

## **BIBLIOGRAPHY**

PADSOYAN, AGAPITO S. APRIL 2009. Comparative Study of Cabbage Farming Practices in Amgaleyguey, Buguias. Benguet State University, La Trinidad, Benguet.

Adviser: David Joseph L. Bognadon, MS.

## **ABSTRACT**

This study was conducted to find out the changes of cabbage farming practices of farmers in Amgaleyguey, Buguias, Benguet in 1990 and 2008, It was conducted from December 2008 to February 2009 with 40 respondents.

The finding shows that the number of farmers increased in 2008 compared with the number of farmers in 1990. Moreover, the respondents expanded the area that they are planting. However, the respondents used the same farm implements and fertilizers.

In 1990, the Rare Ball and Scorpio were the only cabbage varieties planted by the respondents. However, through seminars, a new variety, the Lucky Ball was introduced by Agricultural technicians and was planted by the respondents. Almost half of the respondents used manual irrigation in 1990. But in 2008, all of them used rain bird as their way of irrigation. All the farmers shifted to chemicals from organic control agent as their means of pest and disease management practice. Also in 1990, most of the respondents used knapsack sprayer though most of them are shifting to power sprayer in 2008. Lastly, the number of farmers who used their own trucks for transporting their product into the market increased in 2008.

# TABLE OF CONTENT

	Page
Bibliography.....	i
Abstract .....	i
Table of Content.....	iii
<b>INTRODUCTION</b> .....	<b>1</b>
Rationale .....	1
Statement of the problem .....	3
Objective of Study .....	3
Importance of the Study .....	3
Delimitation of the Study .....	4
<b>REVIEW OF LITERATURE</b> .....	<b>5</b>
Farmers and Farming Practice .....	5
Crops Planted and Variety .....	7
Cabbage Cultivation Practices .....	7
Production .....	9
Planting .....	10
Handling.....	11
Post Harvest Handling .....	11
Farming Technology .....	12
<b>METHODOLOGY</b> .....	<b>14</b>
Place and Time of the Study .....	14

Research Instrument .....	14
Respondents of the Study .....	14
Data to be Gathered .....	15
<b>RESULTS AND DISCUSSION .....</b>	<b>16</b>
General Information about the Respondent .....	16
Cabbage area Planted .....	18
Farm implements used .....	19
Fertilization Practices .....	20
Crops Planted and Variety .....	20
Farms Practice Applied .....	21
Crop Production .....	22
Irrigation Practices .....	23
Farm Equipments .....	23
Transportation facilities used .....	24
<b>SUMMARY, CONCLUSION AND RECOMMENDATION .....</b>	<b>26</b>
Summary .....	26
Conclusion .....	27
Recommendation .....	29
<b>LITERATURE CITED.....</b>	<b>30</b>
<b>APPENDIX.....</b>	<b>33</b>
A. Survey Questionnaire.....	33

## INTRODUCTION

### Background of the Study

Buguias is the number one producer of vegetable in Benguet (PDCO, 1993). It is one of the cold places in Benguet and it is where vegetable vigorously grow. Vegetable gardening is the main source of income and livelihood among local farmers.

Vegetables grown and consumed before are considered safe since they are grown organically. Artificial growers, insecticides, pesticides, fungicides and the likes are not used. Packaging and transportation of the farm products are simple and did not require chemicals.

However, due to the advancement of technology, market systems, and consumers demand, producers has to spray chemicals to preserve the products. Spraying of chemicals is very advantageous to prevent insect and pest diseases, promote growth of plants, to prolong shelf life when transplanting products. The physical appearance of the vegetables is the main consideration of the buyers in the market, thus, producer has to maintain this through the use of chemicals. On the other hand, chemicals have also disadvantages. One for example is that Chemicals on the vegetables are ingested by the human population which means ingesting radicals that would cause a certain disease or several diseases.

Through the years, various technologies had been introduced to Buguias farmers but it was visibly rampant that most farmers still practice their traditional way of farming. The farmers continued on planting vegetable and expanded production areas by destroying the remaining forest reserve. They produce the same crops at one cropping period which lead to the fluctuation of prices. Vegetable production continues to be



popular way due to the favorable climatic condition, topography and soil condition in the area. To date, Buguias remains to be the number one of producer of vegetable in Benguet.

At present vegetable industry in the Cordillera , particularly in Benguet is in slump because of various production problems met, such us high cost of production inputs, poor quality, unstable prices, pest and diseases, lack of financing institutions and lack of local buyers in the production area where the farmers have no basis of pricing their product. But vegetable farmers continue to exert effort to maximize their production.

The study focused on the changes in cabbage farming practices of Amgaleyguey, one of the Barangay in the Municipality of Buguias. The Barangay has an estimated area of 2,978 hectares, about 13.47% of the municipalities total land area. The total area planted with crops is 1,054.2 hectare (BNRMP, 2006). Enterprising Chinese introduced highland vegetable farming at a large scale at Sinipsip after the Second World War. Eventually, the technology was copied by the neighboring folks and now the leading industry of the Barangay (BNRMP, 2002).

