet	Paddy	10,208	15	1,531	65	6,635	15	1,531	5	511	10,208
			Corn	60,000	15	9,000	65	39,000	15	9,000	5	3,000	60,000
		Dry	Paddy	4,800	15	720	65	3,120	15	720	5	240	4,800
			Corn	60,000	15	9,000	65	39,000	15	9,000	5	3,000	60,000
15	Canan	Wet	Paddy	81,360	15	12,204	65	52,884	15	12,204	5	4,068	81,360
			Corn	0	15	0	65	0	15	0	5	0	0
		Dry	Paddy	81,360	15	12,204	65	52,884	15	12,204	5	4,068	81,360
			Corn	0	15	0	65	0	15	0	5	0	0
16	Andarayan	Wet	Paddy	37,800	15	5,670	65	24,570	15	5,670	5	1,890	37,800
			Corn	960	15	144	65	624	15	144	5	48	960
		Dry	Paddy	37,800	15	5,670	65	24,570	15	5,670	5	1,890	37,800
			Corn	960	15	144	65	624	15	144	5	48	960
17	Bantug Petines	Wet	Paddy	53,280	15	7,992	65	34,632	15	7,992	5	2,664	53,280
			Corn	0	15	0	65	0	15	0	5	0	0
		Dry	Paddy	53,280	15	7,992	65	34,632	15	7,992	5	2,664	53,280
			Corn	0	15	0	65	0	15	0	5	0	0

Table F-2-1 Drying Agricultural Product by Categories (3)

No.	Name of ARC	Season	Crop	Projected Agricultural Product	Drying Facilities by Operating Organization								
					Farmers' Drying Facilities		Barangay's Drying Facilities		Cooperative's Drying Facilities		Mechanical Dryer (under cooperative)		Total
				(cavan)	%	(cavan)	%	(cavan)	%	(cavan)	%	(cavan)	(cavan)
18	Dafena & Simanu	Wet	Paddy	41,100	15	6,165	65	26,715	15	6,165	5	2,055	41,100
			Corn	38,400	15	5,760	65	24,960	15	5,760	5	1,920	38,400
		Dry	Paddy	28,700	15	4,305	65	18,655	15	4,305	5	1,435	28,700
			Corn	38,400	15	5,760	65	24,960	15	5,760	5	1,920	38,400
19	Dammao	Wet	Paddy	16,700	15	2,505	65	10,855	15	2,505	5	835	16,700
			Corn	0	15	0	65	0	15	0	5	0	0
		Dry	Paddy	16,700	15	2,505	65	10,855	15	2,505	5	835	16,700
			Corn	0	15	0	65	0	15	0	5	0	0
20	San Miguel (Burgos)	Wet	Paddy	20,800	15	3,120	65	13,520	15	3,120	5	1,040	20,800
			Corn	20,800	15	3,120	65	13,520	15	3,120	5	1,040	20,800
		Dry	Paddy	5,600	15	840	65	3,640	15	840	5	280	5,600
			Corn	20,800	15	3,120	65	13,520	15	3,120	5	1,040	20,800
21	San Ramon	Wet	Paddy	16,200	15	2,430	65	10,530	15	2,430	5	810	16,200
			Corn	5,360	15	804	65	3,484	15	804	5	268	5,360
		Dry	Paddy	16,200	15	2,430	65	10,530	15	2,430	5	810	16,200
			Corn	5,360	15	804	65	3,484	15	804	5	268	5,360
22	Viola Estate Cluster	Wet	Paddy	0	15	0	65	0	15	0	5	0	0
			Corn	62,800	15	9,420	65	40,820	15	9,420	5	3,140	62,800
		Dry	Paddy	0	15	0	65	0	15	0	5	0	0
			Corn	62,800	15	9,420	65	40,820	15	9,420	5	3,140	62,800
Total of Wet Season Crop				1,056,503		158,476		686,727		158,476		52,824	1,056,503
Total of Dry Season Crop				999,010		149,852		649,357		149,852		49,949	999,010
Grand Total				2,055,513		308,328		1,336,084		308,328		102,773	2,055,513

Table F-2-2 Required Area of Solar Dryer by Barangay Office and Development Schedule (1)

No.	Name of ARC	Season	Crop	Targeted Production Value	Harvesting Period		Conversion Rate	Spreading Thickness	Volume per one cavan	Drying Duration	Required Area by Crop	Required Area for Solar Dryer by Season	Required Area for Solar Dryer	Existing Facilities		Projected Area	Projected Facilities by development Stage				
					Name of Month	Number								S/D	MPP		Short		Medium	Long	Total
																	S/D	MPP	S/D	S/D	
				(cavan)		(day)		(m)	(cu.m/cav)	(day)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)
1	Lapogan	Wet	Paddy	25,350	Sep	30	0.845	0.135	0.15	2	24,691	27,477	27,477	5,040	4,000	18,437	6,146	0	12,291	0	18,437
			Corn	5,720	Aug-Sep	60	0.845	0.135	0.15	2	2,786										
		Dry	Paddy	25,350	Feb	30	0.845	0.135	0.15	2	24,691	27,477									
			Corn	5,720	Feb-Mar	60	0.845	0.135	0.15	2	2,786										
2	Quiling	Wet	Paddy	11,778	Oct	30	0.845	0.135	0.15	2	11,472	11,472	11,472	2,500	4,020	4,952	1,384	800	2,768	0	4,952
			Corn	2,964	Sep	30	0.845	0.135	0.15	2	(2,887)										
		Dry	Paddy	11,778	Mar	30	0.845	0.135	0.15	2	11,472	11,472									
			Corn	2,964	Apr	30	0.845	0.135	0.15	2	(2,887)										
3	(omitted)																				
4	San Manuel	Wet	Paddy	17,160	Oct	30	0.845	0.135	0.15	2	16,714	24,311	24,311	420	200	23,691	5,823	400	5,823	11,645	23,691
			Corn	15,600	Sep-Oct	60	0.845	0.135	0.15	2	7,597										
		Dry	Paddy	14,950	Apr	30	0.845	0.135	0.15	2	14,562	22,159									
			Corn	15,600	Mar-Apr	60	0.845	0.135	0.15	2	7,597										
5	San Miguel (Ramon)	Wet	Paddy	25,506	Oct	30	0.845	0.135	0.15	2	24,843	26,362	26,362	3,780	320	22,262	7,421	0	14,841	0	22,262
			Corn	3,120	Sep-Oct	60	0.845	0.135	0.15	2	1,519										
		Dry	Paddy	25,506	Mar	30	0.845	0.135	0.15	2	24,843	26,362									
			Corn	3,120	Mar-Apr	60	0.845	0.135	0.15	2	1,519										
6	Amulungan - Rizal	Wet	Paddy	23,790	Oct	30	0.845	0.135	0.15	2	23,172	23,172	23,172	900	0	22,272	7,424	0	14,848	0	22,272
			Corn	0	-	30	0.845	0.135	0.15	2	0										
		Dry	Paddy	23,790	Mar-Apr	30	0.845	0.135	0.15	2	23,172	23,172									
			Corn	0	-	30	0.845	0.135	0.15	2	0										
7-1	Isabela Settlement La Suerte Cluster	Wet	Paddy	10,036	Oct	30	0.845	0.135	0.15	2	9,775	25,286	25,286	2,520	1,560	21,206	5,302	0	5,302	10,602	21,206
			Corn	31,850	Sep-Oct	60	0.845	0.135	0.15	2	15,511										
		Dry	Paddy	9,308	Mar	30	0.845	0.135	0.15	2	9,066	24,577									
			Corn	31,850	Mar-Apr	60	0.845	0.135	0.15	2	15,511										
7-2	Isabela Settlement Dipasivi Cluster	Wet	Paddy	4,784	Oct	30	0.845	0.135	0.15	2	4,660	13,302	13,302	2,200	440	10,662	2,666	0	2,666	5,330	10,662
			Corn	17,745	Sep-Oct	60	0.845	0.135	0.15	2	8,642										
		Dry	Paddy	3,744	Mar	30	0.845	0.135	0.15	2	3,647	12,289									
			Corn	17,745	Mar-Apr	60	0.845	0.135	0.15	2	8,642										
7-3	Isabela Settlement Cenea Cluster	Wet	Paddy	10,972	Oct	30	0.845	0.135	0.15	2	10,687	24,426	24,426	2,940	9,840	11,646	2,699	850	2,699	5,398	11,646
			Corn	28,210	Sep-Oct	60	0.845	0.135	0.15	2	13,739										
		Dry	Paddy	6,396	Mar	30	0.845	0.135	0.15	2	6,230	19,969									
			Corn	28,210	Mar-Apr	60	0.845	0.135	0.15	2	13,739										
8	Minagbag	Wet	Paddy	39,936	Sep	30	0.845	0.135	0.15	2	38,898	46,799	46,799	9,900	200	36,699	12,233	0	24,466	0	36,699
			Corn	16,224	Aug-Sep	60	0.845	0.135	0.15	2	7,901										
		Dry	Paddy	33,930	Apr	30	0.845	0.135	0.15	2	33,048	40,949									
			Corn	16,224	Mar-Apr	60	0.845	0.135	0.15	2	7,901										

S/D = Solar Dryer

Table F-2-2 Required Area of Solar Dryer by Barangay Office and Development Schedule (2)

No.	Name of ARC	Season	Crop	Targeted Production Value	Harvesting Period		Conversion Rate	Spreading Thickness	Volume per one cavan	Drying Duration	Required Area by Crop	Required Area for Solar Dryer by Season	Required Area for Solar Dryer	Existing Facilities		Projected Area	Projected Facilities by development Stage				
					Name of Month	Number								S/D	MPP		Short		Medium	Long	Total
																	S/D	MPP	S/D	S/D	
				(cavan)		(day)		(m)	(cu.m/cav)	(day)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)
9	Cabaruan	Wet	Paddy	11,300	Nov	30	0.845	0.135	0.15	2	11,006	11,006	16,170	840	525	14,805	4,935	0	9,870	0	14,805
			Corn	13,312	Sep	30	0.845	0.135	0.15	2	(12,966)										
		Dry	Paddy	9,945	Apr	30	0.845	0.135	0.15	2	9,687	16,170									
			Corn	13,312	Mar-Apr	60	0.845	0.135	0.15	2	6,483										
10	Capirpiriwan	Wet	Paddy	6,630	Oct	30	0.845	0.135	0.15	2	6,458	10,079	10,079	2,520	480	7,079	2,360	0	4,719	0	7,079
			Corn	7,436	Sep-Oct	60	0.845	0.135	0.15	2	3,621										
		Dry	Paddy	6,630	Mar	30	0.845	0.135	0.15	2	6,458	10,079									
			Corn	7,436	Mar-Apr	60	0.845	0.135	0.15	2	3,621										
11	Fermeldy	Wet	Paddy	0	-	30	0.845	0.135	0.15	2	0	6,204	6,204	3,360	0	2,844	948	0	1,896	0	2,844
			Corn	12,740	Aug-Sep	60	0.845	0.135	0.15	2	6,204										
		Dry	Paddy	0	-	30	0.845	0.135	0.15	2	0	6,204									
			Corn	12,740	Feb-Mar	60	0.845	0.135	0.15	2	6,204										
12	Luzon	Wet	Paddy	32,370	Sep	30	0.845	0.135	0.15	2	31,529	32,061	32,061	840	1,228	29,993	8,664	4,000	17,329	0	29,993
			Corn	1092	Aug-Sep	60	0.845	0.135	0.15	2	532										
		Dry	Paddy	32,370	Mar	30	0.845	0.135	0.15	2	31,529	32,061									
			Corn	1092	Feb-Mar	60	0.845	0.135	0.15	2	532										
13	Progreso	Wet	Paddy	3,393	Oct	30	0.845	0.135	0.15	2	3,305	5,721	5,721	420	0	5,301	1,325	0	1,325	2,651	5,301
			Corn	4,960	Sep-Oct	60	0.845	0.135	0.15	2	2,416										
		Dry	Paddy	3,393	Mar	30	0.845	0.135	0.15	2	3,305	5,721									
			Corn	4,960	Mar-Apr	60	0.845	0.135	0.15	2	2,416										
14	Yeban Nort/Benito Soliven	Wet	Paddy	6,635	Oct	30	0.845	0.135	0.15	2	(6,463)	18,993	22,032	4,290	0	17,742	5,914	0	11,828	0	17,742
			Corn	39,000	Aug-Sep	60	0.845	0.135	0.15	2	18,993										
		Dry	Paddy	3,120	Mar	30	0.845	0.135	0.15	2	3,039	22,032									
			Corn	39,000	Feb-Mar	60	0.845	0.135	0.15	2	18,993										
15	Canan	Wet	Paddy	52,884	Sep	30	0.845	0.135	0.15	2	51,510	51,510	51,510	2,100	1,600	47,810	13,990	5,840	27,980	0	47,810
			Corn	0	-	30	0.845	0.135	0.15	2	0										
		Dry	Paddy	52,884	Feb-Mar	60	0.845	0.135	0.15	2	25,755	25,755									
			Corn	0	-	30	0.845	0.135	0.15	2	0										
16	Andarayan	Wet	Paddy	24,570	Sep	30	0.845	0.135	0.15	2	23,932	24,236	24,236	1,260	0	22,976	6,992	2,000	13,984	0	22,976
			Corn	624	Aug-Sep	60	0.845	0.135	0.15	2	304										
		Dry	Paddy	24,570	Feb-Mar	60	0.845	0.135	0.15	2	11,966	12,270									
			Corn	624	Feb-Mar	60	0.845	0.135	0.15	2	304										
17	Bantug Petines	Wet	Paddy	34,632	Sep	30	0.845	0.135	0.15	2	33,732	33,732	33,732	840	1,600	31,292	10,031	1,200	20,061	0	31,292
			Corn	0	-	30	0.845	0.135	0.15	2	0										
		Dry	Paddy	34,632	Feb-Mar	60	0.845	0.135	0.15	2	16,866	16,866									
			Corn	0	-	30	0.845	0.135	0.15	2	0										

