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RESEARCH AND OUTREACH SUBPROJECT

ACCELERATED AGRICULTURAL PRODUCTION PROJECT

(Terminal Report)

Prepared for the

BUREAU OF AGRICULTURAL RESEARCH
DEPARTMENT OF AGRICULTURE
REPUBLIC OF THE PHILIPPINES

and the

U.S. Agency for International Development

Manila, Philippines

by

Dr. MAGIN L. RETUERMA

(Name of Consultant)

ERNST & YOUNG INTERNATIONAL

September 15, 1989 - May 31, 1991
(Start of Consultancy)

SHORT NARRATIVE REPORT ON THE
HIGHLIGHTS AND ACCOMPLISHMENTS

1. Country-side evolution:

It's a common scene in the country-side that after rice or corn harvest fields are temporarily abandoned until the next planting time. This is a strong evidence that most of our farmers are vividly practicing monocropping system of agriculture. Seldom you can see other crops planted after rice/corn harvest. Does this mean that our farmers are already satisfied to the earnings from rice or corn, and as already part of their lives inherited from generation to generation? However, this is not so for majority of our farmers are living far below the poverty line.

Many of our farmers know in reality that their income from these crops is not enough to support their families, which is usually a big one. Their low income from rice or corn are because of high cost of inputs and labor, and low yield which is far below the national average. Furthermore, it is compounded by the low and unstable prices of farm produce. All these problems virtually sets farmers into a permanent poverty. A government intervention might help our poor farmers from their present socio-economic situation. The Department Of Agriculture through the implementation of the Research and Outreach Subproject (ROS) could be the solution to our farmers plight.

2. Farmers Poverty - Their causes:

Reviewing the results of the RRA in the 18 barangays selected for ROS implementation in the Region 5, identified poverty of farmers related to the monocropping system of agriculture, lack of technologies for upland development, lack of improved seeds and planting materials, pest and disease damage, loss of soil fertility and the lack of capital. And therefore, the ROS top priority activities are concentrated along this line to implement activities responsive to the needs and problems of our farmers.

3. The ROS response to the farmers need and problems:

The ROS implementation in the 18 barangays in the Bicol region, technicians identified two development zones - upland and lowland in each project site of the ROS. Technologies on the cropping patterns, multiple cropping and livestock integration were introduced and tried to break the monocropping system, the farmers practice. These technology verification trials were successful and widely adopted by many other members of the community. These technologies were successful in the upland where corn as their major crop. In the upland country side the plantings of peanut, bush sitao, mung-bean, sesame and other crops grown side by side with corn or grown after corn harvest. The timely introduction of these technologies provided the

needed additional income for their families.

In the lowland, a cropping pattern following rice harvest are planted to watermelon, cabbage or pechay. A farmers practice of inter-node pruning of every third node in the lateral and leaving the terminal node, and also removing some of the early young fruits and limit the number of fruits per hill of watermelon was very successful in the trials in Iriga city. About four to five fruits were allowed to mature per hill. ^{As a} Result, fruits were much bigger, weigh heavier and of good quality. Initial trial of one-half hectare expanded to five hectare in the neighboring communities. The plantings of watermelon and cabbage gave good income to our farmers. But then, it is anticipated that there will be an over supply of these products if many more farmers will be induced to plant cabbage or watermelon in these areas.

The rice-fish culture trials is now increasing in the number of cooperators, especially those farmers with fields along the irrigation canals. Presence of water most of the time is important in this technology. However, areas where there is stagnant water which common in the Bicol area, rice fish culture is very much welcome by our farmers.

Duck raising, swine and calf fattening being raised in addition to rice production gaining momentum in most of our project sites of the ROS. Raising of ducks play a dual role- 1. as a means of reducing or controlling of the golden snail in fields, 2. for egg production and meat. Intensive duck raising, swine and calf fattening under going in the ROS sites in Camalig and Ligao, Albay.

Vegetable production in addition to rice are progressively being done in Sorsogon. DARCOP in Sorsogon planned to have the technology commercialization on vegetable production to supply neighboring provinces of Masbate, Samar and Leyte.