We all know that our country had been influenced by many countries and thus many changes had occurred in the farming practices. With this, the researcher conducted the study to understand and compare the cabbage farming practices of 1990 and 2008.



### Statement of the Problem

The study focused on the changes in cabbage farming practices of Amgaleyguey, the researcher specifically aim to answer the following questions: a) What are the profiles of the farmers?, b) What are the changes of cabbage farming practices in 1990 and 2008?, c) What are the recommendations that can improve farming practices?

### Objective of the Study

The main purpose of the study is to find out the cabbage farming practices of farmers in Amgaleyguey, Buguias, Benguet. Specifically, to: a) Determine the profile of the farmers, b) to compare the cabbage farming practices in 1990 and 2008, c) to come up with recommendation/suggestion to address problem encountered.

### Importance of the Study

Vegetable farming is the major source of income in Amgaleyguey, Buguias, Benguet.

The finding of this study would benefit the farmers of barangay Amgaleyguey and farmers from other places through the recommendations the researcher may impart. This study would enhance the knowledge and practices of the respondent in vegetable farming. Furthermore, the recommendations in the study would propose solutions or alternatives for more productive and successful farming.

This study would determine better ways in cabbage farming practices which can be adapted by other farmers.



This study would provide a record or document of the cabbage farming practices for the barangay which will serve as a reference to future researches with related studies or as a research subject for further studies.

### Scope and Delimitation

This study focuses on the comparison of the changes in cabbage production in Amgaleyguey, Buguias, Benguet in the year 1990 and 2008.

The study gathered information from 40 respondents of the barangay. Likewise, a comparison of cabbage farming activity covers the cycle of farming from land preparation to harvesting.



## **REVIEW OF LITERATURE**

### Farmers and Farming Practice

Benguet, one of the major suppliers of vegetables has farming as the main sources of income to the people. Farmers are those who cultivate lands and take care of farm animals like chickens, pigs and cattle's for the purposes of producing agricultural goods in order to earn income for living. However, these farmers often claim that they are not getting much from their production. This could be attributed to different factors such as belief, custom, and traditional practices of farmers, their educational attainment, their experience and knowledge on modern practices in Farming and their farm size. All these factors affect the level of production, and income, which would in turn affect the socio-economic status of a farmer (Dodoy, 2004).

Small farmers in the Philippines are usually poor but resourceful. They know how to improvise things. Despite this depressing picture, small farmers manage to survive. In their struggle for survival in the changing society, they developed a system of organizing farm activities (Department of Agriculture, 1990).

Paing (2001) declared that majority of farmers consider themselves not productive and vary in terms of socio-economic condition. They are dissatisfied with the farming business but they continue to farm because they find no alternative means of livelihood.

Technology helps them in farming. There are insecticides for the pest which are the number one problem in gardening, grab hoe instead of carabaos to toil the soil, rain bird to water the plants instead of manual watering of the plants. But it also has disadvantages, example is that insecticides brought new pest and destroyed the fertility of the soil. According to Victor Compelio, a farmer in Amgaleyguey, Buguias, Benguet, he





prefers the traditional way of gardening because of these side effects. Though nowadays, all crops are dependent on chemicals, pesticides and fungicides because of the occurrence of pests and diseases. Frequency of chemical fungicide and pesticides application is a maximum of 5-14 days per hectare depending on the months or the maturity of the plants (BNRMP 2002).

Two farming methods being applied in Amgaleyguey are manual and mechanized but manual is mostly used due to the terraces or terrain of the area, rocky farm and small farm size and machineries are not affordable to the farmers. Manual labor is used during land preparation, planting and transplanting, crop care and maintenance, harvesting, hauling and storage. On the other hand, mechanical labor is also used during plowing and hauling (BNRMP, 2002).

Household members provide farm labor. The “bayanihan” system persists in the area where land preparation, planting and harvesting, where in activities are done through cooperative efforts of the farmers. However, some farmers hire additional labor during land preparation and harvesting activities.

Both organic and inorganic fertilizer is being applied to all crops due to deterioration of soil fertility or the nutrient content. Organic fertilizer includes chicken manure while inorganic fertilizers include urea, triple 14, philpose and nitrogen phosphorus 16-20-0. Beans, garden pea, and onions have the lowest amount of fertilizer applied.

Low level farm technology is generally applied in the area; hence, crop yields are very low. On the average, 10-15 bags per hectare of inorganic fertilizer are applied to leafy vegetable and, five bags are applied to legumes while 150-200 bags of organic



fertilizer are applied to leafy vegetables and 50 bags are applied to legumes. All crops are fertilized once using basal, side dressing and top dressing methods (BNRMP, 2002).

There are three equipments used in the Barangay: work animals, farm machinery and vehicle. Work animals include cow and carabao. Farm machineries used are water pump and power sprayer. Vehicles utilized are jeep and truck.