S/D = Solar Dryer

Table F-2-2 Required Area of Solar Dryer by Barangay Office and Development Schedule (3)

No.	Name of ARC	Season	Crop	Targeted Production Value	Harvesting Period		Conversion Rate	Spreading Thickness	Volume per one cavan	Drying Duration	Required Area by Crop	Required Area for Solar Dryer by Season	Required Area for Solar Dryer	Existing Facilities		Projected Area	Projected Facilities by development Stage				
					Name of Month	Number								S/D	MPP		Short		Medium	Long	Total
																	S/D	MPP	S/D	S/D	
				(cavan)		(day)		(m)	(cu.m/cav)	(day)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)
18	Dalena & Simanu	Wet	Paddy	26,715	Jul	30	0.845	0.135	0.15	2	26,021	26,021	26,021	4,200	1,168	20,653	5,163	0	5,163	10,327	20,653
			Corn	24,960	Aug-Sep	60	0.845	0.135	0.15	2	(12,156)										
		Dry	Paddy	18,655	Dec	30	0.845	0.135	0.15	2	18,170	18,170									
			Corn	24,960	Feb-Mar	60	0.845	0.135	0.15	2	(12,156)										
19	Dammao	Wet	Paddy	10,855	Dec	30	0.845	0.135	0.15	2	10,573	10,573	10,573	1,680	0	8,893	2,964	0	5,929	0	8,893
			Corn	0	-	30	0.845	0.135	0.15	2	0										
		Dry	Paddy	10,855	May	30	0.845	0.135	0.15	2	10,573	10,573									
			Corn	0	-	30	0.845	0.135	0.15	2	0										
20	San Miguel (Burgos)	Wet	Paddy	13,520	Nov	30	0.845	0.135	0.15	2	13,169	19,753	19,753	1,680	80	17,993	5,998	0	11,995	0	17,993
			Corn	13,520	Oct-Nov	60	0.845	0.135	0.15	2	6,584										
		Dry	Paddy	3,640	Apr	30	0.845	0.135	0.15	2	3,545	10,129									
			Corn	13,520	Apr-May	60	0.845	0.135	0.15	2	6,584										
21	San Ramon	Wet	Paddy	10,530	Sep	30	0.845	0.135	0.15	2	10,256	13,649	13,649	840	0	12,809	4,270	0	8,539	0	12,809
			Corn	3,484	Sep	30	0.845	0.135	0.15	2	3,393										
		Dry	Paddy	10,530	Feb-Mar	60	0.845	0.135	0.15	2	5,128	8,521									
			Corn	3,484	Mar	30	0.845	0.135	0.15	2	3,393										
22	Viola Estate Cluster	Wet	Paddy	0	-	30	0.845	0.135	0.15	2	0	19,880	19,880	7,140	0	12,740	4,247	0	8,493	0	12,740
			Corn	40,820	Aug-Sep	60	0.845	0.135	0.15	2	19,880										
		Dry	Paddy	0	-	30	0.845	0.135	0.15	2	0	19,880									
			Corn	40,820	Feb-Mar	60	0.845	0.135	0.15	2	19,880										
Total of Wet Season Crop				666,727							506,025	506,025									
Total of Dry Season Crop				649,357							422,857	422,857									
Grand Total				1,336,084									514,228	62,210	27,261	424,757	128,899	15,090	234,815	45,953	424,757

S/D = Solar Dryer

Table F-2-3 Required Area of Solar Dryer by Cooperative (1)

No.	Name of ARC	Number of Barangay	Season	Crop	Targeted Production Value	Harvesting Period		Conversion Rate	Spreading Thickness	Volume per one cavan	Drying Duration	Required Area by Crop	Required Area of Solar Dryer	Projected area of Solar Dryer	Projected area of Solar Dryer by Barangay	Size of Solar Dryer	
						Name of Month	Number									Size of Solar Dryer	Number
					(cavan)		(day)		(m)	(cu.m/cav)	(day)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(m x.m)	
1	Lapogan	1	Wet	Paddy	5,850	Sep	30	0.845	0.135	0.15	2	5,698	6,341	6,341	6,341	40.5 x 193.5	1
				Corn	1,320	Aug-Sep	60	0.845	0.135	0.15	2	643					
			Dry	Paddy	5,850	Feb	30	0.845	0.135	0.15	2	5,698	6,341				
				Corn	1,320	Feb-Mar	60	0.845	0.135	0.15	2	643					
2	Quiling	1	Wet	Paddy	2,718	Oct	30	0.845	0.135	0.15	2	2,647	2,647	2,647	2,647	24.0 x 110.5	1
				Corn	684	Sep	30	0.845	0.135	0.15	2	(666)					
			Dry	Paddy	2,718	Mar	30	0.845	0.135	0.15	2	2,647	2,647				
				Corn	684	Apr	30	0.845	0.135	0.15	2	(666)					
3	(omitted)																
4	San Manuel	1	Wet	Paddy	3,960	Oct	30	0.845	0.135	0.15	2	3,857	5,610	5,610	5,610	40.0 x 140.5	1
				Corn	3,600	Sep-Oct	60	0.845	0.135	0.15	2	1,753					
			Dry	Paddy	3,450	Apr	30	0.845	0.135	0.15	2	3,360	5,113				
				Corn	3,600	Mar-Apr	60	0.845	0.135	0.15	2	1,753					
5	San Miguel (Ramon)	1	Wet	Paddy	5,886	Oct	30	0.845	0.135	0.15	2	5,733	6,084	6,084	6,084	34.0 x 179.0	1
				Corn	720	Sep-Oct	60	0.845	0.135	0.15	2	351					
			Dry	Paddy	5,886	Mar	30	0.845	0.135	0.15	2	5,733	6,084				
				Corn	720	Mar-Apr	60	0.845	0.135	0.15	2	351					
6	Amulungan - Rizal	1	Wet	Paddy	5,490	Oct	30	0.845	0.135	0.15	2	5,347	5,347	5,347	5,347	40.0 x 134.0	1
				Corn	0	-	30	0.845	0.135	0.15	2	0					
			Dry	Paddy	5,490	Mar-Apr	30	0.845	0.135	0.15	2	5,347	5,347				
				Corn	0	-	30	0.845	0.135	0.15	2	0					
7-1	Isabela Settlement La Suerte Cluster	5	Wet	Paddy	2,316	Oct	30	0.845	0.135	0.15	2	2,255	5,836	5,836	1,167	20.0 x 58.5	5
				Corn	7,350	Sep-Oct	60	0.845	0.135	0.15	2	3,580					
			Dry	Paddy	2,148	Mar	30	0.845	0.135	0.15	2	2,092	5,672				
				Corn	7,350	Mar-Apr	60	0.845	0.135	0.15	2	3,580					
7-2	Isabela Settlement Dipasivi Cluster	4	Wet	Paddy	1104	Oct	30	0.845	0.135	0.15	2	1075	3,069	3,069	767	18.5 x 41.5	4
				Corn	4,095	Sep-Oct	60	0.845	0.135	0.15	2	1,994					
			Dry	Paddy	864	Mar	30	0.845	0.135	0.15	2	842	2,836				
				Corn	4,095	Mar-Apr	60	0.845	0.135	0.15	2	1,994					
7-3	Isabela Settlement Cenea Cluster	5	Wet	Paddy	2,532	Oct	30	0.845	0.135	0.15	2	2,466	5,636	5,636	1,127	20.0 x 56.5	5
				Corn	6,510	Sep-Oct	60	0.845	0.135	0.15	2	3,170					
			Dry	Paddy	1,476	Mar	30	0.845	0.135	0.15	2	1,438	4,608				
				Corn	6,510	Mar-Apr	60	0.845	0.135	0.15	2	3,170					
8	Minagbag	1	Wet	Paddy	9,216	Sep	30	0.845	0.135	0.15	2	8,977	10,800	10,800	10,800	34.0 x 304.5	1
				Corn	3,744	Aug-Sep	60	0.845	0.135	0.15	2	1,823					
			Dry	Paddy	7,830	Apr	30	0.845	0.135	0.15	2	7,627	9,450				
				Corn	3,744	Mar-Apr	60	0.845	0.135	0.15	2	1,823					

Table F-2-3 Required Area of Solar Dryer by Cooperative (2)

No.	Name of ARC	Number of Barangay	Season	Crop	Targeted Production Value	Harvesting Period		Conversion Rate	Spreading Thickness	Volume per one cavan	Drying Duration	Required Area by Crop	Required Area of Solar Dryer	Projected area of Solar Dryer	Projected area of Solar Dryer by Barangay	Size of Solar Dryer	
						Name of Month	Number									Size of Solar Dryer	Number
					(cavan)		(day)		(m)	(cu.m/cav)	(day)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(m x.m)	
9	Cabaruan	1	Wet	Paddy	2,608	Nov	30	0.845	0.135	0.15	2	2,540	2,540	3,731	3,731	30.5 x 112.0	1
				Corn	3,072	Sep	30	0.845	0.135	0.15	2	(2,992)					
			Dry	Paddy	2,295	Apr	30	0.845	0.135	0.15	2	2,235	3,731				
				Corn	3,072	Mar-Apr	60	0.845	0.135	0.15	2	1,496					
10	Capirpiriwan	1	Wet	Paddy	1,530	Oct	30	0.845	0.135	0.15	2	1,490	2,326	2,326	2,326	22.5 x 92.5	1
				Corn	1716	Sep-Oct	60	0.845	0.135	0.15	2	836					
			Dry	Paddy	1,530	Mar	30	0.845	0.135	0.15	2	1,490	2,326				
				Corn	1716	Mar-Apr	60	0.845	0.135	0.15	2	836					
11	Fermeldy	1	Wet	Paddy	0	-	30	0.845	0.135	0.15	2	0	1,432	1,432	1,432	24.5 x 58.5	1
				Corn	2,940	Aug-Sep	60	0.845	0.135	0.15	2	1,432					
			Dry	Paddy	0	-	30	0.845	0.135	0.15	2	0	1,432				
				Corn	2,940	Feb-Mar	60	0.845	0.135	0.15	2	1,432					
12	Luzon	1	Wet	Paddy	7,470	Sep	30	0.845	0.135	0.15	2	7,276	7,399	7,399	7,399	36.5 x 202.0	1
				Corn	252	Aug-Sep	60	0.845	0.135	0.15	2	123					
			Dry	Paddy	7,470	Mar	30	0.845	0.135	0.15	2	7,276	7,399				
				Corn	252	Feb-Mar	60	0.845	0.135	0.15	2	123					
13	Progreso	1	Wet	Paddy	783	Oct	30	0.845	0.135	0.15	2	763	1,321	1,321	1,321	19.0 x 62.0	1
				Corn	1145	Sep-Oct	60	0.845	0.135	0.15	2	558					
			Dry	Paddy	783	Mar	30	0.845	0.135	0.15	2	763	1,321				
				Corn	1145	Mar-Apr	60	0.845	0.135	0.15	2	558					
14	Yeban Nort/Benito Soliven	2	Wet	Paddy	1,531	Oct	30	0.845	0.135	0.15	2	(1,491)	4,383	5,084	2,542	33.0 x 154.0	2
				Corn	9,000	Aug-Sep	60	0.845	0.135	0.15	2	4,383					
			Dry	Paddy	720	Mar	30	0.845	0.135	0.15	2	701	5,084				
				Corn	9,000	Feb-Mar	60	0.845	0.135	0.15	2	4,383					
15	Canan	1	Wet	Paddy	12,204	Sep	30	0.845	0.135	0.15	2	11,887	11,887	11,887	11,887	30.5 x 390.0	1
				Corn	0	-	30	0.845	0.135	0.15	2	0					
			Dry	Paddy	12,204	Feb-Mar	60	0.845	0.135	0.15	2	5,943	5,943				
				Corn	0	-	30	0.845	0.135	0.15	2	0					
16	Andarayan	1	Wet	Paddy	5,670	Sep	30	0.845	0.135	0.15	2	5,523	5,593	5,593	5,593	30.5 x 182.0	1
				Corn	144	Aug-Sep	60	0.845	0.135	0.15	2	70					
			Dry	Paddy	5,670	Feb-Mar	60	0.845	0.135	0.15	2	2,761	2,831				
				Corn	144	Feb-Mar	60	0.845	0.135	0.15	2	70					
17	Bantug Petines	1	Wet	Paddy	7,992	Sep	30	0.845	0.135	0.15	2	7,784	7,784	7,784	7,784	37.5 x 208.0	1
				Corn	0	-	30	0.845	0.135	0.15	2	0					
			Dry	Paddy	7,992	Feb-Mar	60	0.845	0.135	0.15	2	3,892	3,892				
				Corn	0	-	30	0.845	0.135	0.15	2	0					

Table F-2-3 Required Area of Solar Dryer by Cooperative (3)

