

HORT/2007/066-2
Development of a cost-effective protected vegetable cropping system in the Philippines

**Focus Group Discussion with Farmers on
Protected Vegetable Cropping**

Working Paper No. 1



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Australian Government
Australian Centre for
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The Australian Centre for International Agricultural Research (ACIAR) project “Enhanced profitability of selected vegetable value chains in the Southern Philippines” is concerned with increased income, and improved livelihoods for vegetable growers in the Southern Philippines. One component of the project relates to protected cropping (HORT/2007/066-2). This component seeks to determine whether vegetables can be profitably grown under protected cropping (e.g., under plastic or netting) in the Southern Philippines and Australia. In the Philippines, the geographic focus is the island of Leyte, given the very difficult growing conditions that prevail there for certain times of the year.

ACKNOWLEDGMENT

The socio-economic component team wish to express their wholehearted appreciation to the contribution provided by VSU technical team headed by Dr. Othello B. Capuno, VSU Vice President for Research & Extension and Project Coordinator; Dr. Zenaida C. Gonzaga, Project Leader; Prof. Elizabeth D. Briones, Head, Department of Horticulture; Dr. Anabella Tulin, Head, Department of Agronomy and Soil Science; Dr. Antonio P. Abamo, Head, Department of Business Management & Dean, College of Engineering & Agri-Industries, including all the other the members of the technical team who provided inputs during the conduct of the focus group discussions and those who provided their comments and suggestions in consideration of the technical aspects of this report.

Introduction

Among the objectives of the ACIAR-VSU project is the development and testing of appropriate and effective protected annual vegetable crop production systems in Leyte and Australia. Activities designed to attain this objective are: 1) evaluation of the effectiveness of alternative structures in protecting vegetable crops from wind and rain in Leyte while providing a suitable growing environment; 2) evaluation of the feasibility of modifications to protective structures; 3) development of an appropriate irrigation system; 4) development and testing of an agronomic package for the Philippines; and 5) evaluation of techniques for pest and disease control under protected cropping structures.

Launched on July 18, 2008 at VSU, the project's first specific activity, aside from field visits of Australian CIAR project leaders and VSU project staff to potential adopters of the protected cropping structures, was the Focus Group Discussions (FGD) on August 8, 2008. The FGD aimed to gather information and insights on the existing vegetable cropping practices and problems of farmers in three prospective project sites-Cabintan, Ormoc City; Maasin City; and Bontoc, Southern Leyte. More importantly, the FGD were intended to ascertain the farmers' knowledge of and interest in adopting the protected cropping technology for vegetable growing. Results from the FGD are important inputs to the subsequent activities to be undertaken by the technical and socioeconomics teams, i.e., designing appropriate protective structures, experimental trials on vegetables to be grown under protected cropping, and pest and disease control.

Besides conducting several technical development trials at VSU, on-farm trials shall also be conducted at the farmers' field in the project sites. The most viable or cost-effective system will be promoted to other farmers for adoption.

Focus Group Discussion

During FGD, project research staff members listened to the discussion and probed the participants' responses.

I. The FGD Participants

A total of 13 participants attended the FGD (Appendix D).

3 - Cabintan, Ormoc City
3 - Maasin City
5 - Bontoc, So. Leyte
2 – agriculture staff (Bontoc and Ormoc City)

The participants from Cabintan, Ormoc City have 10-12 years of experience in vegetable growing while those from Bontoc and Maasin have 1-3 years of experience. The size of vegetable farms of the participants ranged from 0.45 ha to 3.0 ha while the average farm size is 1.4 ha.

II. Vegetables Produced During Dry Season, Sources of Seeds and Technical Assistance

The participants grow a variety of vegetables during the dry season (Table 1). The Cabintan participants have relatively larger farm sizes and longer experience in vegetable production and raised most of the vegetables reportedly planted in the two other sites.

As to preferred varieties, the top four vegetables preferred by Cabintan participants are Chinese cabbage, cabbage, lettuce, and green onions because Jollibee outlets in the cities of Ormoc, Tacloban, and Baybay need a supply of these vegetables every 15 days. Green onions, squash and corn are also important for crop rotation. The Maasin and Bontoc participants prefer ampalaya, beans, eggplant, cucumber, eggplant, okra, pepper, squash, and tomato because they are profitable.