### Cabbage Cultivation Practices

Cabbage is usually planted after potato, carrots, and garden peas, especially in the Benguet and mountain province areas. All farmers in these areas practice multiple cropping (Francisco, 1990).

Diamondback moth is the most destructive insect pest on cabbage crops. Apart from excessive insecticides and fungicide use, several indigenous crops protection technologies are practiced, such as the use of tobacco leaves, waka and crude oil. Weeds are generally controlled manually.

Cabbage is harvested when heads are firm and compact. The methods of harvesting cabbage are one time (one-over) and the more popular selective harvesting two to four times per crop (Francisco 1990).

According to Alunes, a farmer of Amgaleyguey, Buguias, Benguet (1990), a Barangay Kagawad of Amgaleyguey, the poor conditions of rural roads resulted in high transport charge by owners of vehicles and also discourages farmers to seek for the best market outlet. It takes four to six hours, for the farmers to bring their product to their destination and this would result to high cost of transportation. Consequently many farmers sold their products at low price to buyers who come to their farm. The farmers



cannot argue with price because they are thinking of the expenses when they transport their goods to the market.

### Vegetable Production Practices

VEGETABLE	GROWING SEASON	TOPOGRAPHY	VARIETY
Bush snap beans	November to January	Highlands	Improved tender green cherokee way.
Cabbage	Year round, but best season is the cool month of September to February.	Highlands	Scorpio, rare ball globe, ring, green express, Marion market and Copenhagen.
Celery	Year round	Upland	Na
Chinese cabbage	Year round	All elevation but best in Highlands.	Reyna Elena, F1 Tropicana.
Cucumber	Cut In October To December and harvesting in May to July is best.	Highlands and Lowlands with irrigation facilities	UPLCu1, UPCu2, explorer (picking variety).

Source: PCARRD, 2000

Nowadays, According to Walsie (2008), A barangay council of Amgaleyguey, the market road was developed and better for the farmers to transport their goods, it takes only two to three hours to transport their goods to the market. This way, the farmers lessen their expenses and they can also market fresh goods. They even have a centralized market which is Trading Post. Therefore, the middlemen follow the market price list.

Prices of commodities are much expensive now than before and the price of vegetables are not based on how good your product is (though a little), but depends on the price in the market and the demand from the consumer. He added that imports from other countries added to their competitors, but still he is thankful to farming because he was able to send his children to school and support his family with their needs.



## Production

Vegetable production is one of the agricultural industries in the country today. Buguias is one of the major vegetable producers in the country. Vegetable production is the major source of income of the people of Buguias (Claudio, 2004).

Vegetable production is very competitive. The implementation of the General Agreement on Tariff and Trades (GATT-WTO) open the doors for import and export arrangement. In the Philippines, the production of semi-temperate vegetables such as cabbage, potato, lettuce, carrot and others is not anymore a sole trademark of Baguio and the Cordillera (Minde News, 2004).

In the year 2002, the total area planted with crops in Amgaleyguey is 1, 054.2 hectares. White potato and cabbage has the highest area planted with a total of 930 hectares so it has the highest production with a total of 47, 435, 000 kilograms a year. This crop is produced whole year round because it is the suitable crop in the area and it has a favorable climate. Corn, green onions, and pechay has the lowest area planted with .25 hectares each and corn has the lowest production with 12,500 kilograms per year because in the most areas, intercropping of corn is common with major crops like potatoes, cabbage, Chinese cabbage and beans. Crop rotation is also practiced to improve condition of the soil (BNRMP, 2002).

Farmers plant from 2-3 cropping a year. The frequency of planting depends on water, labor availability and cropping strategy. Weather condition dictates the timing and type of crops to be planted at a given cropping season. Rainy season that usually occur from June to October are regarded to be suitable to leafy vegetables while, during dry season, which commence from November to May, is best for root crops. But with



climatic change being experienced these days coupled with fluctuating prices of farm products, the farmers tend to experiment off-season planting depending on the availability of planting stocks (BNRMP, 2002).

### Planting

Planting processes in the Benguet province is so different from foreign farming, like Japan. Thus, Benguet farmers use the old method of planting such that they use no machinery for cleaning and softening the land to be planted unlike foreign farmers, wherein they use the latest technology for farming.

### Harvesting

All leafy vegetables are cut by hand; but harvesting aids may be used with some. Mechanical harvesting systems have been developed for crisp head lettuce, celery, cabbage, Brussels sprouts, and cauliflower. The determination of horticultural maturity varies with commodity, but in general, size is the principal criterion. For others, the solidity of the head determines harvest maturity.

Stem vegetables are also hand harvested. A limited amount of asparagus has been experimentally machine harvested. Asparagus is generally hand cut when spears are at least 23 cm (9 inches) above the soil surface. All floral vegetables are hand harvested, but harvest aids (conveyors) are sometimes used for broccoli. Maturity of floral vegetables is determined by head size and development.



## Handling

Microsoft Encarta (2007) defines handling as the series of steps and processes that the vegetable undergoes from harvesting until it is consumed fresh or transform into process product.