No.	Name of ARC	Number of Barangay	Season	Crop	Targeted Production Value	Harvesting Period		Conversion Rate	Spreading Thickness	Volume per one cavan	Drying Duration	Required Area by Crop	Required Area of Solar Dryer	Projected area of Solar Dryer	Projected area of Solar Dryer by Barangay	Size of Solar Dryer	
						Name of Month	Number									Size of Solar Dryer	Number
					(cavan)		(day)		(m)	(cu.m/cav)	(day)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(m x.m)	
18	Dalena & Simanu	3	Wet	Paddy	6,165	Jul	30	0.845	0.135	0.15	2	6,005	6,005	6,005	2,002	24.0 x 83.5	3
				Corn	5,760	Aug-Sep	60	0.845	0.135	0.15	2	(2,805)					
			Dry	Paddy	4,305	Dec	30	0.845	0.135	0.15	2	4,193	4,193				
				Corn	5,760	Feb-Mar	60	0.845	0.135	0.15	2	(2,805)					
19	Dammao	1	Wet	Paddy	2,505	Dec	30	0.845	0.135	0.15	2	2,440	2,440	2,440	2,440	19.5 x 125.5	1
				Corn	0	-	30	0.845	0.135	0.15	2	0					
			Dry	Paddy	2,505	May	30	0.845	0.135	0.15	2	2,440	2,440				
				Corn	0	-	30	0.845	0.135	0.15	2	0					
20	San Miguel (Burgos)	1	Wet	Paddy	3,120	Nov	30	0.845	0.135	0.15	2	3,039	4,558	4,558	4,558	34.5 x 132.5	1
				Corn	3,120	Oct-Nov	60	0.845	0.135	0.15	2	1,519					
			Dry	Paddy	840	Apr	30	0.845	0.135	0.15	2	818	2,337				
				Corn	3,120	Apr-May	60	0.845	0.135	0.15	2	1,519					
21	San Ramon	1	Wet	Paddy	2,430	Sep	30	0.845	0.135	0.15	2	2,367	3,150	3,150	3,150	23.5 x 134.0	1
				Corn	804	Sep	30	0.845	0.135	0.15	2	783					
			Dry	Paddy	2,430	Feb-Mar	60	0.845	0.135	0.15	2	1,183	1,966				
				Corn	804	Mar	30	0.845	0.135	0.15	2	783					
22	Viola Estate Cluster	4	Wet	Paddy	0	-	30	0.845	0.135	0.15	2	0	4,588	4,588	1,147	22.0 x 52.5	4
				Corn	9,420	Aug-Sep	60	0.845	0.135	0.15	2	4,588					
			Dry	Paddy	0	-	30	0.845	0.135	0.15	2	0	4,588				
				Corn	9,420	Feb-Mar	60	0.845	0.135	0.15	2	4,588					
Total of Wet Season Crop					158,476								116,776				
Total of Dry Season Crop					149,852								97,581				
Grand Total					308,328									118,668			

Table F-2-4 Required Capacity of Mechanical Dryer by Cooperative (1)

No.	Name of ARC	Season	Crop	Targeted Production Value	Harvesting Period		Drying Duration	Required Capacity by Crop	Required Capacity of Mechanical Dryer	Projected Capacity of Mechanical Dryer	Existing Capacity of Mechanical Dryer	Design of Mechanical Dryer
					Name of Month	Number						
				(cavan)		(day)	(day)		(cavan)	(cavan)	(cavan)	(cavan)
1	Lapogan	Wet	Paddy	1,950	Sep	30	1	65	72	72	0	80
			Corn	440	Aug-Sep	60	1	7				
		Dry	Paddy	1,950	Feb	30	1	65	72			
			Corn	440	Feb-Mar	60	1	7				
2	Quiling	Wet	Paddy	906	Oct	30	1	30	30	30	0	30
			Corn	228	Sep	30	1	(8)				
		Dry	Paddy	906	Mar	30	1	30	30			
			Corn	228	Apr	30	1	(8)				
3	(omitted)											
4	San Manuel	Wet	Paddy	1,320	Oct	30	1	44	64	64	0	70
			Corn	1,200	Sep-Oct	60	1	20				
		Dry	Paddy	1,150	Apr	30	1	38	58			
			Corn	1,200	Mar-Apr	60	1	20				
5	San Miguel (Ramon)	Wet	Paddy	1,962	Oct	30	1	65	69	69	0	70
			Corn	240	Sep-Oct	60	1	4				
		Dry	Paddy	1,962	Mar	30	1	65	69			
			Corn	240	Mar-Apr	60	1	4				
6	Amulungan - Rizal	Wet	Paddy	1,830	Oct	30	1	61	61	61	90	0
			Corn	0	-	30	1	0				
		Dry	Paddy	1,830	Mar-Apr	30	1	61	61			
			Corn	0	-	30	1	0				
7-1	Isabela Settlement La Suerte Cluster	Wet	Paddy	772	Oct	30	1	26	67	67	0	70
			Corn	2,450	Sep-Oct	60	1	41				
		Dry	Paddy	716	Mar	30	1	24	65			
			Corn	2,450	Mar-Apr	60	1	41				
7-2	Isabela Settlement Dipasivi Cluster	Wet	Paddy	368	Oct	30	1	12	35	35	0	40
			Corn	1,365	Sep-Oct	60	1	23				
		Dry	Paddy	288	Mar	30	1	10	33			
			Corn	1,365	Mar-Apr	60	1	23				
7-3	Isabela Settlement Cenea Cluster	Wet	Paddy	844	Oct	30	1	28	64	64	0	70
			Corn	2,170	Sep-Oct	60	1	36				
		Dry	Paddy	492	Mar	30	1	16	52			
			Corn	2,170	Mar-Apr	60	1	36				
8	Minagbag	Wet	Paddy	3,072	Sep	30	1	102	123	123	0	130
			Corn	1,248	Aug-Sep	60	1	21				
		Dry	Paddy	2,610	Apr	30	1	67	108			
			Corn	1,248	Mar-Apr	60	1	21				

Table F-2-4 Required Capacity of Mechanical Dryer by Cooperative (2)

No.	Name of ARC	Season	Crop	Targeted Production Value (cavan)	Harvesting Period: Name of Month	Harvesting Period: Number (day)	Drying Duration (day)	Required Capacity by Crop	Required Capacity of Mechanical Dryer (cavan)	Projected Capacity of Mechanical Dryer (cavan)	Existing Capacity of Mechanical Dryer (cavan)	Design of Mechanical Dryer (cavan)
9	Cabaruan	Wet	Paddy	869	Nov	30	1	29	29	43	0	50
			Corn	1024	Sep	30	1	(34)				
		Dry	Paddy	765	Apr	30	1	26	43			
			Corn	1024	Mar-Apr	60	1	17				
10	Capirpirlwan	Wet	Paddy	510	Oct	30	1	17	27	27	0	30
			Corn	572	Sep-Oct	60	1	10				
		Dry	Paddy	510	Mar	30	1	17	27			
			Corn	572	Mar-Apr	60	1	10				
11	Fermeidy	Wet	Paddy	0	-	30	1	0	16	16	0	20
			Corn	980	Aug-Sep	60	1	16				
		Dry	Paddy	0	-	30	1	0	16			
			Corn	980	Feb-Mar	60	1	16				
12	Luzon	Wet	Paddy	2,490	Sep	30	1	83	84	84	0	90
			Corn	84	Aug-Sep	60	1	1				
		Dry	Paddy	2,490	Mar	30	1	83	84			
			Corn	84	Feb-Mar	60	1	1				
13	Progreso	Wet	Paddy	261	Oct	30	1	9	15	15	0	20
			Corn	380	Sep-Oct	60	1	6				
		Dry	Paddy	261	Mar	30	1	9	15			
			Corn	380	Mar-Apr	60	1	6				
14	Yeban Nort/Benito Soliven	Wet	Paddy	511	Oct	30	1	(17)	50	58	0	60
			Corn	3,000	Aug-Sep	60	1	50				
		Dry	Paddy	240	Mar	30	1	8	58			
			Corn	3,000	Feb-Mar	60	1	50				
15	Canan	Wet	Paddy	4,068	Sep	30	1	136	136	136	90	50
			Corn	0	-	30	1	0				
		Dry	Paddy	4,068	Feb-Mar	60	1	68	68			
			Corn	0	-	30	1	0				
16	Andarayan	Wet	Paddy	1,890	Sep	30	1	63	64	64	0	70
			Corn	48	Aug-Sep	60	1	1				
		Dry	Paddy	1,890	Feb-Mar	60	1	32	33			
			Corn	48	Feb-Mar	60	1	1				
17	Bantug Petines	Wet	Paddy	2,664	Sep	30	1	89	89	89	0	90
			Corn	0	-	30	1	0				
		Dry	Paddy	2,664	Feb-Mar	60	1	44	44			
			Corn	0	-	30	1	0				

Table F-2-4 Required Capacity of Mechanical Dryer by Cooperative (3)

No.	Name of ARC	Season	Crop	Targeted Production Value	Harvesting Period		Drying Duration	Required Capacity by Crop	Required Capacity of Mechanical Dryer	Projected Capacity of Mechanical Dryer	Existing Capacity of Mechanical Dryer	Design of Mechanical Dryer
					Name of Month	Number						
				(cavan)		(day)	(day)		(cavan)	(cavan)	(cavan)	(cavan)
18	Dalena & Simanu	Wet	Paddy	2,055	Jul	30	1	69	69	69	0	70
			Corn	1,920	Aug-Sep	60	1	(32)				
		Dry	Paddy	1,435	Dec	30	1	48	48			
			Corn	1,920	Feb-Mar	60	1	(32)				
19	Dammao	Wet	Paddy	835	Dec	30	1	28	28	28	0	30
			Corn	0	-	30	1	0				
		Dry	Paddy	835	May	30	1	28	28			
			Corn	0	-	30	1	0				
20	San Miguel (Burgos)	Wet	Paddy	1040	Nov	30	1	35	52	52	0	60
			Corn	1040	Oct-Nov	60	1	17				
		Dry	Paddy	280	Apr	30	1	9	26			
			Corn	1040	Apr-May	60	1	17				
21	San Ramon	Wet	Paddy	810	Sep	30	1	27	36	36	0	40
			Corn	268	Sep	30	1	9				
		Dry	Paddy	810	Feb-Mar	60	1	14	23			
			Corn	268	Mar	30	1	9				
22	Viola Estate Cluster	Wet	Paddy	0	-	30	1	0	52	52	0	60
			Corn	3,140	Aug-Sep	60	1	52				
		Dry	Paddy	0	-	30	1	0	52			
			Corn	3,140	Feb-Mar	60	1	52				
Total of Wet Season Crop				52,824								
Total of Dry Season Crop				49,949								
Grand Total				102,773						1,354		1,300

Table F-2-5 Required Floor Area of Warehouse by Cooperative (1)

No.	Name of ARC	Number of Baranga y	Season	Crop	Targeted Production Value			Piling Number	Size of one caban sack		Required Net Floor Area by Crop and Season	Required Total Net Floor Area by Season	Required Net Floor Area by ARC/Claster	Required Net Floor Area by Barangay	0.7 x Existing Floor Area	Projected Net Floor Area by Barangay	Projected Warehouse by Barangay		
					Solar Dryer	Mechanical Dryer	Total		Length	Width							Net Floor Size	Planned Floor Size	Number
					(cavan)	(cavan)	(cavan)	(cavan)	(m)	(m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(m x m)	(m x m)	
1	Lapogan	1	Wet	Paddy	5,850	1,950	7,800	20	0.8	0.4	125	160	160	160	0	160	7.0 x 27.5	10.0 x 30.5	1
				Corn	1,320	440	1,760	20	0.8	0.5	35								
			Dry	Paddy	5,850	1,950	7,800	20	0.8	0.4	125	160							
				Corn	1,320	440	1,760	20	0.8	0.5	35								
2	Quiling	1	Wet	Paddy	2,718	906	3,624	20	0.8	0.4	58	76	76	76	0	76	7.0 x 11.0	10.0 x 14.0	1
				Corn	684	228	0,912	20	0.8	0.5	18								
			Dry	Paddy	2,718	906	3,624	20	0.8	0.4	58	76							
				Corn	684	228	912	20	0.8	0.5	18								
3	(omitted)																		
4	San Manuel	1	Wet	Paddy	3,960	1,320	5,280	20	0.8	0.4	84	180	180	180	0	180	7.0 x 26.0	10.0 x 30.0	1
				Corn	3,600	1,200	4,800	20	0.8	0.5	96								
			Dry	Paddy	3,450	1,150	4,600	20	0.8	0.4	74	170							
				Corn	3,600	1,200	4,800	20	0.8	0.5	96								
5	San Miguel (Ramon)	1	Wet	Paddy	5,886	1,962	7,848	20	0.8	0.4	126	145	145	145	0	145	7.0 x 21.0	10.0 x 24.0	1
				Corn	720	240	960	20	0.8	0.5	19								
			Dry	Paddy	5,886	1,962	7,848	20	0.8	0.4	126	145							
				Corn	720	240	960	20	0.8	0.5	19								
6	Amulungan - Rizal	1	Wet	Paddy	5,490	1,830	7,320	20	0.8	0.4	117	117	117	117	210	---	---	---	---
				Corn	0	0	0	20	0.8	0.5	0								
			Dry	Paddy	5,490	1,830	7,320	20	0.8	0.4	117	117							
				Corn	0	0	0	20	0.8	0.5	0								
7-1	Isabela Settlement La Suerte Cluster	5	Wet	Paddy	2,316	772	3,088	20	0.8	0.4	49	245	245	49	0	49	7.0 x 7.0	10.0 x 10.0	5
				Corn	7,350	2,450	9,800	20	0.8	0.5	196								
			Dry	Paddy	2,148	716	2,864	20	0.8	0.4	46	242							
				Corn	7,350	2,450	9,800	20	0.8	0.5	196								
7-2	Isabela Settlement Dipasivi Cluster	4	Wet	Paddy	1,104	368	1,472	20	0.8	0.4	24	133	133	33	0	33	7.0 x 5.5	10.0 x 8.5	4
				Corn	4,095	1,365	5,460	20	0.8	0.5	109								
			Dry	Paddy	864	288	1,152	20	0.8	0.4	18	127							
				Corn	4,095	1,365	5,460	20	0.8	0.5	109								
7-3	Isabela Settlement Cenea Cluster	5	Wet	Paddy	2,532	844	3,376	20	0.8	0.4	54	228	228	46	0	46	7.0 x 7.0	10.0 x 10.0	5
				Corn	6,510	2,170	8,680	20	0.8	0.5	174								
			Dry	Paddy	1,476	492	1,968	20	0.8	0.4	31	205							
				Corn	6,510	2,170	8,680	20	0.8	0.5	174								
8	Minagbag	1	Wet	Paddy	9,216	3,072	12,288	20	0.8	0.4	197	297	297	297	140	157	7.0 x 21.0	10.0 x 24.0	1
				Corn	3,744	1,248	4,992	20	0.8	0.5	100								
			Dry	Paddy	7,830	2,610	10,440	20	0.8	0.4	167	267							
				Corn	3,744	1,248	4,992	20	0.8	0.5	100								