4. Some Highlights in Community Management:

The establishment of barangay nurseries in the ROS project sites in Camalig and Ligao, Albay is a true picture of community efforts and commitment. The nursery lots in these areas were leased or donated from an active cooperator. Materials for fencing and for building the nursery shed were contributions members of the community. Before, the barangay chapel is being used for community assembly and conferences, but with the building of the nursery shed now being widened and improved as the barangay hall. Further, some planting materials and seeds being propagated and multiplied came from the cooperators, and majority coming from the municipal DA. Barangay nursery maintenance manned by rotation among the cooperators. Training needed - Nursery production and maintenance was provided by the Provincial DA to farmers from ROS project sites.

Establishment and strengthening of Cooperatives:

Because increased production is already attained most of our ROS sites, market outlet of their produce is a problem. High corn production was achieved in Borocbosoc, Buhi, Cam. Sur, but low market price prevailed and farmers will incur big losses if they sell their produce in the open market. ROS technicians campaigned for the establishment of cooperatives to have a bargaining power against middle men and have good selling prices to bigger companies in big volume of their produced.

Functional cooperatives are in Bonga, Ligao, Albay and in Matnog, Sorsogon. Cooperatives established and ready for registration in Borocbosoc, Buhi, C.S.; San Isidro, Iriga City; Palanog, Camalig, Albay; and Lahong, Bulan, Sorsogon.

5. DARCOP Orientation and Workshop:

DARCOP orientation and workshop conducted recently participated by all DA personnel involved in ROS. Each province were able to identify their respective DARCOP sites - San Isidro, for Cam. Sur; Palanog for Albay; Lahong for Sorsogon. Each province were able to identify likewise, their potential technology for commercialization. Camarines Sur on technology on 'Field corn + peanut. This is to supply raw materials for the Income Generating Project (IGP) for peanut butter making, and to supply 5 tones of shelled peanut to local company each month. Albay will try the potential commercialization on the technology on corn production- from 2 tones to 4 tones. Sorsogon will commercialize the technology on Vegetable production. Sorsogon will supply the vegetable needs to Masbate, Samar and Leyte. They have prepared a Gaunt Chart of their activities this third quarter of this year.

6. Lastly, I'd like to give due recognition and appreciation to all DA personnel involved in the ROS, whose unselfish commitment made the project a success in Region 5;

1. Many of our MAO's and technicians doing their ROS functions during off-hours, Saturdays and Sundays, Holidays and even on Holy Thursday and Good Friday. This is to be a model for farmers to see the sincerity to our DA personnel to the ROS.
2. MAO's spending their personal money to have a start in the implementation of ROS at the early stage of the project in 1989, which until not yet reimbursed.
3. Credit line of the MAO's and technicians at stake, for the materials used at the start of ROS implementation were obtained by credit until now not yet paid by management.
4. DA technicians doing ROS functions spend their own money for the gasoline most of the time and with meager TEV.

I'd like also to give due recognition of our cooperators who have shown serious commitment to our ROS.

1. Buying the seeds, fertilizer and pesticides needed in the trials is there's

some delay in the release of funds for such materials.

2. There was a close and serious participation among our cooperators in the conduct of our ROS trials and providing us unbiased informations in our research activities.

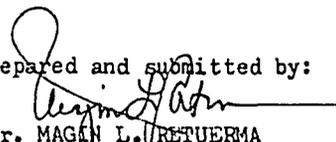
3. There was even the death of one of our active cooperators by the NPA last year in Palanog, Camalig, Albay.

4. Somehow, there's also bad consequences of our ROS implementation to some of our cooperators in Bonga, Ligao, Albay. Because of jealousy these cooperators of Bonga threaten us of noncooperation if we expand our activities to the neighboring barangay (Paulog). They want all the attention be directed to them. So, we decided to make Pandan, the other ROS site as the site-in-focus.

As my last comment and conclusion, I'd like to thank the AAPP-ROS through our General Contractor (Ernst and Young) for giving me a chance to share my expertise and efforts as regional consultant in the making of this project a success. I only regret too, that my services was cut short when ROS activities at its peak. But least be assured that I'll still have an open hand to help in any way for ROS be more successful. I have shared and spent some glorious moments of my life with ROS.

Thank you, thank you and thank you very much.