Faylon (1981) stressed the problem generally and commonly perceived by both producers and traders is low price. This result from other supply and low quality of the commodities due to inappropriate handling. Bringing products from farm to market is considered risky to farmers due to spoilage and transport losses, which can occur along the ways from harvesting area.

Dinal-ong (2003) stated that due to poor transportation facilities, lack of grading, and poor handling may cause high wastage resulting to poor quality of farm produce. The consequence of this will lead to low farm price for the farmers but usually high price for the consumer.

## Post Harvest Handling

In vegetable farming, it is the prevailing practice where in vegetables are removed from direct sunlight and transported to the packing shed as soon as possible. Cabbage and leafy greens are particularly susceptible to wilting and other damage from high temperatures. When there is a delay of more than an hour or two between harvest and packing, a water drench or spray arrangement can help prevent dehydration and overheating.



### Farming Technology

Perlas (1998) as cited by Lacambra (1997) stated that the adoption of new technologies can be a major instrument for achieving economics development in the agricultural sector.

Farm machineries can significantly make farming efficient and probably more economical. With machines, more timely land preparation could be achieved. Major farm chore could be less backbreaking. Unfortunately, farm mechanization does not seem to be popular as they should (Sarian, 2006).

Vesper (1982) stated that lack of technical skill can be a major problem. De Vries (1985) also stated that once the industry gets going, certain number of farmers fail because they lack of general information.

Tramline technology in farming is an alternative means of hauling farmers' produce using cables and pulleys to transport products from inaccessible farms to the nearest road network. According to Roberto Alcudia the tramline system in his town has been helping much in bringing farm products to the market in a faster way, especially during times when public jeepneys cannot easily reach the far flung mountainous Barangays.

BPRE, which is lead agency for promotion and implementation of the technology, said that agricultural tramlines are most ideal in mountainous areas, where access by road is not possible.

Tramlines are primarily designed “to eliminate the drudgery of manual hauling” and to reduce transport costs that would increase farmers' productivity and income.



Upland farmers said that about 30 to 40 percent of the market value of their products went to hauling alone.

The DA and the BPRE have so far introduced the tramline system to four towns in the country. These are Buguias and Atok Benguet (Bureau of Post Harvest Research and Extension, 1994).





## **METHODOLOGY**

### Locale and Time of the Study

This study was conducted in Amgaleyguey, Buguias, Benguet. Amgaleyguey is one of the 14 barangays of Buguias, located at the western part of the municipality. It is the second barangay found coming from Baguio with a distance of 70 kilometers away. Amgaleyguey is traversed through the Halsema Road and accessible to all types of public utility vehicles plying the National Highway routes.

The barangay has an estimated area of 2,978 hectares, about 13.247% of the municipality's total land area making it the largest barangay of Buguias in terms of land area.

The barangay shares its boundaries with barangay Poblacion and Amlimay on the west, Gambang, Bakun on the east, barangay Lengaoan on the north and Natubleng on the south.

This study was conducted from December 2008 to February 2009.

### Research Instrument

Interview schedule was done. Using structured questionnaires, the vegetable producers (respondents) were individually interviewed to assess cabbage farming practices in the said place.

### Respondents of the Study

The respondent of the study is forty (40) vegetable producers in Amgaleyguey, Buguias, Benguet, and At least twenty years in farming. Forty respondents were selected randomly from vegetable producers, from 39 years old to 75 years old.



### Data Gathered

The data gathered are the following: Profile of the farmers, Changes in cabbage farming practices in 1990 and 2008, and Recommendation/Suggestions to address problem encountered.



## RESULTS AND DISCUSSION

### General Information about the Profile of the Respondents

Table 1 shows the personal attributes of the respondents such as age, civil status, sex, educational attainment and years in farming.

Age. The youngest respondent is 39 years old while the oldest is seventy five years old. Most respondent 42.5% had age ranging from 41 to 50 years old followed by 37.5% whos age range from 51 to 60 years old. 10% of the respondent ages from 61 to 70 years old, 7.5% ages ranging from 30 to 40 and 2.5% of respondent ages from 71 years old and above.

Sex. Majority or 72.5% of the respondent are males and only 27.5% are females.

Civil status. As regards to the civil status of the respondents, majority (77.5%) of them are married, 15% are single and 7.5 % are widow and widower.

Educational attainment. Results revealed that 47% of them are elementary graduates; 40% are high school graduates; and 12.5 % are college graduates.

Number of years in farming. Among the 40 respondents, most of them (82.5%) had been into farming for 20 to 30 years, 7.5% engaged for 31 to 40 years and 7.5% engaged for 41 to 50 years.

### Cabbage Farming Practices

Cabbage has the widest area planted in barangay Amgaleyguey with a total area of 930 hectares so it has the highest production of 47,435,000 kilograms a year. This crop is produced whole year round because it is suitable crops in the area and has a favorable climate (BNRMP 2006).