Table F-2-5 Required Floor Area of Warehouse by Cooperative (2)

No.	Name of ARC	Number of Baranga y	Season	Crop	Targeted Production Value			Piling Number	Size of one caban sack		Required Net Floor Area by Crop and Season	Required Total Net Floor Area by Season	Required Net Floor Area by ARC/Claster	Required Net Floor Area by Barangay	0.7 x Existing Floor Area	Projected Net Floor Area by Barangay	Projected Warehouse by Barangay		
					Solar Dryer	Mechanical Dryer	Total		Length	Width							Net Floor Size	Planned Floor Size	Number
					(cavan)	(cavan)	(cavan)	(cavan)	(m)	(m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(m x m)	(m x m)	
9	Cabaruan	1	Wet	Paddy	2,608	869	3,477	20	0.8	0.4	56	138	138	138	0	138	7.0 x 17.5	10.0 x 20.5	1
				Corn	3,072	1,024	4,096	20	0.8	0.5	82								
			Dry	Paddy	2,295	765	3,060	20	0.8	0.4	49	131							
				Corn	3,072	1,024	4,096	20	0.8	0.5	82								
10	Capirpiriwan	1	Wet	Paddy	1,530	510	2,040	20	0.8	0.4	33	79	79	79	0	79	7.0 x 9.5	10.0 x 12.5	1
				Corn	1,716	572	2,288	20	0.8	0.5	46								
			Dry	Paddy	1,530	510	2,040	20	0.8	0.4	33	79							
				Corn	1,716	572	2,288	20	0.8	0.5	46								
11	Fermeldy	1	Wet	Paddy	0	0	0	20	0.8	0.4	0	78	78	78	0	78	7.0 x 11.5	10.0 x 14.5	1
				Corn	2,940	980	3,920	20	0.8	0.5	78								
			Dry	Paddy	0	0	0	20	0.8	0.4	0	78							
				Corn	2,940	980	3,920	20	0.8	0.5	78								
12	Luzon	1	Wet	Paddy	7,470	2,490	9,960	20	0.8	0.4	159	166	166	166	0	166	7.0 x 23.5	10.0 x 26.5	1
				Corn	252	84	336	20	0.8	0.5	7								
			Dry	Paddy	7,470	2,490	9,960	20	0.8	0.4	159	166							
				Corn	252	84	336	20	0.8	0.5	7								
13	Progreso	1	Wet	Paddy	783	261	1,044	20	0.8	0.4	17	48	48	48	0	48	7.0 x 6.0	10.0 x 9.0	1
				Corn	1,145	380	1,525	20	0.8	0.5	31								
			Dry	Paddy	783	261	1,044	20	0.8	0.4	17	48							
				Corn	1,145	380	1,525	20	0.8	0.5	31								
14	Yeban Nort/Benito Soliven	2	Wet	Paddy	1,531	511	2,042	20	0.8	0.4	33	273	273	137	0	137	7.0 x 20.0	10.0 x 23.0	2
				Corn	9,000	3,000	12,000	20	0.8	0.5	240								
			Dry	Paddy	720	240	960	20	0.8	0.4	15	255							
				Corn	9,000	3,000	12,000	20	0.8	0.5	240								
15	Canan	1	Wet	Paddy	12,204	4,068	16,272	20	0.8	0.4	260	260	260	260	140	120	7.0 x 17.5	10.0 x 20.5	1
				Corn	0	0	0	20	0.8	0.5	0								
			Dry	Paddy	12,204	4,068	16,272	20	0.8	0.4	260	260							
				Corn	0	0	0	20	0.8	0.5	0								
16	Andarayan	1	Wet	Paddy	5,670	1,890	7,560	20	0.8	0.4	121	125	125	125	0	125	7.0 x 17.5	10.0 x 20.5	1
				Corn	144	48	192	20	0.8	0.5	4								
			Dry	Paddy	5,670	1,890	7,560	20	0.8	0.4	121	125							
				Corn	144	48	192	20	0.8	0.5	4								
17	Bantug Petines	1	Wet	Paddy	7,992	2,664	10,656	20	0.8	0.4	170	170	170	170	0	170	7.0 x 24.5	10.0 x 27.5	1
				Corn	0	0	0	20	0.8	0.5	0								
			Dry	Paddy	7,992	2,664	10,656	20	0.8	0.4	170	170							
				Corn	0	0	0	20	0.8	0.5	0								

Table F-2-5 Required Floor Area of Warehouse by Cooperative (3)

No.	Name of ARC	Number of Baranga y	Season	Crop	Targeted Production Value			Piling Number	Size of one caban sack		Required Net Floor Area by Crop and Season	Required Total Net Floor Area by Season	Required Net Floor Area by ARC/Claster	Required Net Floor Area by Barangay	0.7 x Existing Floor Area	Projected Net Floor Area by Barangay	Projected Warehouse by Barangay		
					Solar Dryer	Mechanical Dryer	Total		Length	Width							Net Floor Size	Planned Floor Size	Number
					(cavan)	(cavan)	(cavan)	(cavan)	(m)	(m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(m x m)	(m x m)	
18	Dalena & Simanu	3	Wet	Paddy	6,165	2,055	8,220	20	0.8	0.4	132	286	286	95	0	95	7.0 x 13.5	10.0 x 14.0	3
				Corn	5,760	1,920	7,680	20	0.8	0.5	154								
			Dry	Paddy	4,305	1,435	5,740	20	0.8	0.4	92	246							
				Corn	5,760	1,920	7,680	20	0.8	0.5	154								
19	Dammao	1	Wet	Paddy	2,505	835	3,340	20	0.8	0.4	53	53	53	53	0	53	7.0 x 7.5	10.0 x 9.5	1
				Corn	0	0	0	20	0.8	0.5	0								
			Dry	Paddy	2,505	835	3,340	20	0.8	0.4	53	53							
				Corn	0	0	0	20	0.8	0.5	0								
20	San Miguel (Burgos)	1	Wet	Paddy	3,120	1,040	4,160	20	0.8	0.4	67	150	150	150	0	150	7.0 x 21.5	10.0 x 24.5	1
				Corn	3,120	1,040	4,160	20	0.8	0.5	83								
			Dry	Paddy	840	280	1,120	20	0.8	0.4	18	101							
				Corn	3,120	1,040	4,160	20	0.8	0.5	83								
21	San Ramon	1	Wet	Paddy	2,430	810	3,240	20	0.8	0.4	52	73	73	73	0	73	7.0 x 10.5	10.0 x 13.5	1
				Corn	804	268	1,072	20	0.8	0.5	21								
			Dry	Paddy	2,430	810	3,240	20	0.8	0.4	52	73							
				Corn	804	268	1,072	20	0.8	0.5	21								
22	Viola Estate Cluster	4	Wet	Paddy	0	0	0	20	0.8	0.4	0	251	251	63	0	63	7.0 x 9.0	10.0 x 12.0	4
				Corn	9,420	3,140	12,560	20	0.8	0.5	251								
			Dry	Paddy	0	0	0	20	0.8	0.4	0	251							
				Corn	9,420	3,140	12,560	20	0.8	0.5	251								
Total of Wet Season Crop							211,300				3,731	3,731							
Total of Dry Season Crop							199,801				3,545	3,545							
Grand Total		40					411,101						3,731	2,738	490	2,341			

Table F-2-6 Summary of Post Harvest Facilities Development

No.	Name of ARC	Projected Agricultural Product (Paddy & Corn)	Solar Dryer by Barangay Operating			Post Harvest Facilities by Cooperative Operation									Note
						Wear House			Solar Dryer			Mechanical Dryer			
			Short Term	Middle Term	Long Term	Short Term	Middle Term	Long Term	Short Term	Middle Term	Long Term	Short Term	Middle Term	Long Term	
		(cavan)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(sq.m)	(cavan)	(cavan)	(cavan)	
1	Lapogan	40,630	6,146	12,291		160			6,341			80			
2	Quiling	19,278	2,184	2,768			76			2,647			30		
3	(omitted)	-------													
4	San Manuel	42,840	6,223	5,823	11,645	180			5,610			70			
5	San Miguel (Ramon)	37,434	7,421	14,841			145			6,084			70		
6	Amulungan - Rizal	31,110	7,424	14,848		---	---	---			5,347			0	
7-1	Isabela Settlement - La Suerte Cluster	54,774	5,302	5,302	10,602	49			5,836			70			
7-2	Isabela Settlement - Dipasivi Cluster	29,461	2,666	2,666	5,330	33			3,069			40			
7-3	Isabela Settlement - Cenea Cluster	51,238	3,549	2,699	5,398	46			5,836			70			
8	Minagbag	73,440	12,233	24,466				157			10,800			130	
9	Cabaruan	32,185	4,935	9,870			136			3,731			50		
10	Capirpiriwan	18,394	2,360	4,719		79			2,326			30			
11	Fermeldy	16,660	948	1,896				78			1,432			20	
12	Luzon	43,758	12,664	17,329			166			7,399			90		
13	Progreso	10,922	1,325	1,325	2,651		48			1,321			20		
14	Yeban Nort/Benito Soliven	59,677	5,914	11,828				137			5,084			60	
15	Canan	69,156	19,830	27,980		120			11,887			50			
16	Andarayan	32,946	8,992	13,984		125			5,593			70			
17	Bantug Petines	45,288	11,231	20,061		170			7,784			90			
18	Dalena & Simanu	67,575	5,163	5,163	10,327			95			6,005			70	
19	Dammao	14,195	2,964	5,929		53			2,440			30			
20	San Miguel (Burgos)	35,360	5,998	11,995			150			4,558			60		
21	San Ramon	18,326	4,270	8,539		73			3,150			40			
22	Viola Estate Cluster	53,380	4,247	8,493			63			4,588			60		
Grand Total		898,027	143,989	234,815	45,953	1,088	786	467	59,672	30,326	28,668	640	380	280	

F.3 Farm to Market Road Development

F.3.1. Planning of Road

Farm to market road will be developed for in time transportation of agriculture machines for good harvesting and to lessen the hauling cost of farm products that may farmers farm productivity.

(1) Classification of Road

Farm to Market Road is divided into two categories; main farm road and production road by view point of traffic volume, importance of road and the operation and maintenance cost.

Main farm road will be provided for connecting road between barangay and a market or connecting road between barangays, which are considered as public roads and are making a mass transportation of farm products.

Production Road will be provided for transporting the agriculture machines and hauling farm products.

(2) Road Width

Width of road should be considered based on the kinds and volumes of vehicles to be passed and followings are discussions about road width by kinds and expecting volumes of vehicles in future.

a) Main Farm Road

The main farm road will be provided for connecting a barangay and a market or connecting two barangays, 7.0 m in total width, 5.0 m gravel width and 1.0 m should at both sides by following studies (refer to Figure F-3-1).

Expecting Traffic Volume

Traffic volume in vehicle per day (VPD) is expected more than 160, therefore two-lane road will be provided.

Kinds and Width of Vehicle to be passed

Vehicles which will pass main farm road are expecting as tabulated below.

Kind of Vehicle	Width of Vehicle
Sedan	1.7 m
Large Truck (Loading capacity: more than 6 ton)	2.5 m
Small Truck (Loading capacity: 2 ton)	1.7 m
Right Vehicle	1.4 m
Power Tiller (Less than 6 PS)	0.6 m
Power Tiller (More than 6 PS)	0.8 m
Agricultural Tractor (Less than 30 PS)	1.3 m
Agricultural Tractor (30 PS class)	1.7 m
Agricultural Tractor (More than 50 PS)	2.3 m
Tricycle	1.7 m
Motor Cycle	0.8 m
Jeepny	1.8 m

Width of Road

Width of farm to market road will be determined based on the condition that 2 ton small truck and jeepny pass each other by following considerations;

Description	Dimension	Note
Width of 2 ton small truck	1.7 m	
Width of jeepny	1.8 m	
Clearance between cars	0.5 m	
Outside clearance	0.6 m	(= 0.3 m x 2)
Sub-total	4.6 m	≒ 5.0 m
Shoulder	2.0 m	(= 1.0 m x 2)
Total	6.6 m	≒ 7.0 m

Surfacing

Longitudinal slope of road should be less than 8 % with gravel surfacing, however in case longitudinal slope of road can not be maintained within 8 % due to deep excavation and high embankment, concrete surfacing will be provided for 8 to 10 % of longitudinal slope and concrete surfacing with anti-slip treatment will be provided for 10 to 15 %.

b) Production Road

The production road will be provided for transporting the agriculture machine and hauling farm product, 3.50 m in total width, 2.50 m gravel width and 0.50 m shoulder at both sides by following studies (refer to Figure F-3-1). Turnout, which is waiting place for vehicle passing together, will be provided at interval of 1.0 km; 3.0 m in width and 10.0 m in length.

Expecting Traffic Volume

Traffic volume in vehicle per day (VPD) is expected less than 50, therefore single lane road will be provided.