Prepared and submitted by:



Dr. MAGIN L. RETUERMA
ROS Regional Consultant

Name of Consultant : Dr. Magin L. Retuerma
 Name of PIU : Research and Outreach Subproject
 Period Covered : September 1989 to May 31, 1991

Activities	Problems	Actions Taken	Strategy Used	Insights	Recommendations	Lessons Learned
I. Project Management						
1. RRA Training for the conduct of RRA in 18 barangays by DA person-nels.	1. Time pressure was a hindrance to more rigid training on RRA.	1. RRA training was awarded to CSSAC training staff.	1. Fifty participants from the DA involved in ROS activities under gone training.	1. RRA training should be a routine and regular procedure in the conduct of studies in the DA.	1. Efficient RRA survey should result from these training.	1. DA person-nels only now have undergone RRA trainings and gives them a good lookout on similar studies like this.
2. RRA conducted in 18 barangays in the Bicol region.	2. Result of RRA survey, problems identified were; a. lack of capital b. low yield of rice and corn due to monocropping c. pest and disease damage d. lack of seeds and planting materials e. high cost of inputs f. lack of upland technologies.	2. Respective RRA survey conducted in each ROS site, under the assistance of the regional staff.	2. Trained DA personnel group into different groups and coordinated with barangay officials with the participation of the farmer.	2. Utilize good estimation to be good in RRA survey to give good status of the barangay.	2. RRA data should be the basis for the research proposals as a response to the known farmers needs.	2. Without the RRA a true status of the barangay will not be known and acted upon.
3. Conduct of ROS orientation and still not well implemented in the region as well as in the municipalities.	3. The ROS principle stated and regarded as just like any other program of the government.	3. Conduct of AAPP-ROS seminar and work shop with resource persons from the BAR Zonal and Regional consultant giving the over view of the ROS. This was conducted Sept. 22, 1989.	3. All DA person-nels involved in ROS were participants to this seminar. Likewise, ROS orientation were conducted in the respective province with the barangays farmers as participants.	3. Orientation of ROS in just few meetings pamphlets, papers distributed to all DA person-nels involved in ROS.	3. More literatures pamphlets, papers be distributed to all DA person-nels involved in ROS.	3. As saying says 'its hard for old dogs to learn new tricks'.

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I. Project Management
 (cont. . .)

<p>5. Farming system re- search/extension and implementation work- shop.</p>	<p>5. ROS approach is in the use of the farming system based on the NAREA, farming system is not familiar to the DA personnels. Most are comodity-oriented.</p>	<p>5. All DA personnels involved in ROS were re- quired to participate 5.1. Even those not involved in ROS attended.</p>	<p>5. A seminar and work- shop was an agenda for the orientation on the BA to attend FSR/E farming system approach conferences before the ROS implementation.</p>	<p>5. I would too require all personnels in the BA to attend FSR/E on the Farming system and discuss through- ly the NAREA for the Bicol region.</p>	<p>5. Recommend more se- minars and conferences on the Farming system and discuss through- ly the NAREA for the Bicol region.</p>	<p>5. It takes a long er time for DA people to have a through knowledge of a new approach.</p>
<p>6. Establishment of a regional AAPP-ROS str- uctural organization</p>	<p>6. to delineate the duties and rsponsibil- ities of the different officials at the dif- ferent level of manage- ment. Some are still confused or does not know very well is duties and responsibilities.</p>	<p>6. A regional conference was conducted and the structural organization level of management was well discussed. delegation of respon- sibilities should not cause confusion.</p>	<p>6. Closer coordina- tion among the different of management and closer communicat- ion activities. 6.1. Moves and actions to have a closer link- age between the research and extension.</p>	<p>6. An efficient flow of activities once each know his duties and re- sponsibilities. Research and extension office should only be one.</p>	<p>6. Closer coordination between research and extension.</p>	<p>6. Both sides should take the initial steps for research and exten- sion to work together.</p>
<p>7. Monthly conference of DA personnel invol- ved in the ROS.</p>	<p>7. Pproblems encounte- red in the implement- ation of ROS activity were presented and common problem are; a. slow and untimely release of funds b. Funds for the gas- oline and TEV are de- layed or none at all.</p>	<p>7. Because of problems in slow release of funds ROS activities should be regarded as a regular ty. activity of the DA. 7.1. Some problems were technical and refered to experts for its sol- tions</p>	<p>7. Emphasis on the role of the ROS as a regular DA activi- ty. 7.1. Technical problems some times taken slight ease damage as one of the farmers problem for his low production and income. these must be taken seriously.</p>	<p>7. Many still consider ROS as a special pro- ject of the "A." 7.1. Pest and dis- ease damage as one of the farmers problem in ROS sites.</p>	<p>7. Recommend to faci- litate the release of funds 7.1. Emphasis on pest and disease control in ROS sites.</p>	<p>7. Financing con- strains should not there in the first place. 7.1. Pest damage is a constrain in increased productio n.</p>