Table 1. Socio-demographic profile of the respondent

PARTICULAR	FREQUENCY	PERCENTAGE
<b>Age (Year)</b>		
30-40	3	7.5
41-50	17	42.5
51-60	15	37.5
61-70	4	10
71 and above	1	2.5
<b>TOTAL</b>	<b>40</b>	<b>100</b>
<b>Sex</b>		
Male	29	72.5
Female	11	27.5
<b>TOTAL</b>	<b>40</b>	<b>100</b>
<b>Civil Status</b>		
Married	31	77.5
Single	6	15
Widower	3	7.5
<b>TOTAL</b>	<b>40</b>	<b>100</b>
<b>Educational Attainment</b>		
Elementary	19	47.5
High School	16	40
College	5	12.5
<b>TOTAL</b>	<b>40</b>	<b>100</b>



Table 1. Continued...

PARTICULAR	FREQUENCY	PERCENTAGE
Number of Years in Farming		
20-30	33	82.5
31-40	4	10
41-50	3	7.5
51-60	0	0
TOTAL	40	100

Table 2 shows that in 1990, majority (60%) of the respondents planted  $\frac{1}{4}$  to  $\frac{1}{2}$  hectare, while 32.5% planted  $\frac{3}{4}$  to 1 hectare and 7.5% planted 1  $\frac{1}{2}$  hectare and more. In 2008, 42.5% planted  $\frac{1}{2}$  to  $\frac{1}{4}$  hectare, 35% for  $\frac{3}{4}$  to 1 hectare and 22.5% for 1  $\frac{1}{2}$  hectare and above.

The respondents who planted 1  $\frac{1}{2}$  hectare and above increased to 15%, those with  $\frac{3}{4}$  to 1 hectare increased to 2.5%, while those with  $\frac{1}{4}$  to  $\frac{1}{2}$  hectare decreased to 17.5%. Through these facts, it is noticeable that the farmers are expanding their lands. In an interview, one of the respondents mentioned that the reason for this expansion is to increase production for additional income.

Table 2. Distribution of the respondent according to area planted

AREA	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
$\frac{1}{4}$ - $\frac{1}{2}$ Hectare	24	17	60	42.5
$\frac{3}{4}$ - 1 hectare	13	14	32.5	35



Table 2. Continued...

AREA	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
1 ½ and above	3	9	7.5	22.5
TOTAL	40	40	100	100

### Farm Implements used

Table 3 shows that 100 percent of the respondent used the same tools in 1990 and 2008. The results showed that there were no changes because the farmers cannot use the latest technology like tractors because of the nature of the farms in Amgaleyguey, Buguias, Benguet. These farms are usually terraces or terrain and small farm size.

### Fertilization practices

Table 4 shows that all the respondents (100%) used the same fertilizer in 1990 and 2008. According to the respondents, they are familiar with these fertilizers and they know the effects thus they do not change what they are using.

Table 3. Distribution of the respondent according to farm implements

FARM IMPLEMENTS	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Grab hoe	40	40	100	100
Spade	40	40	100	100
Bolo	40	40	100	100

\*Multiple Responses



Table 4. Distribution of the respondent according to fertilizer used

FERTILIZER	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Chicken manure	40	40	100	100
14-14-14	40	40	100	100
Urea	40	40	100	100
16-20-0	40	40	100	100

\*multiple Responses

#### Crops Planted and Variety

Table 5 presents the percentage of variety of crops planted by the respondents. In 1990, 60% planted rell ball and 40% planted Scorpio. In 2008, 47.5% planted Scorpio; 30% chose lucky ball and 22.5% for rell ball.

The respondents who planted rell ball decreased to 37.5 %, those with Scorpio increased to 7.5 %, and lucky ball, the additional variety which was introduced in 2000 is chose by 30% of the respondents. According to the respondents, they are choosing Scorpio because it has higher price in the market and lucky ball, though it is more expensive, because it is sellable in the market.



Table 5. Distribution of respondent to crops planted and variety

VARIETY	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Rell ball	16	9	40	22.5
Scorpio	24	19	60	47.5
Lucky ball	0	12	0	30
TOTAL	40	40	100	100

### Farm Practices Applied

Table 6 shows that (100%) of the respondents used manual in planting and transplanting their plants in 1990 and 2008. None used mechanized in planting or transplanting.

Table 6. Distribution of the respondent according to farm practices employed

FARM PRACTICED	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Manual	40	40	100	100
Mechanized	0	0	0	0
TOTAL	40	40	100	100

### Crop Production Practices

The result in table 7 shows that in 1990, 55% of the respondents applied chemicals in their crops and 45% of the respondents applied organic. In 2008, all the





Table 7. Distribution of the respondent according to pest and disease management Practices

PARTICULAR	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Chemical Applied	22	40	55	100
Organic control agent	18	0	45	0
TOTAL	40	40	100	100

farmers (100%) applied chemicals in their plants because of the occurrence of pest and diseases being encountered by the farmers.