Width of Road

Width of production road will be considered that one jeepny and man pass each other by following considerations;

Description	Dimension	Note
Width of jeepny	1.8 m	
Man	0.6 m	
Clearance between cars	0.3 m	
Outside clearance	0.3 m	(= 0.3 m x 1)
Sub-total	2.4 m	≒ 2.5 m
Shoulder	1.0 m	(= 0.5 m x 2)
Total	3.4 m	≒ 3.5 m

Surfacing

Longitudinal slope of road should be less than 8 % with gravel surfacing, however in case longitudinal slope of road can not be maintained within 8 % due to deep excavation and high embankment, concrete surfacing will be provided for 8 to 10 % of longitudinal slope and concrete surfacing with anti-slip treatment will be provided for 10 to 15 %.

F.3.2 Implementation

Based on the field investigation with the counterparts from the DAR, roads were classified according to these categories :

(1) Construction of farm to market road (New construction of Road)

a) Present condition
   - With road right of way
   - Exemption, if the road is already existing but more than half of its length is not passable especially during rainy season due to steep slope or muddy surface with not gravelled nor compacted.

b) Expected result
   - New Road with well compaction and gravel surface

(2) Re-construction of road

a) Present Condition
   - With road right of way
   - With existing access trail or road but the measurement is not existing
   - Portions needs restoration/improvement of cross structure with canals, by reinforced concrete cylinder pipes, etc.
   - With aggregates but not well compacted on sub-base

b) Expected Result
   - Re-construct in accordance to required measurements
   - Gravelled and compacted

(3) Rehabilitation of road

a) Present Condition
   - Already existing
   - Portions needs restoration/improvement of cross structure with canals, by reinforced concrete cylinder pipes, etc.
   - Needs more aggregates and compaction

b) Expected Result
   - Improvement of roadbed with aggregates and well compacted
   - Needed structures restored

(4) Maintenance of Road

a) Present Condition
   - Passable needs slight improvement

b) Expected Result
   - Maintained

(5) Not considered

- National, provincial and municipal roads
- Road concreting
- Barangay roads in the residential area, unless it connects the farm road to the market site

The implementation schedule of FTMR is shown on Table F-3-1.

R.3.3. River Crossing

Bridge or culvert will be considered at the point of river or creek crossing. To determine the surface elevation of bridge or culvert, design water level or high water level observed at cross point is necessary. However, those water level data at small river or creek are not available. Accordingly, high water level for determining the surface elevation of bridge or creek will be decided by hearing from villager.

Flood in the study area is occurred by heavy rain mainly. Economic activity can not be made during the heavy rain then less transportation will be made. Consequently, it can allow to stop traffic on the bridge or culvert during the flood duration less than one week, bridge or culvert will be designed by submergible ones. The parapet of bridge or culvert will be made by concrete with 0,3 m in height and 1.0 m in length and located 1.5 m interval for flowing down the flood smoothly and making clear structural border (for detail, refer to drawing attached).

Table F-3-1 Development Plan of Farm to Market Road (1)

No.	Name of ARC	No.	Farm To Market Road	Length	Term
1	Lapogan	1	(1) Road Concreting	7.0 km	X
			(2) Rehabilitation of FTMR	2.5 km	Short Term
				3.5 km	Medium Term
				2.9 km	Long Term
2	Quiling	1	(1) Construction of FTMR including box culvert and pipe culvert	1.9 km	Short Term
			(2) Rehabilitation of FTMR including box culvert and pipe culvert	1.5 km	Short Term
3	(omitted)				
4	San Manuel	1	(1) Construction of San Manuel - Sta. Maria road including culvert and bridge	1.5 km	Short Term
				1.5 km	Medium Term
			(2) Construction of San Manuel - Pangal Sur Road including culvert or bridge	0.6 km	Short Term
				0.6 km	Medium Term
			(3) Construction of San Manuel - Villa Fermin Road	1.1 km	Medium Term
			(4) Construction of San Manuel - San Antonio Road	0.6 km	Short Term
				0.7 km	Medium Term
			(5) Construction of San Manuel - Sta. Ano Road	1.0 km	Long Term
			(6) Construction of San Manuel - Pangal Sur Road	0.6 km	Long Term
5	San Miguel (Ramon)	1	(1) Construction of FTMR, San Miguel - Bamdan Creek	1.5 km	Short Term
			(2) Construction/Maintenance of Barangay Road	2.5 km	X
			(3) Construction of FTMR to purok-8	2.6 km	Short Term
6	Amulungan - Rizal	1	(1) Concrete Pavement for Lopez St,	3.0 km	X
			(2) Rehabilitation of Kabulalaan St,	1.8 km	Short Term
			(3) Rehabilitation of Silva St,	2.5 km	Short Term
			(4) Rehabilitation of Olimon St,	1.0 km	Medium Term
			(5) Rehabilitation of Village St,	1.0 km	Medium Term
			(6) Rehabilitation of Olonan St,	0.5 km	Medium Term
7-1	Isabela Settlement La Suerte Cluster	5	(1) Re-Construction of La Suerte-Buenavista including Bridge	4.4 km	Short Term
			(2) Re-Construction of Buenavista-Victory	0.8 km	Short Term
			(3) Re-Construction of Buenavista-San Marcelo including bridges	4.8 km	Medium Term
			(4) Re-Construction of San Vicente-Macalauat	3.4 km	Medium Term
			(5) Re-Construction of La Suerte-Lunac	1.0 km	Short Term
7-2	Isabela Settlement Dipasivi Cluster	4	(1) Construction of FTMR including Bridge in Dipacamo	5.0 km	Short Term
			(2) Rehabilitation of Barangay Roads in Palawan	5.0 km	Short Term
			(3) Construction of FTMR, Dipacamo to Villa Remedios including bridge in Villa Remedios	3.0 km	Short Term
			(4) Construction of FTMR, Palawan to Villa Remedios in Villa Remedios	2.5 km	Medium Term
			(5) Construction of FTMR, Villa Remedios to Dipacamo in Villa Remedios	2.0 km	Short Term
			(6) Re-Construction of FTMR, Barangay to farm in Sinalugan	5.0 km	Short Term
				5.0 km	Medium Term
				5.0 km	Long Term
7-3	Isabela Settlement Censa Cluster	5	(1) Rehabilitation of Centro-I to La Suerte in Centro-I	6.0 km	Medium Term
			(2) Rehabilitation of Centro-I to Nakar in Centro-I	2.0 km	Short Term
			(3) Rehabilitation of Barangay Road in Centro-I	5.0 km	Long Term
			(4) Rehabilitation of Centro-II to Magleticial in Centro-II	2.0 km	Medium Term
			(5) Rehabilitation of Centro-II to Estalla in Centro-II	2.0 km	Short Term
			(6) Rehabilitation of Barangay Road in Centro-II	5.0 km	Long Term
			(7) Rehabilitation of Nakar to Centro-II in Nakar	1.5 km	Short Term
			(8) Rehabilitation of Nakar to San Vicente in Nakar	2.0 km	Short Term
			(9) Rehabilitation of Nakar to La Suerte in Nakar	1.5 km	Short Term
			(10) Rehabilitation of Barangay Road in Nakar	2.0 km	Medium Term
			(11) Rehabilitation of Estrella to Centro-II in Estrella	1.0 km	Short Term
			(12) Construction of Estrella to Narra in Estrella	3.0 km	Short Term
			(13) Rehabilitation of Barangay Road in Estrella	2.0 km	Medium Term
8	Minagbag	1	(1) Rehabilitation of Aggasaid to ISF Rd,	3.5 km	Medium Term
			(2) Rehabilitation of Sabado to Rainfed Area	2.0 km	Medium Term
			(3) Rehabilitation of Minagbag to Magamot Communal Irrigation Project,	3.5 km	Long Term
			(4) Rehabilitation of Avecilla along LAT. Exstra Rd to NIA Canal,	1.0 km	Long Term
			(5) Rehabilitation of Valdez Rd.,	1.5 km	Long Term
			(6) Rehabilitation of Leal Rd.,	1.5 km	Long Term

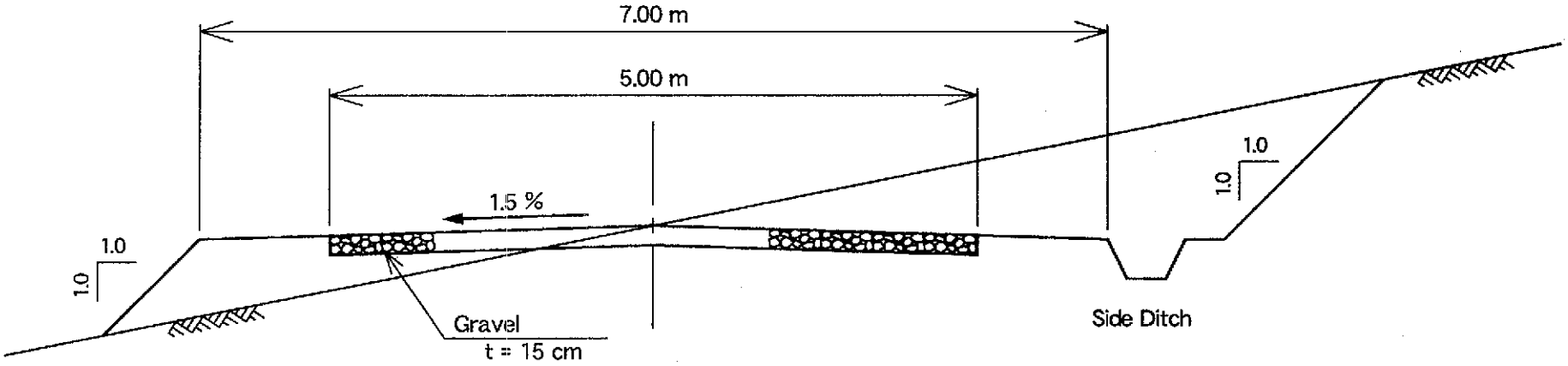
Table F-3-1 Development Plan of Farm to Market Road (2)

No.	Name of ARC	No.	Farm To Market Road	Length	Term
9	Cabaruan	1	(1) Construction of Road to CIP dam site including 2 box culverts	3.0 km	Short Term
			(2) Rehabilitation of FTMR upto access road to dam site	2.0 km	Short Term
			(3) Re-Construction of Road to Flores	0.7 km	Short Term
			(4) Re-Construction of Road to Quimala including 4 box-culverts	3.0 km	Medium Term
			(5) Re-Construction of Road to Manaring	4.0 km	Medium Term
10	Capirpiriwan	1	(1) Rehabilitation of R4	0.4 km	Short Term
			(2) Rehabilitation of R5	0.9 km	Short Term
			(3) Rehabilitation of R6	3.0 km	Medium Term
				2.0 km	Long Term
			(4) Rehabilitation of R11	1.5 km	Medium Term
			(5) Rehabilitation of R8	1.8 km	Medium Term
			(6) Rehabilitation of R7	2.0 km	Long Term
			(7) Rehabilitation of R2	4.2 km	Long Term
			(8) Rehabilitation of R10	2.5 km	Long Term
			(9) Rehabilitation of R9	0.8 km	Long Term
			(10) Rehabilitation of R3	0.4 km	Long Term
			(11) Rehabilitation of R12	0.25 km	Long Term
			(12) Rehabilitation of R1	4.0 km	Long Term
11	Fermeldy	1	(1) Re-Construction of Road Fermeldy to Santa	2.0 km	Short Term
12	Luzon	1	(1) Rehabilitation of FTMR	0.6 km	Short Term
			(2) Rehabilitation of Residential Road	4.4 km	X
13	Progreso	1	(1) Rehabilitation of Road; Progreso to Villa Sanchez	5.0 km	Short Term
				5.0 km	Medium Term
				5.0 km	Long Term
			(2) Construction of Box Culvert 1 unit (within Barangay)	1 unit	Short Term
			(3) Rehabilitation of Road; Progreso to Rogos	4.0 km	Long Term
14	Yeban Norte/Benito Soliven		(1) Construction of FTMR in Yeban Norte	5.0 km	Sort Term
			(2) Construction of Antigo to Gayong-Gayong in Yeban Norte	2.0 km	Medium Term
			(3) Construction of Turod to Sunlife in Yeban Norte	3.0 km	Medium Term
			(4) Construction of Barikik to Punit in Yeban Norte	2.0 km	Long Term
			(5) Construction of Kainiogan to Surcoc in Yeban Norte	1.5 km	Long Term
			(6) Concreting of Barangay Road in Yeban Norte	2.0 km	X
			(7) Maintenance of Road to Poblasion in Yeban Norte	5.0 km	X
			(8) Rehabilitation of Road in Barangay in Yeban Sur	5.0 km	X
15	Canan	1	(1) Construction of FTMR	5.0 km	Short Term
16	Andarayan	1	(1) Rehabilitation of Road within Barangay	0.2 km	Short Term
			(2) Rehabilitation of Road within Barangay	0.11 km	Short Term
			(3) Re-Construction of Road within Farm	6.0 km	Short Term
17	Bantug Petines	1	(1) Re-Construction of FTMR	3.0 km	Short Term
			(2) Box Culvert (3) in Barangay Residencial Area	3 units	X
18	Dalena & Simanu	3	(1) Re-Construction of Road From San Pabro to Dalena w/ overflow bridge (80m) in Dalena	6.5 km	Short Term
			(2) Re-Construction of Road From Dalena to San Vicente in Dalena	4.0 km	Medium Term
			(3) Re-Construction of Road From S.N. to National Highway in Simanu Norte	4.0 km	Short Term
			(4) Re-Construction of Road From S.N. to Nagbaraalau Sitio in Simanu Norte	3.0 km	Medium Term
			(5) Re-Construction of Road S.N. to Corn Farm including bridge in Simanu Norte	5.0 km	Long Term
			(6) Re-Construction of Road From S.S. to junction of National road to S.N in Simanu Sur	2.5 km	Short Term
			(7) Bridge of the road to S.N. in Simanu Sur	1 unit	Long Term
19	Dammao	1	(1) Rehabilitation of Dammao to Main Canal	1.0 km	Short Term
			(2) Re-Construction of Main Canal to Farm	1.0 km	Short Term
			(3) Re-Construction of Dammao to Farm (village)	0.9 km	Short Term