Farmer-participants from Bontoc claimed they were provided with technical assistance by Technicians from the Department of Agriculture (DA). Those in

Maasin, stressed that they were informally provided with assistance while one farmer was assisted by a private technician (Harbest Agribusiness Corp.) and sought his own initiative for other needed technical information such as browsing the internet and visiting the PCARRD website. On the other hand, one farmer from Cabintan argued that his technical skills learned from his college days as well as the technical assistance provided by VSU (Dept. of Horticulture) were very useful (Table 1).

To ensure a steady supply of seeds for the whole year, Mr. Wendell Mausisa of Bontoc buys his seeds in bulk at the East-West Seed Company in San Rafael, Bulacan. He claimed that he can save more or less P15,000 for every P50,000 worth of purchased seeds if he buys in Manila rather than in Cebu or elsewhere.

Table1 Vegetables produced during dry season, sources of seeds and technical assistance.

Vegetables	Cabintan, Ormoc City		Bontoc, So. Leyte		Maasin City	
	Planted	Preferred	Planted	Preferred	Planted	Preferred
Ampalaya			X	X	X	X
Beans, snap	X				X	X
Beans, string			X	X	X	X
Cabbage	X	X				
Cabbage, Chinese	X	X				
Cauliflower	X					
Chayote	X	X				
Cucumber					X	X
Eggplant	X		X	X	X	X
Lettuce	X	X				
Okra					X	X
Onions, green	X	X				
Pechay	X					
Pepper, bell	X	X		X	X	X
Pepper, hot	X			X	X	X
Radish	X					
Squash	X	X	X	X	X	X
Tomato	X	X			X	X
Others: watermelon			X	X		
Sources of Seeds	Purchased at agricultural supply stores		Purchased at Pacifica Agrivet Agricultural Supply; East-West Seed Co.		Provided by Maasin City Agricultural Services Office (CASO) on loan basis	
Source of technical assistance	Visayas State University; Agriculture graduates of VSU		MAO; Harbest Agribusiness Corp.; PCARRD website; Agri magazine		Maasin CASO	

X – vegetable planted or preferred.

III. Soil-Related Problems and Use of Fertilizers

The participants from Maasin and Bontoc failed to identify any soil related problems in their farms because, according to them, these are yet to be analyzed. They used organic fertilizers such as chicken dung mixed with compost from abaca and rice straw. In addition, they applied complete fertilizer and urea. The rate of application for urea is 1.5 bags per 2,000 hills of plants.

Mr. Markines of Maasin stated that he mixed urea (2 bags), complete fertilizer (4 bags) and potassium (1 bag) for an area of 0.75 ha. On the other hand, Mr. Mausisa of Bontoc has tried using Indigenous Microorganism (IMO) on his vegetable farm.

Cabintan participants noted that their soil is acidic and phosphorous-deficient. They used a combination of organic and inorganic fertilizers. Chicken dung is commonly used at the rate of 30 bags per 20,000 hills of cabbage supplemented with 4 bags of complete fertilizer and 3 bags of urea.

Recognizing the need of the farmer-participants, Dr. A. Tulin encouraged the Maasin and Bontoc participants to bring soil samples to VSU for analysis so that the deficiencies and fertilizer requirements of their soils can be determined.

IV. Pests and Diseases of Grown Vegetables

Generally, the participants applied pesticides to control pests (Table 2). Mr. Morales of Cabintan said his group resorted to chemical control because Jollibee Ormoc City Branch, one of their regular outlets, is so meticulous about the physical appearance of lettuce delivered. They claimed that Jollibee refused to accept their lettuce delivery because earthworms were found at the inner leaves. Although the presence of earthworms is an indication that the vegetables were pesticide-free as

explained by the farmer, still the Jollibee Management refused to accept the product. The farmers had to find another buyer and because the vegetable had started to wilt, they were forced to sell it at a lower price. In view of this, the project staff considered educating the concerned, and similar other buyers, on organic agriculture particularly the benefits of consuming chemical-free vegetables as one of the future project activities.

Mr. Mausisa of Bontoc started to adopt organic farming. A technician of Harbest Agribusiness Corporation taught him other methods of controlling pests which he is presently adopting.