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I. Project Management (cont.e.)						
8. Field visitation, observation and monitoring of ROS activities in region 5.	8. Field visitation and monitoring done except at the municipal DA is still a big problem. DA vehicles is not enough for a consistent field visitation and monitoring except to use the public conveyance.	8. For field visitation by using the public conveyance/vehicle.	8. Field visitation regularly mostly using public vehicle.	8. Mobility can improve monitoring of ROS activities.	8. The creation of the sites in focus can reduce gasoline consumption,	8. Too many sites some times hard to be attended to. A few sites but well attended is much better.
9. AAPP-ROS re-orientation seminar and workshop last February of 1990.	9. Still many of the people involved in the ROS have not well understood the ROS principle.	9. Conduct of this re-orientation seminar in Baguio City. Participants from Region 3,4, 5.	9. A well depth seminar or the ROS as a review of each capability in understanding of the ROS.	9. This re-orientation seminar should have been given regularly to kept ROS guiding principle fresh in the minds all the time.	9. Recommend the regular giving seminar or workshop to DA staff	9. Some people loss ineterest if what they are working on is full of setbacks.
10. Field evaluation by USAID, BAR, National and Zonal Consultants.	10. Interview of these evaluators on the DA staff and farmers have gained insights of its success and problems.	10. The field evaluation of these people concerned were greatly appreciated and sites visited should	10. Field evaluator were shown in different sites, interviewed technicians and farmer cooperators.	10. A pictural monitoring by means of video filming of the sites ROS. Pictural or film-visited will give more impact when presented in the central office.	10. Regular field visitation will benefit ROS. Pictural or film-office will appreciate the success of ROS in the region by constant field visitation and filming.	10. Only then people in the central office will appreciate the success of ROS in the region by constant field visitation and filming.
11. Creation of the sites-in-focus	11. Criteria in the selection of the site-in-focus none.	11. Progress reports from the 18 barangays of ROS were reviewed	11. MAO's and APT's were asked to review the progress reports of each baraggay.	11. Obviously among the three barangays in each municipality is progressive and	11. Selection was given to the MAO's and PT's	11. There is always the good, better, and the best.

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1. Project Management (cont.e.e)						
12. DARCP orientation	12. Identification of technologies for commercialization is quite complicated.	12. A seminar and workshop on DARCP was recently conducted.	12. Review of technologies with potential for commercialization in relation to the local, national and international markets.	12. Recommend the implementation of their Gaunt Chart so the commercialization of a technology in the province be started.	12. A much deeper studies on a certain technology for commercialization will be successful or not.	12. Commercialization of a technology is serious and it takes a more in-depth studies.
II. Project Implementation						
A. Research:						
1. Technology Verification:						
a. Cropping pattern trials	a. Corn-based cropping pattern trials lack open-pollinated corn varieties, instead used hybrid varieties which are high tech.	a. Use of hybrids for cropping pattern trials were changed to open-pollinated varieties of corn. This was in Boac, Buhay and San Isidro, Iriga City	a. Field visitation and interview of farmers as cooperators.	a. Farmers and technicians were forced to use corn hybrids in their trials because these were the most cost of fertilizer on credit.	12. Although first harvest were successful, later plantings farmers feel the high cost of fertilizer needed by the hybrids to have a good harvest.	12. When on credit, you use some times of what you don't need.
b. Multiple cropping (Coconut + banana + pineapple + papaya + black pepper)	b. Some planting material were not available and expensive.	b. Successful multiple cropping sites in Camarines Sur, Albay and Sorsogon	b. Multiple cropping trials served as a demo plot at the same time. Other farmers followed the technology and it has expanded to neighboring communities	b. These multiple cropping trials and its technology is what the farmers want to increase their income after rice or corn harvest.	b. Recommend and advocate the adoption of the multiple cropping technology.	b. Various cropings will really mean additional income at different times.