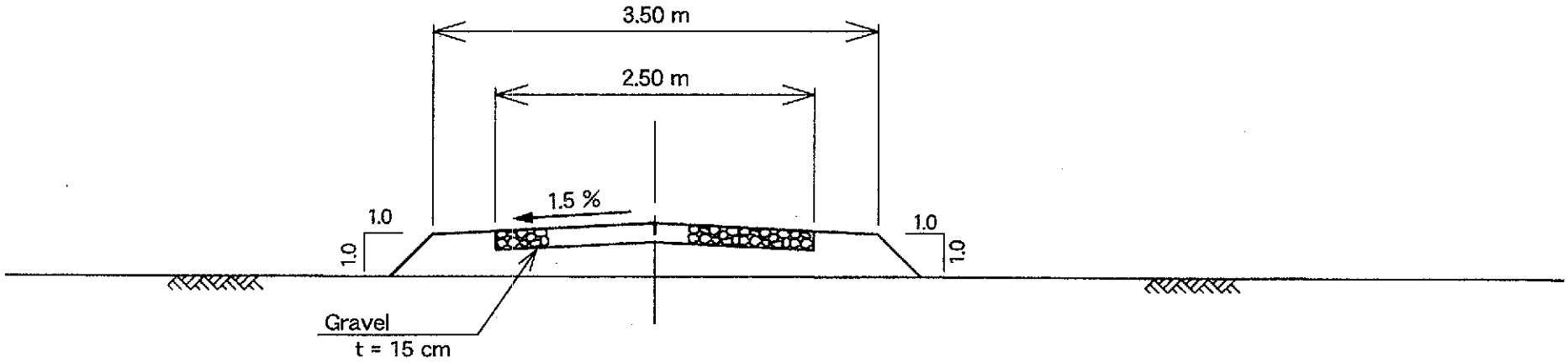
Table F-3-1 Development Plan of Farm to Market Road (3)

No.	Name of ARC	No.	Farm To Market Road	Length	Term
20	San Miguel (Burgos)	1	(1) Re-Construction of San Miguel to Catabban	4.0 km	Short Term
			(2) Re-Construction of San Miguel to Divisoria	3.0 km	Medium Term
			(3) Re-Construction of Roads in residential area	4.4 km	X
21	San Ramon	1	(1) Rehabilitation of Road and construction of bridge on Tao Tao River (80 m)	1.5 km	Short Term
			(2) Construction of Provincial Road to San Manuel	1.0 km	X
			(3) Construction of road to San Rafael	1.0 km	Short Term
			(4) Rehabilitation of FTMR to San Andres-Macatal	1.0 km	Medium Term
			(5) Rehabilitation of FTMR to Apiat	1.0 km	Medium Term
22	Viola Estate Cluster	4	(1) Rehabilitation of FTMR to San Rouque in Santiago	4.0 km	Short Term
				4.0 km	Medium Term
			(2) Rehabilitation of Banquero-National Highway including bridge in Banquero	3.0 km	Short Term
			(3) Re-Construction of Banquero-Santiago Roads in Banquero	2.0 km	Medium Term
			(4) Re-Construction of Sallucong-Santiago road in Sallucong	2.0 km	Short Term
			(5) Re-Construction of Bibarsang-Sallucong road including overflow bridge in Binarsang	1.0 km	Short Term
			(6) Rehabilitation of Bibarsang-Sto. Domingo road in Binarsang	1.0 km	Medium Term

Figure F-3-1 STANDARD DRAWING OF FARM-TO-MARKET ROAD



Farm-to-market Road



Production Road

F.4 Irrigation Facility Development

There are four categories of Irrigation facilities, namely: national and communal irrigation system, implemented by the National Irrigation Administration (NIA); small water impounding project (SWIP), undertaken by the Department of Agriculture (DA) and Department of Environment and Natural Resources (DENR) ; and the minor irrigation facility.

The National Irrigation System covers projects with more than a thousand hectare service area. Its operation and maintenance is under the NIA Central Office through its Regional Office. Irrigators' Associations (IAs) are organized whose responsibility is to collect irrigation fees from the beneficiaries and to be turned-over to NIA Project Office.

If the serviceable area of a project is less than 1,000 hectares, it falls under communal system and it will be implemented by the NIA-Provincial Irrigation Office. (NIA-PIO). An Irrigators' Association is organized through the assistance of a Community Development Officer (CDO). Once the project is completed, it shall be turned-over to the IAs which will be then responsible for its operation including collection of irrigation and repayment fee, and maintenance. The project is payable within fifty (50) years.

It is a project where excess water are impounded for irrigation purposes likewise for controlling floods and protection for landslides, among others. This is implemented by the DENR and DA, upon completion of which is turned-over to the Local Government Units (LGU) for its operation and maintenance.

Minor irrigation facility is implemented, operated and maintained by a group of persons or an individual. Source is mostly ground water and careful investigation on volume and water level is necessary.

Consequently, the involvement of the farmers in all projects is looked into in the development of ARCs, that's why, communal irrigation projects are considered priority while the construction of new lateral and sub-lateral canals for national irrigation system may also be considered upon IAs request and endorsement of NIA Project Office.

Hereunder is the list of ARCs with identified irrigation projects for development:

	Name of ARC	Name of Irrigation Project
1	Lapogan	Lapogan Communal Pump Irrigation Project
5	San Migel	Construction of New Sub-lateral Canal on MRIIS
6	Amulngan – Rizal	Rehabilitation of Weir on Drainage canal for Water Re-use
8	Minagbag	Padapad Communal Irrigation Project
9	Cabaruan	Caunayan Communal Irrigation Project
10	Capirpirwan	Capirpirwan Communal Irrigation Project
16	Andarayan	Andarayan Communal Pump Irrigation Project
18	Dalena & Simanu	Rehabilitation of Simanu Communal Irrigation System
19	Dammao	Dammao Communal Pump Irrigation Project

Each irrigation project is tabulated on Table F-4-1.

Table F-4-1 Irrigation Project on Each ARC/Claster

Name of ARC/Claster		Project Name	Type of Construction	Water Resources	Water Resources Structure			Irrigation Beneficially (name of Barangay)	Total Irrigable Area	Length of Irrigation Canal	Type of Canal	Crops in ARC	
					Dam Height	Pump	Weir or Others						
1	Lapogan	Lapogan Communal Pump Irrigation Project	New Construction	Cagayan River	-	ϕ20"x 2	-	Lapogan	325 ha	3.2 km	Conc. L. Canal	Paddy 325 ha	Corn 199 ha
5	San Migel	Const. of New Sub-Lateral Canal on MRIIS	New Construction	Lateral Canal of MRIIS	-	-	Intake on Canal	San Migel	100 ha	2.8 km	Conc. L. Canal, & Earth Canal	Paddy 100 ha	-
6	Amulngan - Rizal	Rehab. of Weir on Drainage canal for water re-use	Rehabilitation	Drainage Canal of MRIIS	-	-	Small Weir	Rizal Sitio, Amulngan	50 ha	-	Earth Canal	Paddy 50 ha	-
8	Minagbag	Padapad Communal Irrigation Project	New Construction	Padapad Creak	-	ϕ200 mmx 5	-	Minagbag	45 ha	6.24 km	Conc. L. Canal	Paddy 45 ha	-
9	Cabaruan	Caunayan Communal Irrigation Project	New Construction	Caunayan Canal	15.0 m	-	-	Minallo, Cabaruan, Flores, Roxas	600 ha	17.56 km	Earth Canal	Paddy 150 ha	-
10	Capirpiriwan	Capirpirwan Communal Irrigation Project	New Construction	Ilot Creak	-	-	Weir	Estampa Sitio,Capirpirwan	140 ha	4.0 km	Earth Canal	Paddy 140 ha	-
16	Andarayan	Andarayan Communal Pump Irrigation Project	New Construction	Cagayan River	-	ϕ20"x 5	-	Concepcion, San Isidro, Andarayan, Capitol, & Other 6 Barangays	900 ha	17.0 km	Conc. L. Canal	Paddy 340 ha	-
18	Dalena & Simanu	Rehabilitation of Simanu Communal Irrigation System	Rehabilitation	Simanu River	-	-	Weir	Simanu Norte	170 ha	5.8 km	Earth Canal	Paddy 170 ha	-
19	Dammao	Dammao Communal Pump Irrigation Project	New Construction	Cagayan River	-	ϕ20"x 4	-	Dammao & Linglingay	800 ha	5.0 km	Conc. L. Canal	Paddy 167 ha	-

Appendix G Extension and Other Support Services

G.1 Major Extension and Other Support Services Provided

G.2 Descriptions of the Support Services

G.2.1 Services Provided by DA-related Organizations

G.2.2 Services Provided by Other Public Agencies

G.2.3 Non Governmental Organizations (NGOs) and Activities

G.3 Microfinance Schemes

G.4 Fund Allocations

G.5 Achievements of CARP

G.5.1 ARC Level of Development Assessment (ALDA)

G.5.2 Results of Questionnaire Survey

G.1 Major Extension and Other Support Services Provided

Major extension and other support services provided to ARCs, after agricultural lands were distributed to ARBs, are classified into the following:

a) Provision of extension services and trainings on agriculture and other income generating skills as well as organizational development/strengthening

b) Supply of agriculture inputs such as seeds, fertilizers, pesticides

c) Dissemination of market information and market tie-up

d) Construction and maintenance of agriculture infrastructure such as irrigation facilities, farm-to-market roads and post harvest facilities

e) Provision of credit services

f) Assistance in preparation of development plans, project formulation and design

The major extension services and trainings provided to the ARCs were shown in Table G-1-1. Those were related to the agricultural skills on crop and livestock production, income generating activities such as dressmaking and Christmas ball making, and organizational building and development. The credit services were rendered mainly for the purpose of agricultural production; for example, purchase of seeds or farm machinery although the number of the credits provided was very limited. The credit services provided to the ARCs were shown in Table G-1-2.

The supply of agriculture inputs to farmers were carried out mainly by agriculture officers in LGUs. Private companies also provided free seeds and fertilizers to farmers, often with demonstration for the promotion of their products. The DAR is responsible to collect and disseminate information between markets and farmers as well as the assistance in formulation and design of the projects that farmers are intending to implement, although it was done in the minimal scale. The market tie-ups, i.e., contracting between the buyers and producers for tobacco and corn were sometimes facilitated by the private companies. The development plans were prepared by the responsible officers as described in Appendix H or with the help of NGOs. However, NGOs have not been active in the Study Area, except a couple of cases such as PLAN International in provision of day care center and the support for training on income generating skills in one ARC, and BIDANI in preparation of baranagay development plans in several ARCs.

Table G-1-1 Extension Services and Trainings Provided to the ARCs

Section: Institutional Development Section, BDCD-DARPO (Year: 1998-1999)

ARCs	Type of Services	Implementing Organizations	Year	Description of the Activities or Projects	Duration (or Frequency) of Services	No. and Types of Beneficiaries in ARC	Total Expenses (pesos)
Lapogan	Technology Transfer	LGU-MAO	1998	IPM-Rice	4 months	38 Members	16,550
	Organizational Dev't	NIA	1998	Leadership and Enterprise Development	2 days	28 Members, Lapogan MPCI	2,000
	Skills Enhancement	LGU-MAO	1998	Ginger Production	1 day	20 Members, Lapogan MPCI	2,000
	Skills Enhancement	LGU-MAO	1998	Goat Raising	1 day	21 Members	2,000
	Organizational Dev't.	LGU-MAO	1999	PMES	2 days	42 ARBs	5,500
	Skills Enhancement	DTI	1999	Talahib Basketry Making	3 days	21 Members	n.d.
San Manuel	Technology Transfer	PSFI	1998	Integrated Farming System	12 days	13 Members	n.d.
San Miguel	Skills Development	TESDA/DECS	1998	Dressmaking	10 days	10 Members, San Miguel MPCI	1,600
	Skills Enhancement	DA-CVIARC	1998	Livestock (Goat) Production		80 ARBs	n.d.
	Community Dev't	DSWD	1998	Comprehensive Integrated Delivery of Support Service		49 ARBs	n.d.
Isabela Settlement (DIPASIVI)	Capability Building	DOLE/LGU-MAO	1998	Social Preparation and Management	3 days	18 ARBs	n.d.
(DIPASIVI)	Community Dev't	DSWD	1998	Comprehensive Integrated Delivery		49 ARBs	n.d.
(La Suerte Cluster)	Organizational Dev't.	DAR	1999	PMES	2 days	53 ARBs	5,000
Minagbag	Skills Enhancement	PHILPHOS	1998	Swine Production	1 day	22 Members	2,200
Cabaruan	Technology Transfer	LGU-MAO	1998	IPM-Corn	4 months	34 ARBs	16,550
Capirpiriwan	Community Dev't	DSWD	1999	Comprehensive Integrated Delivery of Support Service		27 ARBs	n.d.
Fermeldy	Organizational Dev't.	CDA	1999	PMES	2 days	49 ARBs	5,500
	Skill Enhancement	DTI/Plan Int'l.	1999	Christmas Balls and Box Making	5 days	31 Members, Masuerte MPCI	n.d.
Yeban Norte	Capability Building	DSWD	1999	Community-Based Poverty Mapping	1 day	18 ARBs	n.d.
	Capability Building	DSWD	1999	Community Volunteer Resource	1 day		n.d.
Canan	Skills Enhancement	TESDA/LGU	1999	Cosmetology	5 days	21 ARBs	1,600
	Technology Transfer	DA/LGU-MAO	1998	IPM-Rice	4 months	30 ARBs	15,000
	Technology Transfer	DA/LGU-MAO	1998	Rice Techno Demo Field Establishment	4 months	75 ARBs	n.d.