Table 2 Pests and diseases affecting vegetable production and their control

Place	Pests/Diseases	Control
Cabintan, Ormoc City	Leaf miner in green onions	Spraying plants with Cymbush insecticide
	Beetles & earthworms in cabbage and lettuce	Spraying plants with Cymbush insecticide
	Bacterial infestation of cabbage	Crop rotation
Bontoc, Southern Leyte	Beetles & fruitfly	Spraying plants with Decis insecticide
		Use of attractants for fruitfly; Spraying solution of fermented turmeric with ethyl alcohol to repel female fruitflies
	White fly	Spraying soap and hot pepper solution
Maasin City	Beetles and fruitfly	Spraying plants with Decis insecticide
		Smudging

V. Marketing of Vegetables

The Bontoc participants have no problem in marketing their produce because their two market outlets are the municipalities of Bato, Leyte and Sogod, Southern Leyte. There are several flea markets schedules in these municipalities during the week. In addition, farmers reportedly sold their produce easily since their vegetable

produce is still in small scale. Mr. Mausisa likewise added that he does not involve traders in disposing his vegetables. Instead, he usually engaged his relatives for a fee to sell vegetables during market days.

Likewise, farmer-representatives from Maasin City claimed there is no vegetable marketing problem since the City LGU through the City Agricultural Services Office (CASO) buys the farmers' harvests as part of the assistance provided under the Management Inputs for Agricultural Networking (MIAN) Program of the Southern Leyte Province. From the total sales, 25 percent is deducted as payment for the inputs provided by MIAN specifically seeds and fertilizers. As to the pricing of vegetables, CASO usually buys from farmers at two pesos lower than the prevailing market price per kilo. The participants revealed, however, that if CASO offered too low prices for the vegetables, they directly sell their vegetables to retailers in public markets rather than sell their produce through the MIAN.

In Cabintan, the prices of cabbage and other vegetables are volatile and highly dependent on the prices at the Ormoc City market which is in turn highly dependent to the prices in Cebu. The Cabintan participants stated that direct monitoring of Cebu prices is, therefore, necessary so that they may not be deceived by Ormoc retailers who quote lower prices claiming that these are based on Cebu prices. One common problem in marketing encountered by most farmers is retailers' preference. The buyers' marketing strategy is to look for characteristics of vegetables opposite to what is being delivered. For instance, when big heads of cabbage are delivered, they would refuse and say that the consumers prefer small ones. And when ripe pepper and tomatoes are available, they would look for green ones. In some cases, retailers do not accept delivery because they have already purchased vegetables from another supplier earlier and at lower prices. These are strategies employed by retailers so that farmers would be forced to lower the prices of their vegetables.

VI. Wet Season Vegetable Production and Risks Involved

All the farmer-participants planted vegetables only during the dry season. They considered the wet season a slack period. Farmers argued that they could not plant as heavy rains and strong winds can easily destroy their crops and it is too risky to engage in vegetable production during this period.

In Cabintan, Mr. Roble, however, mentioned that on some occasions some farmers gamble to plant cabbage only. He described the production scheme as like that of gambling since the probability of losing is very high with an opportunity for high gain in case the plants are not damaged by heavy rain and strong winds. Mr. Morales added that vegetables grown and harvested during this period command high prices in the market. However, he stressed that there is really a high risk and uncertainty whether or not they can harvest their crop. Mr. Ordiz of Maasin said he also tried planting snap beans during the wet season. He constructed canals around the farm to drain off excessive water but to no avail.

VII. Dry and Wet Season Farm-gate Price of Vegetables

When queried about the prices of vegetables, the participants provided the average farm-gate prices of vegetables during the dry season and wet season (Table 3). Apparently, vegetables command higher farm-gate prices during the wet season, not to mention the prices that reach the final consumers.

Table 3 Farm-gate prices of vegetables during the dry season and wet season.