#### Irrigation Practices

Table 8 shows that in 1990, 42.5 % use manual irrigation practice while 57.5% use rain burse. In 2008, 100% of the respondent use rain burse due to expanding farm lands wherein it is easy and faster to use than using manual irrigation. They are also depending to natural rain fed since 1990 to present.

Table 8. Distribution of the respondent according to irrigation practices

PRACTICE	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Manual	17	0	42.5	0
Rain burse	23	40	57.5	100
TOTAL	40	40	100	100



Table 9. Distribution of the respondent according to farm equipments

PARTICULAR	FREQUENC Y		PERCENTAGE	
	1990	2008	1990	2008
Water pumps	0	8	0	20
Knapsack sprayer	35	19	87.5	47.5
Power sprayer	5	13	12.5	32.5
TOTAL	40	40	100	100

### Farm Equipments

Table 9 shows that in 1990, 87.5% of the respondents use knapsack sprayer and 12.5% use power sprayer. In 2008, 47.5% use knapsack sprayer, 32.5% use power sprayer and 20% use water pumps.

The respondents who use knapsack sprayer decreased to 40% and those who use power sprayer increased to 20%. Those who used water pump jumped to 20% due to the expansion of the terraces wherein water are from the base of the mountain, water pump makes it easy for them to irrigate their farms. According to the respondents, they prefer the power sprayer than the knapsack sprayer though they have they same function because it is easy and covers a wide area in a short span of time.

### Transportation Facilities used

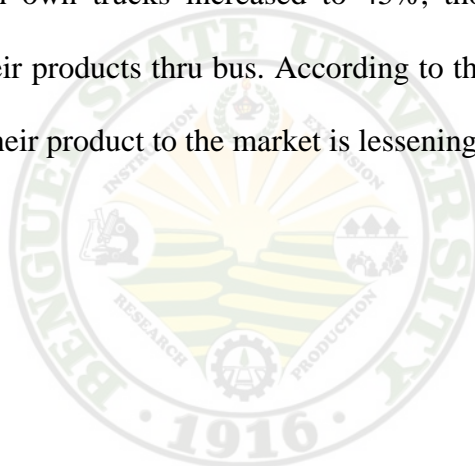
Table 10 shows that in 1990, 67.5% of the respondent hires a truck to transport their products into the market; 20% have their own truck; and 12.5 % send their product thru Bus. In 2008, 65 % of the respondent has their own truck to transport their product into the market; 35 % still hire a truck to transport their product.



Table 10. Distribution of the respondent according to transportation facilities used

PRACTICE	FREQUENCY		PERCENTAGE	
	1990	2008	1990	2008
Hired	27	14	67.5	35
Own trucked	8	26	20	65
Send thru bus	5	0	12.5	0
TOTAL	40	40	100	100

The farmers with own trucks increased to 45%, those who hire decreased to 32.5% and none send their products thru bus. According to the respondents, having their own trucks to transport their product to the market is lessening their expenses.



## **SUMMARY, CONCLUSION AND RECOMMENDATION**

### Summary

This study was conducted to compare the cabbage farming practices in Amgaleyguey, Buguias, Benguet in 1990 and 2008. This study was conducted last December 2008 to February 2009 with 40 farmers as respondents. The data were gathered with the use of a survey questionnaire and interview.

The result showed that majority of the respondent ages from 41 to 50 years old. Most of them are males, married, elementary graduates, and majority of them had been farming for 20 to 30 years.

As presented in Table 2, the farmers planting  $\frac{1}{4}$  to  $\frac{1}{2}$  hectares decreased to 17.5% while those planting  $\frac{3}{4}$  to 1 hectare and 1  $\frac{1}{2}$  and above increased by 2.5% and 15% respectively.

The results also showed that there were no changes in the tools and fertilizers used in cabbage production in 1990 and 2008.

In 1990, there were only two variety of cabbage being planted which are the Rell Ball and Scorpio. While in 2008, Lucky Ball was added but Scorpio was the mostly being planted because it has high price in the market.

The result also showed that there were no changes in farm practices applied in 1990 and 2008. They still used manual due to the terraces of the area.

In terms of crops production practice, 55% used chemical in 1990 and 45% used organic while in 2008, all the farmers (100%) shifted to chemicals because of the occurrence of new pests and diseases of their crops.



In 1990, 42.5% of the respondents used manual in irrigation and 57.5% only used rain bird while in 2008, all of the farmers used rain burse as means of irrigating their crops. They are also still depending on natural rain fed for additional irrigation.

In 1990, 87.5 % used knapsack sprayer but it decreased to 47.5 % in 2008. 12.5 % used power sprayer and it increased to 32.5 % in 2008. In 2008, there were 20% who used water pumps.

In 1990, 67.5 percent of the respondent hires a truck to transport their products into the market; 20 percent have their own truck; and 12.5 percent send their product thru Bus. While in 2008, 65 percent of the respondent has their own truck to transport their product into the market; 35 percent still hire a truck to transport their product.