ARCs	Type of Services	Implementing Organizations	Year	Description of the Activities or Projects	Duration (or Frequency) of Services	No. and Types of Beneficiaries in ARC	Total Expenses (pesos)
Canan	Skills Enhancement	DA/LGU-MAO	1998	Establishment of Demo Farm on Key Commercial Crops	2 years	80 ARBs	n.d.
	Skills Enhancement	DA-CVIARC	1999	Ubi Production	2 days	23 members	1,500
Andaraya	Technology Transfer	DA/LGU-MAO	1998	IPM-Rice	4 months	30 ARBs	15,000
	Technology Transfer	DA/LGU-MAO	1998	Rice Techno Demo Field Establishment	4 months	75 ARBs	n.d.
	Skills Enhancement	DA/LGU-MAO	1998	Establishment of Demo Farm on Key Commercial Crops	2 years	80 ARBs	n.d.
	Skills Enhancement	DA-CVIARC	1999	Ubi Production	2 days	23 members, CAS MPCI	1,500

Bantug Petines	Organizational Dev't.	PCO	1998	PMES	2 days	131 ARBs	5,500
	Organizational Dev't.	LBP	1998	PMES	2 days	25 ARBs	5,500
	Technology Transfer	DA-CVIARC	1998	Orientation on Integrated Farming System	1 day	36 Members, Bantug Petines MPCI	1,500
	Technology Transfer	DA/LGU-MAO	1998	IPM-Rice	4 months	55 ARBs	15,000
	Skills Enhancement	DA-CVIARC	1998	Upgrading of Native Chicken	2 years	5ARBs	n.d.
	Skills Development & Technology Transfer	BFAR-CVROSFR	1998	Fish Production	4 months		n.d.
	Skills Enhancement	DA-CVIARC	1998	Legume Seed Production	2 years	20 ARBs	n.d.
Dalena and Simanu	Skills Enhancement	DA-CVIARC	1998	Establishment of Demo Farm on Key Commercial Crops	2 years	133 ARBs	n.d.
(Simanu)	Organizational Dev't.	DAR	1999	PMES	2 days	35 ARBs	5,500
	Organizational Dev't.	DAR	1999	PMES	2 days	23 ARBs	5,500
San Miguel Burgos	Skills Development	TESDA/DECS	1998	Dressmaking	10 days	ARBs	n.d.
	Skills Enhancement	DA-CVIARC	1998	Livestock (Goat) Production		80 ARBs	n.d.
	Community Dev't	DSWD	1998	Comprehensive Integrated Delivery of Support Service		49 ARBs	n.d.
		DAR	1999	Gender Development	2 days	34 ARBs	n.d.
Viola Estate Cluster	Technology Transfer	DA/LGU-MAO	1998	IPM-Rice	4 months	30 ARBs	17,000

Abbreviations: ARB- Agrarian Reform Beneficiary; DA - Department of Agriculture; DAR - Department of Agrarian Reform; DOLE - Department of Labor and Employment
DOST - Department of Science and Technology; DSWD - Department of Social Welfare and Development; DTI- Department of Trade and Industry
CDA - Cooperative Development Authority; CVIARC - Cagayan Valley Integrated Agricultural Research Center; IA - Irrigators Association
LBP - Land Bank of the Philippines; LGU - Local Government Unit; NIA - National Irrigation Administration; OSY - Out of School Youth
PAO - Provincial Agriculture Office; PCO - Provincial Cooperative Office; PHILPHOS - Philippine Phosphate; PSFI - Pilipinas Shell Foundation, Inc.
TESDA - Technical Education and Skills Development Authority
n.d.=no data

Table G-1-2 Credit Services Provided to the ARCs

Section: Economic and Livelihood Support (Year: 1994-1999)

ARCs	Type of Services	Implementing Organizations	Year	Description of the Activities or Projects	Duration (or Frequency) of Services	No. and Types of Beneficiaries in ARC	Total Expenses (pesos)
Lapogan	Loan	DA-PAO	1998	Shallow Tube Well	once	2 ARBs	42,164
	Loan	DA-PAO	1998	Open Source Pump	once	3 ARBs	77,496
	Loan	DOLE	1999	Goat Raising Livelihood Project	once	10 OSYs	50,000
San Manuel	Loan	DARPO	1998	Farm Machinery (Tractor) for Custom Hire Services (Plowing &Harrowing)	Semi-Annual	San Manuel MPCI	1,639,000
Amulungan-Rizal	Loan	DARPO	1994	IPHF for Rice Trading	Semi-Annual	108 Members, Rizal-Amulungan MPCI	4,229,702
Isabela Settlement (Cenea Cluster)	Loan	LBP	1998	Production Loan	once	291 ARBs, 243 Non-ARBs	2,000,000
	Loan	DARPO	1998	Farm Machinery (Tractor) for Custom Hire Services (Plowing &Harrowing)	Semi-Annual	Nakar MPCI	1,639,000
Minagbag	Loan	DARPO	1994	IPHF for Rice Trading	Semi-Annual	90 Members, Minagbag MPCI	4,229,702
Cabaruan	Loan	LBP	1997	Rice Production under Gintong Ani	once	77 ARBs, 35 Non-ARBs	368,000
	Loan	LBP	1998	Corn Production under Gintong Ani	once	77 ARBs, 35 Non-ARBs	970,390
	Loan	DSWD	1998	Food Processing Livelihood Project	once	15 Women ARBs, 20 Women Non-ARBs	40,000
Capirpiriwan	Loan	DA-CVIARC	1998	Seed Loan	once	22 ARBs	22,000
Canan	Loan	LBP	1998	Production Loan	once	48 ARBs	558,000

Abbreviations: ARB- Agrarian Reform Beneficiary; DA - Department of Agriculture; DAR - Department of Agrarian Reform; DOLE - Department of Labor and Employment
DOST - Department of Science and Technology; DSWD - Department of Social Welfare and Development; DTI- Department of Trade and Industry
CDA - Cooperative Development Authority; CVIARC - Cagayan Valley Integrated Agricultural Research Center; IA - Irrigators Association
LBP - Land Bank of the Philippines; LGU - Local Government Unit; NIA - National Irrigation Administration; OSY - Out of School Youth
PAO - Provincial Agriculture Office; PCO - Provincial Cooperative Office; PHILPHOS - Philippine Phosphate; PSFI - Pilipinas Shell Foundation, Inc.
TESDA - Technical Education and Skills Development Authority

G.2 Descriptions of the Support Services

G.2.1 Services Provided by DA-related Organizations

(1) Provincial Agriculturist Office

The main thrust of the Provincial Agriculturist Office is to pursue "Food Security Action Plan" that aims to ensure sustainable food production and profitability of farmers through modernized agriculture. The Provincial Office is responsible to coordinate actions with line agencies, NGOs and other relevant organizations and to provide technical support to municipal technicians. The following components are included in the Action Plan, and the achievements in 1999 are shown in Table G-2-1:

a) Production Support
- Seed production, certification and distribution on "Plant Now Pay Later Scheme (PNPLS)"
- Provision of certified seeds and other farm inputs to farmer such as organic fertilizers
- Fingerling production, procurement and dispersal

b) Research and Development
- Production of F1 hybrid

c) Post Harvest Facilities
- Construction of multi-purpose drying pavement (MPDP)
- Establishment of circulating mechanical dryers and mobile mechanical dryers

d) Irrigation
- Installation of shallow tube wells, open source pumps
- Construction of small water impounding projects (SWIPs), diversion dams, small farm reservoirs (SFRs)
- Repair of existing irrigation systems

e) Infrastructure
- Construction of farm to market roads

f) Rural Financing
- Provision of credit at affordable interest rate

g) Marketing support services
- Forum for market matching
- Computer and communication facilities for market information program

h) Information Dissemination/Campaign (Tri-Media Approach)
- Audio visual, print and broadcast

i) Training and Extension
- Technical assistance on appropriate technology
- Establishment of techno-demo

Table G-2-1 Components of Food Security Action Plan and Accomplishment (from January to November 1999)

Components	Indicators	Target		Accomplishment		Budget ('000 Peso)		Remarks
		DA*	LGU	DA*	LGU	DA*	LGU	
d) Training and Extension								
- Farmer Field School, IPM	training conducted (no)	20		14				
- Conduct of Techno-demo	demo conducted (no)	33		33				on going
3. Fish								
a) Production Support								
- Fingerling dispersal/stocking to CBWs, Rivers/SFRs	fingerlings dispersed (no)	4	1	3.165	0.6	791.3	15	
- Production	production (MT)	533	133	422	80			
b) Increased Production and Improve Living Standard of Fisherfolks	fishcage established (no)	20		11		150		on going
	fishpond techno demo (no)	4		2		155		
c) Training and Augment POT Awareness								
- Fishcage Management	training conducted (no)	2		2		95		
- Grow-out	training conducted (no)	4		3		95		
- Regulatory-Deputezation of LGU Officials	training conducted (no)	8		2		324		
	patrol boats distributed (no)	4		1		394		
d) Post Harvest								
- Processing and Demo of Fishery Products	training conducted (no)	8						
e) Research and Development								
- Stocking Density/Feeding Trials	trials conducted (no)	2						on going
- Grow-out/Piloting of Marine Cage Culture	trials conducted (no)	2						on going

Note: PNPLS=Plant Now and Pay Later Scheme, SWIP=Small Water Impounding Projects, SFR=Small Farm Reservoir, STW=Shallow Tube Well, OSP=Open Source Pumps, MPDP=Multi-Purpose Drying Pavement, IPM=Integrated Pest Management

DA* shall be read as BFAR (Bureau of Fisheries and Aquatic Resources) for 3. Fish Component.
(source: Provincial Agriculturist Office)

2. Corn (white)						
a) Production Support						
- Certified Seed Distribution thtu PNPLS	bags distributed (no)	30,211	30,211			
- Production	production (MT)			9,990.7		
	area covered (ha)	500		3,591		
b) Irrigation Support						
- Installation of STWs	(no)	50	50		2,100	on going
- Rehabilitation of STWs	(no)	16	16		240	on going
- Installation of OSPs	(no)	16	16		240	on going
- Installation of PISs	(no)	re-alligned for farm equipment				
- Provision of Drilling Rigs	(no)	re-alligned for farm equipment				
c) Post Harvest and Other Equipment Support						
- Construction of MPDP	(no)	40	40		2,400	on going
- Distribution of Multi-purpose Threshers/Shellers	(no)	19	19		1,420	on going

Table G-2-1 Components of Food Security Action Plan and Accomplishment (from January to November 1999)

Components	Indicators	Target		Accomplishment		Budget ('000 Peso)		Remarks
		DA*	LGU	DA*	LGU	DA*	LGU	
I. Rice								
a) Production Support								
- Certified Seed Distribution thtu PNPLS	bags distributed (no)	33,897		33,897		22,033		
- Organic Fertilizer Distribution through Loan at Cost Scheme	bags distributed (no)		28,183		19,307		6,000	
	area covered (ha)		4,006		3,861			
- Establishment of Rice Techno-demo Binhi 100	demo conducted (no)		1		1	189.6	79.4	
	area covered (ha)		57		60			
	production (ave. /ha)		5		4.3			
- Rice Production								
(Irrigated)	production (MT)				502,250			
	area covered (ha)		128,872		129,640			
(Non-irrigated)	production (MT)				27,514			
	area covered (ha)		29,178		8,265.5			
b) Irrigation Support								
- Construction of SWIPs	(no)	1		1		3,675		on going
- Rehabilitation of SWIPs	(no)	2		2		2,107		on going
- Construction of SFRs	(no)	170		170		1,700		completed
- Establishment of STWs	(no)	109		109		4,905		on going
- Rehabilitation of STWs	(no)	31		31		465		on going
- Establishment of PISs	(no)	re-alligned for farm equipment						
- Provision of Drilling Rigs	(no)	re-alligned for farm equipment						
- Provision of 4 wheel Farm Tractors	(no)	4				8,000		negotiation
c) Post Harvest and Other Equipment Support								
- Construction of MPDP	(no)	60		60		3,600		on going
- Distribution of Mechanical Dryers	(no)	14		14		2,700		
- Distribution of Multi-purpose Threshers/Shellers	(no)	20		20		1,500		completed
- Distribution of Hand Tractors	(no)	48		48		1,500		completed
- Distribution of Flash Dryers	(no)							none

Table G-2-1 Components of Food Security Action Plan and Accomplishment (from January to November 1999)

Components	Indicators	Target		Accomplishment		Budget ('000 Peso)		Remarks
		DA*	LGU	DA*	LGU	DA*	LGU	
d) Infrastructure Support								
- Construction of Farm to Market Roads (FMR)	(km)	30.12	173	42.92		9,700		
e) Training and Extension								
- Farmer Field School, IPM	training conducted (no)	48		24				on going
- Maka MASA Training	training conducted (no)	5		5				
- Conduct of Techno-demo	demo conducted (no)	20		10				

j) Program Organization and Management

- Organization of Food Security Council at provincial and municipal
- Creation of Engineering Unit

The targets of the Action Plan in 1999 were to produce a food surplus of 341,951 MT of rice, 3,760 MT white corn and an incremental production of 314MT fish by increasing productivity levels as below:

a) Irrigated rice area from 4.43 MT per ha to 5 MT per ha
b) Non-irrigated rice area from 3.0 to 3.5 MT per ha
c) White corn from 1.9 MT to 3.0 MT per ha
d) Aquaculture production from 1.4 MT per ha to 2.0 MT per ha

(2) Office of Provincial Veterinarian

The Office of Provincial Veterinarian is responsible for livestock development in the province in collaboration with municipalities. The activities include: (i) animal dispersal to barangay households, (ii) artificial insemination to cattle and carabao, (iii) preventive vaccination against priority diseases, (iv) free treatment including deworming and vaccination in infected areas and (v) technical assistance to barangay people in livestock production, meat processing, preparation of a feasibility study and fund sourcing.