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II. Project Implementation (cont. . .)						
c. TPR - TPR - pechay/cabbage/watermelon	c. serious damage due to diamond-backed moth (DBM). DBM have developed resistance to used pesticides by farmers.	c. Use of physical barriers and light traps. Planting of repellent crops/trap crops.	c. Field observation and interview on the extent of damage of the DBM/	c. If farmers could prevent the planting of cabbage for several years DBM might be controlled.	c. Diversity of vegetable production so cabbage producers will incur less losses from planting of cabbage. Study on the control of DBM in Iriga City with biocontrol or with botanical pesticides.	c. No other means of controlling the DBM by farmers if pesticides.
d. Rice + fish trials	d. This trial is only applicable in areas where is constant water available in the rice fields. d.1. Availability of fingerlings.	d. Now it is a common site near irrigation canals. rice fish culture is expanding and increasing.	d. Dissemination of information regarding successful rice-fish culture to farmers induced them to adopt the technology. d.1. Demo-trials are frequently visited by farmers.	d. Only is our irrigation system is constantly having water, rice fish culture will be progressive.	d. Survey of upland areas for possible construction of small scale water impounding system.	d. Farmers also know technologies that can increase his income, or health.
e. Livestock integration						
1. TPR - TPR + duck raising/hog/ calf fattening	1. Golden snail is a serious problem in rice fields, raising of ducks will help control the pest	1. Dispersal of ducklings to farmer cooperators at the start of the planting of rice to control the golden snail.	1. Ducks are being released after rice planting to feed on the snail attacking the rice.	1. The raising of ducks will initiate another industry that is 'balut' production	1. Closer follow up on this activity	1. Initiatives like this is hitting two birds with one stone.

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II. Project Implementation (cont. . .)						
2. Technology Adoption						
a. Biological Control using Trichogramma in the control of corn borer.	a. Lack of supply of Trichogramma cards to farmers adopting the technology.	a. Planning to train farmers with the support of technicians in the mass production of Trichogramma.	a. Trichogramma trials were observed to have reduced corn borer incidence by other farmers.	a. Campaign on bio-control still wanting and farmers need information on the advantage in the use of biocontrol.	a. Recommend to technicians to campaign in the use of bio-control agents against pests and diseases.	a. Technology readily adopted by farmers.
b. Detasseling trials:	b. Detasseling observed to be laborious and to be expensive	b. Demo-plot on detasseling combined with the use of Trichogramma	b. In the monthly dialogue with the core group and the DA staff campaign on the use of trichogramma and detasseling were discussed.	b. Training and workshop to be rendered by the Regional center on pest control in this barangays be beneficial.	b. A through study in masses of trichogramma in the rural areas by farmers be conducted.	b. Initiatives eventually coming from farmers if the technology introduced are responsive to their needs.
c. Rhizobium and fertilizer trials for bush sitao and peanut	c. Rhizobium sources are readily available	c. Request for more rhizobium materials for trials and distribution to farmers	c. Demonstration on the procedure in the use of rhizobium have been made to farmers	c. Rhizobium materials should be mass produced to be readily available to farmers adopting the technology	c. More demonstration on the use of shizobium to farmers for adoption.	c. Farmers found synthetic fertilizer but rhizobium for increased production.
B. Extension						
1. Barangay Nurseries	1. Some barangays are sold to the idea of having barangay nurseries. Lack to seed and planting materials for propagation and multiplication.	1. Training of farmers on seed production and vegetative propagation	1. Community planning and coordination in the setting up of the barangay nursery.	1. Since the government technicians can not provide or loan seed material to farmers, establishment of a nursery in each barangay can help solve the problem	1. Campaign more in the establishment of a barangay nursery for farmers to have a local source of seed and planting materials	1. Little more campaign and convincing power farmers can readily sold to the idea. Barangay officials can help