Vegetable	Price (Php)/kg	
	Dry Season	Wet Season
Ampalaya	20	40
Beans, Snap	20	35
Beans, string	20	30
Cabbage	10	20-30
Cabbage, Chinese	10	25
Cauliflower	40	80
Chayote	5	15
Eggplant	5	25
Lettuce	40	80
Okra	20	25
Pechay	10	30
Pepper, bell	25	125
Pepper, hot	15	60
Radish	4	20
Squash	5-8	14-15
Tomatoes	8	25

VIII. Participants' Knowledge of and Experiences in Protected Cropping

Participants from Cabintan knew what protected cropping is while several participants from Bontoc and Maasin had no idea about it. According to Mr. Morales of Cabintan, protected cropping is a technology to protect the crops from strong rain and wind and insects. He said he has learned so much about this technology having attended several trainings in the past. However, he has not yet considered constructing protective structures because of the added production cost and he is not sure if he can still earn positive profit from the scheme. Based on experience, however, he only uses plastic mulching for vegetable production.

Mr. Markines of Maasin mentioned that he has been using mosquito nets to protect pechay from insects because it is for home consumption only. The mosquito nets were hung over wooden posts. The use of protected cropping is, therefore, limited to pest control and vegetables produced for home consumption.

Mr. Mausisa of Bontoc claimed that he has been using plastic mulch to protect his vegetable crops from weeds and insects, as well as to retain water and keep the soil cool. He learned this from the Farmers Field School (FFS). He bought the plastic material in Manila where more sizes are available at a much cheaper price.

Overall, the experiences of the participants on protected cropping were limited to protection of their vegetable crops from insect pests and weeds and for water retention during the dry season.

IX. Protective Structures Designs and Farmers' Feedback

Engr. MB Loreto presented slides of protective structures to participants. Feedbacks were sought from them if these structures will possibly work in their places and whether they are willing to construct them so that they could plant vegetables even during the wet season. All the participants seemingly signified their interest to adopt protective cropping structures that were shown in the slides.

The Cabintan farmers, however, noted that the problem is how to start because farmers will only adopt the technology if they are able to clearly observe that the scheme will surely provide them added profit. The Maasin and Bontoc participants found the technology interesting but the big constraint is the cost of construction materials. They expressed that they have no capital to acquire or construct the structures. They also argued that the design of the protective structures need to consider the local conditions in the area such as the availability of local materials including the occurrence of heavy rain and wind.

Structural Design

As regards the design of the protective structures, the participants suggested some changes to suit local conditions.

Mr. Morales of Cabintan:

- slanting barn-type roof
- one gutter
- need to study this roof type's effects on the aerodynamics or movement of air inside the structure and consequently on the growth of the vegetables
- solignum-treated coconut lumber and bamboo slats will be used instead of steel bars to minimize cost
- need additional support to withstand strong winds to make the structure stable and strong
- two doors with high opening for greater airflow
- sidings to be covered with fine net
- dimensions of 5m x 40m

Mr. Markines of Maasin:

- need for steel frames, not wooden, to withstand strong winds in his farm

Mr. Sumacot of Bontoc:

- low structure
- tunnel-type
- ordinary plastic for roof and fine net for sidings
- collapsible covers during the dry season

Vegetables Under Protected Cropping

Under protected cropping, the Cabintan participants prefer to plant lettuce in rotation with salad tomato or purple cabbage. The Bontoc and Maasin participants prefer to plant the same vegetable crops that they are presently growing.

Construction of the Protective Structure

All the participants especially those from Cabintan expressed their willingness to do the construction work themselves but with the supervision of project experts.

Dr. Capuno informed the group that during the first year of project implementation, the project shall shoulder the construction costs of two structures in

two separate project sites for on-farm technical development trials. Different structures shall be designed by Engr. Loreto taking into consideration the participants' suggestions. A variety of vegetables will be tried under these structures although the team of Dr. Gonzaga has initially planned to do trials on cabbage, tomato, and pepper under the structures at VSU. From these trials on structural design, vegetable crops, and agronomic and pest management practices, the best trial will be demonstrated at the farmers' fields and promoted for replication by other interested farmers in the three project sites and other towns. Dr. Capuno added that hopefully, the Maasin City LGU through its CASO will provide counterpart funds for Maasin vegetable growers who will be willing to adopt the technology.

After the FGD, the group visited the protective structures situated at the experimental field of the Department of Horticulture (DOH) at VSU.

APPENDIX A

Focus Group Discussion Proposal

Date: August 8, 2008 (Friday)
10:00 a.m– 2:00 p.m.