Under the animal dispersal program, the Office dispersed and loaned out 1,047 cattle, 142 carabao and 269 swine covering total 276 barangays (as of November 1999). The major principles of the program are as follows:

a) Breeder cattle or swine are provided without charge to a household, who accordingly should be responsible for feeding it.
b) After the cattle breeder gives birth to off-springs, the breeder or the off-spring should be returned to the Office for another household to succeed to feed. The remaining breeder or the off-spring becomes an asset of the first grower.
c) In the case of swine, two female off-spring should be returned to the Office after the birth. The breeder swine and the remaining off-springs become an asset of the first grower.

From January to November 1999, artificial insemination has been done to 581 carabao and 600 cattle. In addition, the Office conducted 13 trainings in the same period, which covered cattle, carabao, swine or poultry production, meat processing and pasture/forage development.

The Office has also been rendering technical supports to the Isabela Cattle Raisers Multi-

purpose Cooperative since 1995 under the Multi-livestock Development Loan Program conducted by DA Central Office. The Program provides low-interest loans without collateral to the cooperatives in the province which are assessed as functional, economically viable and sufficient land holding for livestock. The trainings before and during the lending are provided to strengthen the management and business capabilities of the cooperatives. Currently, the Cooperative consists of 42 members and possess about 100 cattle.

(3) Agricultural Training Institute (ATI) – Farmers Training Center (FTC) in San Mateo

ATI-FTC in San Mateo is a training arm of the Department of Agriculture in the region. The FTC coordinates trainings with funding agencies, if not financed by itself, that include DA-RFU (Regional Field Unit), LGUs, DAR and research institutions for provision of trainings to trainers, e.g., extentionists and agriculturalists of LGUs, field-level staff of public institutions, seed producers and farmers. In line with the Agriculture and Fisheries Modernization Act (AFMA) that defines the agricultural program of the Estrada Administration, most of the trainings are related to agricultural production. It has recently been focused on food security through sustainable production, and particularly, the concept of appropriate technologies such as balanced fertilization and integrated pest management (IPM) was incorporated in the trainings. Some of the training programs are directed also for institutional development of people's groups such as cooperative and Rural Improvement Club (RIC) in barangay.

The IPM program is conducted at a techno demo farm (50 to 100 ha), called Farmer Field School (FFS). The FFS is conducted upon request from LGUs through the Municipal Agriculturist and DAR for the provision of trainings to technicians of LGUs, who are directly responsible for technology transfer to farmers, the DAR field personnel and farmers themselves. The costs of inputs such as seeds, fertilizers, etc. are financed by the requesting agencies while farmers are requested to provide free labor.

Regarding research and development (R&D) and extension activities, the FTC is currently closely related to the Council for Extension for Research and Development in Agriculture and Fishery (CERDAF), Philippine Rice Research Institute (PhilRICE) and Cagayan Valley Integrated Agricultural Research Center (CVIARC). To pursuit the objectives of AFMA, the ATI is mandated to coordinate all the trainings related to agriculture from 2000.

In 1999, the FTC collaborated with the DAR in the conduct of two trainings for ARC development; (i) Inbred Rice Seed Production and Identification for ARCDP (Agrarian Reform Community Development Program) and (ii) Inbred Rice Seed Production Course for ARC-Coop Member. The costs of all trainings conducted by the FTC from January to October 1999 were

P158,375.60 funded from ATI and P629,635,50 funded from other institutions. No evaluation of completed-trainings, however, has been made so far.

(4) Bureau of Fisheries and Aquatic Resources (BFAR), Cagayan Valley-Research Outreach Station for Freshwater Resources (ROSFR) in San Mateo

The main objective of ROSFR is to increase supply of high-quality tilapia in the Region II in accordance with the policy of BFAR 2000. The activities of ROSFR are concentrated on research, mainly for improvement in production of high quality germplasm of tilapia fingerlings and broodstock and improvement in growth, breeding, disease resistance and other economic importance value. Tilapia is the most important cultured species in terms of taste and demand in the market, as the study conducted by BEAR shows that 41% of the total yield from inland fisheries has been from tilapia. In terms of production, the fish sufficiency level of the Region II is only 24%. This means that 76% of the total fish requirement of the Region is met by the production in other regions.

While ROSFR's primary activity is concentrated on research, it is also involved in extension activities by providing training to LGU agriculture technicians and field staff of line agencies. The training is, however, conducted in a small scale with three extension workers. The training requests from agencies are forwarded to the Regional Fishery Training Center (RFTC) for approval.

In collaboration with the Department of Science and Technology (DOST), ROSFR is involved in Consultancy Assistance for Product Enhancement (CAPE) Program for provision of training to fish-farmers through establishment of demonstration farms for tilapia hatchery operation. In this Program, fish-farmers are tapped to become cooperators with the following arrangements:

a) Fishpond (or fishpond to be converted as fishpond) of the fish-farmers is used as the demonstration farm. The demo. farm requires an area of 1 ha.
b) ROSFR and DOST provide the necessary technical assistance, including the initial broodstock for fingerling production and grow-out, while labor shall be provided by the farmer-cooperator.
c) Fingerlings produced in the demo. farm shall be bought by ROSFR for dispersal with prices ranging from P0.10 to 0.40 per fingerling.
d) ROSFR produces breeders but does not sell fingerlings so as not to compete with its cooperators and other fingerling producers.

A cooperator of ROSFR in Barangay Canan has dug several fishponds with his buffalo to start grow-out activities. With the assistance of ROSFR, he shifted to hatchery operations. He has been expanding the fishpond area gradually since 1995, and currently the total area has become more than 2 ha. It has the production capacity of 300,000 fingerlings per month. For grow-out,

he pays Peso 0.20 per fingerling to ROSFR, and after 3 to 4 months he sells the grown tilapia at Peso 30 to 40 per kg (usually 5 pieces per kg). He is now a well-operating small-scale fingerling producer.

G.2.2 Services Provided by Other Public Agencies

(1) Technical Skills Development Administration (TESDA)

TESDA was located under the Department of Labor and Employment (DOLE) and currently shifted to under the Office of President. TESDA is mandated to provide basic skills trainings to unemployed youths, with at least the qualification of high school graduate. The subjects include agriculture machinery/motorcycle repair and maintenance, food/meat processing and preservation, noodle making, candy making, baking, dressmaking, quilting, tailoring, Christmas decoration making, plumbing, computer, hair styling, cosmetology and other basic skills. Trainers are sought from its long list upon receipt of the requests from LGUs, NGOs, etc. Its training center is located in Ilagan. TESDA also operates "Post-secondary Non-degree Program" in various places.

(2) Department of Science and Technology (DOST)

DOST promotes the development of commercial products that can be produced with resources and technologies locally available. It also organizes science fairs aiming to introduce potential products in the areas and to source finances for development. The Provincial Science and Technology Center in Isabela has been providing technical assistance, in collaboration with the Central Office, to the following business activities in the area:

a) Ceramics production
b) Essential oil processing: Oil extraction from citronella
c) Pineapple processing: Production of dried pineapple candy, jam and vinegar
d) Other processed products: Mongo crunchies, peanut products, banana vinegar and chips, pickles using singkamas

(3) Department of Technology and Industry (DTI)

The activities of DTI are classified into the following four areas:

a) Production: Provision of common service facilities to beneficiaries such as oil extraction equipment, sawing machine, etc.
b) Market Linkage: Organizing local trade fairs and exploration of possible business arrangement

c) Finance: Loan assistance to cooperative members for small and micro-enterprise activities (the past activity in the Self Employment Loan Assistance Project by ADB)
d) Skills Development: assessment of the local resources and markets and provision of trainings of appropriate technologies to groups. Preparation in project proposals and feasibility studies.

The budget allocated to implement activities by DTI Isabela in 1999 was Peso 80,000 only excluding salaries and allowances. The major extension services of DTI-CARP Isabela conducted between January to November 15,1999 are as follows:

a) Training/Seminars
- Basic skills trainings to ARCs on Christmas Balls Making, Talahib Basketry Making, Cogon Basket Weaving, Meat Processing, Dressmaking and Banana Proessing
- Skills upgrading training on Talahib Basketry and Christmas Balls Making
- Management trainings on Entrepreneurship and Cooperative Bookkeeping

b) Market Assistance
- Assistance in participating a day trade fair
- Exploration of possible contract-growing arrangement between a private business man and ARC

c) Project Development Studies
- Preparation of project feasibility study on agricultural production
- Preparation of project proposals

G.2.3 Non Governmental Organizations (NGOs) and Activities

(1) Cagayan Valley Cofederation of Cooperatives and Development Center (CAVALCO)

CAVALCO was organized in 1989 as a provincial federation of cooperatives in Isabela, and has grown to a regional cooperated development center since1997. The main objective of CAVALCO is to facilitate community and cooperative development through financial and institutional supports to the cooperatives in the region and the integration of activities of own members and its network in the country. CAVALCO has 202 affiliates of the cooperatives, about 80% of which are organized by farmers. Other cooperatives consist of professionals, teachers, drivers, employees, etc. CAVALCO has currently 67 staff that include 24 permanent employees.

The Office is divided into three departments; Service Department, Business Department and Microfinance Department. The Service Department undertakes the education and training programs that include consultancy services and trainings for institutional and technical skills development to members as well as non-members. The Business Department is responsible for loan delivery and collection, marketing assistance and life/health insurance operation. The microfinance operation, called as "Kooperatibank", has been started from July 1998 with the financial supports from PLAN International. Currently, the microfinance operations are conducted at its several branches.

CAVALCO has conducted consultancy services and trainings for institutional development for a number of programs and projects funded externally or internally. One of those programs is Agrarian Reform Infrastructure Support Program (ARISP) in Cagayan. In 1998, CAVALCO provided four trainings in relation to ARC development in Isabela; "Membership and Ownership Development Seminar", "Cooperative Value Enrichment Seminar", "Leadership and Managership Development Course" and "Auditing and Internal Control System".

Currently, CAVALCO applies the rate of Peso 100,000 to 200,000 per month to render any type of consultancy services by a senior consultant or Peso 21,000 by a junior consultant. The rate of training is normally Peso 5,000 per day applicable for 30 to 40 participants. An affiliated cooperative is requested to save 5% of their net income as a CETF (Cooperative Education and Training Fund) for receiving trainings and to deposit another 5% at CAVALCO for the same purpose. When the fund is accumulated at Peso 7,500 at CAVALCO, the cooperative is entitled to receive a training.

(2) Barangay Integrated Development Approach for Nutrition Improvement (BIDANI) of the Rural Poor

The faculty group of Isabela State University forms a NGO, the Barangay Integrated Development Approach for Nutrition Improvement (BIDANI) of the Rural Poor. The main objective of the BIDANI is to improve the nutrition and general well-being conditions of the rural poor. The BIDANI works closely with municipal governments as well as barangay organizations aiming at improving their capabilities in planning and management of development activities. The main funding sources for the BIDANI are the BIDANI Foundations and the Community Development Fund (CDF). The BIDANI has established its country-wide network in collaboration of seven state universities and colleges, called the BIDANI Network SUCs. Under the Network, the information, experiences and expertise of the related activities of those SUCs are integrated and shared each other.

The BIDANI approach starts with the orientation meetings at the municipal level to discuss its objectives and approaches and to identify the most needy barangays in their jurisdiction. After the barangays are selected, the BIDANI team has the orientation meetings with the barangay people and then steps into social mobilization phase. During this process, a barangay nutrition scholar development worker (BND-DW) is selected and given trainings by the BIDANI team. At the end of the preparatory activities at the barangay level, the Barangay Integrated Development Plan (BIDP) is prepared through the creation of Program Planning & Implementing Committee (PPIC) in the barangay and the analysis of the barangay situation. The emphasis is placed on participatory and bottom-up approach during the whole process.

After the BIDP is prepared, the BIDANI team communicates the municipal office to review and integrate it into the municipal development plan. A municipal technical action committee (MTAC) is organized to be responsible for planning, implementation, monitoring and evaluation of the development programs. The linkage with national and international agencies as well as NGOs for funding to implementation is also one of the missions of the BIDANI. In the Study Area, some ARCs are covered by the BIDANI and the respective BIDPs have been prepared.

One of the BIDANI's important activities is education and training to municipal officers as well as barangay representatives. To strengthen those activities, training and extension packages have been developed and produced for use in BIDANI activities at various levels. The publishing includes "Training Manual for Municipal Technical Action Committee", "Training Manual for Barangay Integrated Development Worker", "Manual for Training and Action Planning of the Program Planning and Implementing Committee", etc. prepared in 1998 with the technical assistance from the Netherlands.

(3) PLAN International

PLAN International focuses on child development with the following five working domains:

a) Growing-up Healthy Domain: (i) Establishment/Strengthening of community management health system and (ii) School-based health and nutrition program
b) Learning Domain: (i) Improvement of elementary education and (ii) Early child hand care and development
c) Habit Domain: (i) Access and use of water and sanitation and (ii) Organizational building and strengthening
d) Livelihood Domain: (i) High performance poverty lending (microfinance), (ii) Skills/Vocational training for women/youth and (iii) Sustainable agriculture program
e) Building Relationship Domain: (i) Quality sponsorship management program and (ii) Promote of children's rights

PLAN organizes and strengthens groups and coops in barangays in various ways aiming that children will be supported by their parents in those groups consequently. PLAN Isabela has 32 staff and has been implementing projects for a number of barangays in six municipalities. In the Study Area, however, it has implemented projects such as construction of a day care center and farm-to-market roads, provision of skills training on Christmas ball decorating, etc. to Fermeldy ARC only. According to PLAN, it will concentrate its activities on the current barangays and will be phasing out from Isabela from 2006.