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B. Extension (cont. .)						
2. Demonstration plots on;						
a. Field corn + bush sitao	a. These showing much potential for adoption by farmers	a. Demonstration trials have been conducted on farmers field.	a. Pre-planning on demo-plot trials with farmers. Since area is increased, farmers participation is needed.	a. Demonstration plots a full farmers participation is needed. we will see if the farmer is capable of producing all by himself.	a. Extensionist should supervise the farmer in the conduct of the trials	a. Farmers participation uplifts their commitment to the project.
- Field corn + peanut	seed materials are limited and some times not readily available					
- Upland trias of C ₂₂ rice variety						
- Soyben trials						
- Cassava trials coming from VISCA						
- Rice seed production						
II. Community Management:						
1. Organization of core group/farmer cooperator	1. Not all farmers in the community can be cooperators and the selection of the cooperator may give negative attitude to the project implementation to some farmers	1.Pre-organization planning with the community officials and the DA staff. After the selection of cooperators, they themselves elected their own officers.	1. All farmer cooperators with dialogue with DA staff, their participatory function were discussed.	1. Community organization is an integral part of community management.	1. Participatory functions of farmers should be well defined.	1. Don't make promises if you cant' fulfill them
2. Monthly meeting of core group/farmer cooperator.	2. In core group meeting farmers present their problems that need immediate attention and solution that DA staff or ROS can not attend to due to delayed fund release.	2. The delayed release of funds for field visits on reported problems by farmers like seeds, fertilizer and pesticides.	2. Coordination and field visits on reported actions planned.	2. Synthesis of monthly meeting by the core group and farmer cooperators be documented.	2. Synthesis of core group meeting be submitted to the DA and ROS staff for appropriate actions to be taken.	2. Their close coordination and participation in the monthly meeting is a strong evidence of commitment of farmers

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III. Community Management (cont.)

3. Training conducted at barangay level	3. There is always the lack of funds in the conduct of training at the barangay level.	3. Utilize regional DA resource persons in the conduct of training needs of farmers. Topics were: A. Cam. Sur: 1. Crop protection 2. Cropping patterns 3. Post harvest tech. 4. Community organization and leadership B. Albay: 1. Nursery production and management C. Sorsogon: 1. Community organization and leadership training 2. Integrated pest management (IPM) Regional Training: 1. SALT training	3. Pre-planning stage of the training needs discussed and organized by municipal DA staff, provincial coordinator and the regional staff	3. Regular conduct of seminars and training to be conducted with the farmer participating	3. Required the sub-mission of the training needs of farmers to prepare funds and required materials be prepared.	3. Conduct of training at the community is being considered by farmers honorable and important.
4. Farmers participation on Study tours seminars and conferences.	4. Study tours needs big amount to conduct one, so with seminars and conferences With large number of farmers participating.	4. In the conduct of SALT training and study tour to Davao City with farmer cooperators participating for 10 days.	4. Training planned and approved for funding by the central office. A pre-visit tour was first conducted to be sure of the safety and coherence.	4. Not only once of this kind be conducted but many more.	4. Through selection of participants especially farmers being away long from their farm and home	4. To see is to believe as a result of this study cause of some psychological problems farmers being away long from their farm and home

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II. Community Management (cont.)

5. Community organization of cooperatives

5. Most of the farmers still do not know the principle of cooperatives.

5. Planned in the conduct of training and seminar on Cooperatives.

5.1. Farmers cooperatives organized cooperative officials and preparing papers for registration

5.2. Cooperatives already functional:

1. Bonga, Ligao, Albay

2. Matnog, Sorsogon - Cooperatives ready for registration:

1. Palanog, Camalig Albay

2. Borochosoc, Buhi Cam. Sur

3. San Isidro, Iriga City

5. Coordination, dialogue between the farmers and the ROS staff.

5.1. ROS staff providing technical assistance to the establishment of a cooperative.

5.2. Cooperatives already functional:

5. The establishment of cooperatives should have been done at the very start of the ROS implementation as a community organization.

5. More information campaign on the principle of cooperatives and its advantages in having one.

5. United they stand they have more bargaining power they have on prices of produce.

6. Creation of Income generating projects

6. Lack of capital and raw materials needed to sustain their IGP

6. Farmers are now producing the needed raw materials for IGP in their community.

IGP existing in:

1. Peanut making and Chocolate making in Pandan, Ligao, Albay

6. A full community participation in IGP activities

6. ROS should provide some funds to the IGP with farmers and ROS on the progress of the IGP and the Bureau of cottage Industries.

6. Close coordination with farmers and ROS on the progress of the industrialization stage of agriculture.