Venue: Department of Horticulture, VSU

Participants: 15 prospective farmer-cooperators & Dept. of Agriculture-08 Personnel

- Cabintan, Ormoc City
- Maasin City, So. Leyte
- Bontoc, So. Leyte
- Other areas in Ormoc City

Coordinator: Dr. Othello B. Capuno

Facilitator: Prof. Lilian B. Nuñez

Budget:

Items	Unit Cost, PhP	Total Cost, PhP
3 Meals for 15 persons*	450/pax	6,750.00
2 Snacks for 25 persons	30/person	750.00
Transportation allowance of 15 pax	1,000/pax	15,000.00
Accommodation of 15 pax, 1 night	150/pax	1,500.00
Supplies	2,000.00	2,000.00
Documentation & Report Preparation	3,000.00	3,000.00
Total		29,000.00

* Participants will stay longer at VSU to participate in the Farmers' Field Day.

Strategy of Implementation:

1. Identification and invitation of prospective farmer cooperators through DA contact persons:
 - Ormoc – Ms. Ma. Elena Mendoza
 - Maasin – Mr. Amado Acasio
 - Bontoc – Ms. Ruth Opina
2. Invitation of identified participants to the FGD
3. Meeting of Project Team to finalize FGD guide questions
4. Preparing the venue and materials
5. FGD Proper
6. Documentation and Report Preparation

APPENDIX B

FGD GUIDE QUESTIONS

1. What vegetables do you plant during the dry season? Which of these do you prefer to plant? What are your sources of vegetable seeds or planting materials? Do you avail of technical assistance?
*Unsa man nga mga utanon ang inyong gitanum panahon sa ting init?
Aduna ba kamoy mga pinili nga utanon? Unsay gikuhaan sa binhi o igtatum?
Adunay bay nagtabang sa inyo nga technician?*
2. Do you have soil-related problems in your vegetable farm? How do you address these problems?
Aduna ba kamoy problema kabahin sa klase sa yuta nga gitamnan og utanon? Unsa man inyong gibuhad para mamenosan kini nga problema?
3. Do you use fertilizers? What kinds of fertilizer do you use?
Naggamit ba kamo og abono? Organic _____
Inorganic? _____
4. What are the most common insect pests and diseases that you consider to be seriously affecting your vegetable crops? How do you control these? If you use pesticides, how often do you spray? Have you experienced having an increasing pest population when pesticides were used?
Unsa man nga mga mananap o dangan nga sagad grabe moatake sa inyong tanum? Giunsa ninyo pagsumpo niini? Kung naggamit kamo og medisina, kapila man kamo magbomba? Unsa may inyong namatikdan sa gidaghanon sa mga mananap sa dihang naggamit mog medisina?
5. How do you market your produce? What are the preferences of buyers of your produce?
Unsaon man ninyo pagbaligya ang inyong abot/utanon? Unsa may panginahanglan sa mga pumapalit sa inyong mga abot?
6. Do you plant vegetables during the wet season? If yes, what vegetables do you plant? If no, why not?
Nagtanom ba kamog utanon sa ting-ulan? Kung oo, unsa man ang mga utanon nga imong gitanum? Kung wala ka nagtanum, ngano man?
7. What do you undertake in order to plant during the wet season?
Aduna ba kamoy gihimo nga mga pamaagi aron kamo makatanum sa panahon sa ting-ulan? Unsa man kini?
8. What risks do you face in vegetable production during the wet season? How often do these risky events occur?
Unsa may inyong mga problema nga nasugatan sa inyong pananum panahon sa ting-ulan? Kapila man kini mahitabo kasagaran?

APPENDIX C PREPARATORY ACTIVITIES

Project Staff Meeting

Prof. Lilian B. Nuñez, the project team member tasked to conduct the FGD, prepared the capsule activity proposal and submitted it to Dr. Othello B. Capuno, Project Team Leader, on July 28, 2008 (Appendix A). Dr. Capuno met with Dr. Pedro T. Armenia, Co- Project Team Leader for Socioeconomics, Dr. Zenaida C. Gonzaga, Co- Project Team Leader for technical sciences, and Prof. Nuñez on August 1, 2008 to prepare final plans for the activity. The group finalized the budget for the conduct of the activity and decided to reduce it to a workable amount considering that project funds were not yet released. Dr. Capuno likewise informed the group that FGD expenses shall be, for the meantime, be temporarily borrowed from another source but this will be replenished as soon as the project fund is released.