### Conclusion

Based on the result of the study, the lands being planted by the farmers are getting larger because they want to expand their production because there is an increase in the demand of the customers and they want additional income to sustain the need of the family. One of the reasons also is that transportation is easier and faster because of the constructions of the farm to market roads. Moreover, Cabbage has the widest area planted in barangay Amgaleyguey because of the favorable climate in the area.

With regards to the farm implements, the farmers used the same tools such as grab hoe, spade, and bolo. They cannot use the latest technology like tractors because of the nature of the farms wherein it is usually terraces in the mountain. Moreover, the farmers can't afford these machineries.



Both organic and inorganic fertilizers are being applied due to the familiarity with these brands wherein the farmers know the effect. They are using both to minimize the deterioration of soil fertility or the nutrient content.

Most of the farmers chose the variety of Scorpio because it has the higher prices in the market. Others are more into lucky ball, though the seeds are more expensive, because it is sellable in the market.

Within the two farming methods applied in Amgaleyguey, manual and mechanized, manual is mostly used because of the terraces or terrain of the area, rocky farm and small farm size. This is also because machineries are not affordable by the farmers.

With regards to pest and disease management practices, all the farmers shifted to chemicals. This is because of new pest and diseases of cabbage such as downy, powdery mildew and bacterial wilt.

In irrigation, the farmers use rain burse rather than manual irrigation because it is easier and faster to use. They could save time and energy in irrigating their lands. Thus, giving them time to do other farm works such as preparing other lands to plant.

In relation to equipments used, knapsack sprayer is mostly used in cabbage production although the farmers shifting to power sprayer wherein it is usually used in wide farm lands. It is easier and faster to use than knapsack sprayer.

Farmers with own trucks for transportation increased. They strive to buy their own truck to lessen their expenses because one of the high expenses is the transportation when hiring other trucks. It can also lessen the trouble of transporting products to the



market like finding a truck when everyone are harvesting. They can transport their product whenever they want.

### Recommendation

In relation to the chemicals used, it is recommended that information dissemination regarding the advantages of organic inputs as alternatives to chemical are intensified for health reason and ecology preservation.

The researcher recommends that the farmers should continue to expand their production not only to support their family but to meet the demand of the consumer. Thus, minimizing the risk for a shortage of supply.

The use of power sprayer is recommend rather than the knapsack sprayer to reduce the hard work in spraying and the time consumed. It can also minimize the risks in their health like having back ache and sometimes results to poor body posture.

It is recommended that the farmers should have their own trucks to lessen their expenses in transporting their crops to the market.

Lastly, I recommend that other Researchers may continue this study by broadening the scope and delimitation.



## LITERATURE CITED

- BAUTISTA, O. R. 1986. Vegetable Production. 3<sup>rd</sup> Edition. Revised Edition of the Vegetable Training. Pp. 200, 209-210.
- BARANGAY NATURAL RESOURCES MANAGEMENT PLAN (BNRMP). 2000-2006. Demographic Characteristics and Economic Sector Profile. Amgalueyguey, Buguias, Benguet.
- BARANGAY NATURAL RESOURCES MANAGEMENT PLAN (BNRMP). 2002. Demographic Characteristics and Economic Sector Profile. Amgalueyguey, Buguias, Benguet.
- BPRE. 1994. Technology. Bureau of Post Harvest Research and Extension. Buguias and Atok, Benguet.
- CLAUDIO, J. N. 2004. Pesticide Utilization by Vegetable Farmers in Buguias, Benguet. BS Thesis. Benguet State University, La Trinidad Benguet.
- DEPARTMENT OF AGRICULTURE. 1990.
- DE VRIES, M. K. 1985. The darkness of Entrepreneurship. Harvard Business Review.
- DINAL-ONG, F.C. 2003. Production and Marketing Strategies of Citrus in Calocan, Cabbarroguis, Quirino. BS Thesis. Benguet State University, La Trinidad, Benguet. Pp. 3.
- DODOY, J. G. 2004. Profile of Farmers- Entrepreneurs in La Trinidad, Benguet. BS Thesis. Benguet State University, La Trinidad, Benguet.
- FAYLON, L.D. 1981. Marketing Practices and Problems of Vegetables in the Philippines. Agricultural-Economics and Development. Pp. 48-49.
- LACAMBRA, R. 1997. Economics of the Rice Production in San Miguel, Tarlac. BS Thesis. Benguet State University, La Trinidad, Benguet. Pp. 4.
- MICROSOFT ENCARTA. 2007. Vegetable Production. Retrieved March 5, 2009 from <http://www.agriculture.com/>
- MINDE NEWS. A Weekly News of Mindanao News and Information Cooperative Center. Vol. 1 No. 30.
- PAING, B. 2001. Agri- Talk, Philippine Panorama, Philippine Daily Inquirer. May 6, 2006.





PHILIPPINE COUNCIL FOR AGRICULTURE, FORESTRY, AND NATURAL RESOURCES RESEARCH AND DEVELOPMENT (PCARRD). 2000.