Invitation of FGD Participants

During the Project Staff meeting during the Project launching at VSU, it was discussed by the project staff that at least 10 vegetable growers from the identified project sites (Ormoc City, Maasin City, and Bontoc, So. Leyte) shall be invited as FGD participants. Dr. Armenia prepared letters of invitation addressed to the city/municipal agriculturists or agriculture staff of the three sites and had them faxed to their offices (Appendix B). Prof. Nuñez also made several follow-ups on the contact persons through text messages and all of them answered positively.

Finalization of FGD Guide Questions

The preliminary set of questions prepared by Dr. Ken Menz on his visit to VSU in July 2008 was adopted since it contained most of the questions needed for the FGD.

Members of the technical project team also contributed additional guide questions relevant to their fields. After the guide questions were finalized, these were translated into the Cebuano dialect (Appendix C).

OPENING PROGRAM

To welcome the FGD participants and orient them on the project and its staff, an opening program was held before the FGD proper. Dr. AB Tulin opened the program with a prayer followed by the welcome words of Dr. PT Armenia. After the participants and project staff members were introduced, Dr. OB Capuno welcomed the participants not only to the FGD but to the VSU anniversary celebration as well. His message focused on the overarching goal of the project which is poverty alleviation for vegetable farmers as they may be able to produce vegetables even in the rainy season during which vegetables are sold at high prices in the market. Consequently, vegetable farmers will earn more income and improve their living conditions.

Dr. ZC Gonzaga presented the overview of the project "*Development of a Cost-Effective Protected Vegetable Cropping System.*" The program ended with closing remarks from Dr. AP Abamo.

APPENDIX D ATTENDANCE SHEET

FOCUS GROUP DISCUSSION ON PROTECTED VEGETABLE CROPPING SYSTEM

August 8, 2008 (Friday)

ODREX, Visayas State University, Visca, Baybay City, Leyte

Name	Address	Size of Vegetable Farm (hectare)	No. of Years in Vegetable Production	Cell/Contact Number
1 Raymundo Ordiz	Bogo, Maasin, So. Leyte	0.75	2	
2 Marita Markines	Hantag, Maasin, So. Leyte	0.45	3	09275209469
3 Constancio Markines	Hantag, Maasin, So. Leyte	0.45	3	09158535496
4 Wendell Mausisa	Mahayahay, Bontoc, So. Leyte	3.00	3	09155156779
5 Numeriano Meosia	Mahayahay, Bontoc, So. Leyte	2.00	2	
6 Marieta Encinas	Paku, Bontoc, So. Leyte		2	
7 Pureza D. Soledad	Paku, Bontoc, So. Leyte	0.50	1	
8 Rebecca P. Adobas	Bontoc, So. Leyte			09053142906
9 Noel Morales	Cabintan, Ormoc City	3.00	10	09183957862
10 Ramil Morales	Cabintan, Ormoc City	1.00	10	09217243042
11 Victoriano Roble	Cabintan, Ormoc City	0.50	12	09103827560
12 Ed Roy H. Sumacot	Bontoc, So. Leyte	(DA staff)		09067459251
13 Ma. Elena A. Mendoza	CASO, Ormoc City	(DA staff)		09266840369

APPENDIX E

Photo Documentation



Dr. AB Tulin introduces the FGD participants & project staff.



Dr. OB Capuno gives a message to the participants.



FGD Proper



At the experimental site



At the experimental site



Dr. Capuno discusses the project with the participants.



A pose after the experimental field visit.

OTHER PHOTOS: SOUTHERN LEYTE TRIP, July 21, 2008



A discussion with Maasin City Agriculturist, Mr. Amado Acasio



An interview with a vegetable farmer in Maasin



An interview with a progressive vegetable farmer in Bontoc (left most)



Dr. Ken Menz and Dr. Gordon Rogers feel refreshed after drinking buko juice.



Dr. Rogers and Dr. Menz each carry a bunch of ripe bananas given by a progressive farmer in Bontoc, So. Leyte.