PDCO. 1993. Economic Profile. Benguet Province.

SARIAN, Z. 2006. Agri- Talk, Philippine Panorama, Philippine Daily Inquirer. May 6, 2006.

SIO-ANGAN, J. 1987. A Comparative Study of Middlemen's Practices in marketing Selected Highland's Vegetable in La Trinidad, Benguet. Unpublished Undergraduate Thesis. Benguet State University, La Trinidad, Benguet. Pp. 9.

VESPER, K. 1982. Entrepreneurs and Public policy. New Jersey: Prentig Hall, Inc. Pp. 59.



## APPENDIX A

## Survey Questionnaire

I. General Information

1. Name: \_\_\_\_\_(optional)
2. Age: \_\_\_\_\_
3. Sex:  male  
 female
4. Civil Status:  single  
 married  
 widower  
 others \_\_\_\_\_
5. Educational Attainment:  elementary  
 high school  
 college  
 others \_\_\_\_\_
6. No. of years in farming: \_\_\_\_\_

II. Changes in Cabbage Production Practices

Variables	1990	2008	Reason of change
1. Area Planted (hectare/ sq. meter)	<input type="checkbox"/> ¼ hectare <input type="checkbox"/> ½ hectare <input type="checkbox"/> ¾ hectare <input type="checkbox"/> 1 hectare <input type="checkbox"/> others _____	<input type="checkbox"/> ¼ hectare <input type="checkbox"/> ½ hectare <input type="checkbox"/> ¾ hectare <input type="checkbox"/> 1 hectare <input type="checkbox"/> others _____	



<p>2. Technologies/Tools</p> <p>Used in:</p> <p>a. Land Preparation</p>	<p><input type="checkbox"/> grab hoe</p> <p><input type="checkbox"/> spade</p> <p><input type="checkbox"/> bolo</p> <p><input type="checkbox"/> others_____</p>	<p><input type="checkbox"/> grab hoe</p> <p><input type="checkbox"/> spade</p> <p><input type="checkbox"/> bolo</p> <p><input type="checkbox"/> others_____</p>	
<p>3. Fertilization</p> <p>a. Organic</p> <p>b. Inorganic</p>	<p><input type="checkbox"/> chicken manure</p> <p><input type="checkbox"/> triple 14</p> <p><input type="checkbox"/> Urea</p> <p><input type="checkbox"/> 16-20-0</p> <p><input type="checkbox"/> others_____</p>	<p><input type="checkbox"/> chicken manure</p> <p><input type="checkbox"/> triple 14</p> <p><input type="checkbox"/> Urea</p> <p><input type="checkbox"/> 16-20-0</p> <p><input type="checkbox"/> others_____</p>	
<p>4.Crops Planted &amp; Variety</p>	<p><input type="checkbox"/> RB</p> <p><input type="checkbox"/> Scorpio</p> <p><input type="checkbox"/> others_____</p>	<p><input type="checkbox"/> RB</p> <p><input type="checkbox"/> Scorpio</p> <p><input type="checkbox"/> others_____</p>	
<p>5.Planting/ Transplanting</p>	<p><input type="checkbox"/> manual</p> <p><input type="checkbox"/> mechanized</p> <p><input type="checkbox"/> others_____</p>	<p><input type="checkbox"/> manual</p> <p><input type="checkbox"/> mechanized</p> <p><input type="checkbox"/> others_____</p>	
<p>6.Crop Care/ Plantation Maintenance</p> <p>a. Chemical applied</p>	<p><input type="checkbox"/> Dithane</p> <p><input type="checkbox"/> Tamaron</p> <p><input type="checkbox"/> Manzate 200</p> <p><input type="checkbox"/> others_____</p>	<p><input type="checkbox"/> Dithane</p> <p><input type="checkbox"/> Tamaron</p> <p><input type="checkbox"/> Manzate</p> <p><input type="checkbox"/> others_____</p>	
<p>7. Irrigation</p>	<p><input type="checkbox"/> manual</p> <p><input type="checkbox"/> rain burse</p> <p><input type="checkbox"/> others_____</p>	<p><input type="checkbox"/> manual</p> <p><input type="checkbox"/> sprinkle</p> <p><input type="checkbox"/> others_____</p>	



8. Farm Equipments a. Farm Machinery	<input type="checkbox"/> water pumps  <input type="checkbox"/> knapsack sprayer  <input type="checkbox"/> power sprayer  <input type="checkbox"/> others_____	<input type="checkbox"/> water pumps  <input type="checkbox"/> knapsack sprayer  <input type="checkbox"/> power sprayer  <input type="checkbox"/> others_____	
9. Hauling	<input type="checkbox"/> Hired  <input type="checkbox"/> Own trucked  <input type="checkbox"/> Send thru Bus  <input type="checkbox"/> others_____	<input type="checkbox"/> Hired  <input type="checkbox"/> Own trucked  <input type="checkbox"/> Send thru Bus  <input type="checkbox"/> others_____	

