

Vegetable Production in Ilocos Sur

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Abstract

The study covered the thirteen municipalities of Ilocos Sur namely: San Esteban, Narvacan, Sta. Maria, San Ildefonso, Sto. Domingo, Magsingal, San Juan, Sta. Catalina, San Vicente, Sinai!, Vigan, Caoayan, and Cabugao. It utilized the descriptive method of research with the aid of a questionnaire, supplemented by personal interviews.

Vegetable producers mostly belonged to 40-49 and 50-59 age brackets and attained secondary and tertiary education. Only a few had trainings and seminars. Gas-fed water pump was the most commonly used farm equipment. Majority owned the lands they were tilling and farm equipments they were using. Only a few had loans. Other livelihood engagements include raising other crops, retail business, carpentry, teaching, driving and weaving.

Most vegetable farmers had a land area of 1,000 to 1,500 m². The vegetables produced were onions, tomato, eggplants, cauliflower, mungo, cabbage, pepper, okra, ampalaya, squash, garlic, patola, and pechay. Production expense was concentrated mostly in land preparation and least in transplanting, marketing and hauling.

The top five (5) vegetables with highest rate of return were onion, eggplant, mungo, okra and ampalaya. On the whole, all the vegetables studied had remarkable return on investment.

Some of the soil treatments are comparatively expensive. Vegetable growers should check the optimum cost profit possibilities before using any treatment. The vegetable growers should be organized so that they can strongly assert their rights and privileges. The government should provide more trainings and seminar workshops to the vegetable producers so that they will be updated with the new trends and techniques in the farm and in selling their products; Further studies especially on gender involvement in vegetable production should be conducted; With the high percentage of return on investment of the vegetable producers, more

Ilocanos should engage in vegetable production so that their economic condition be uplifted.

Introduction

Background of the Study

Vegetable is an important part of the regular human diet. Cereals, such as rice and wheat, may be the stuff of life, but it is the vegetable that provides many of the interesting flavors and texture of food. Vegetables are important sources of vitamins, minerals and dietary fiber.

The technology of producing vegetable crops is very similar to that of other agricultural crops. Environmental factors, such as climate, soil and available water, largely determine crop growth. Consequently, vegetable production is location specific.

Most vegetables are grown as annual crops with a relatively short growing season of just a few months. Consequently, depending on location, a grower may be able to produce a series of crops from the same piece of land.

The production cycle of vegetables includes the planning stage where the farmer would select the site, obtain the cultivators, variety of seed to be sown, undertake soil tests, and, schedule the planting time for an optimum and orderly harvest.

The sowing or transplanting period is very critical, as most vegetable crops are small seeded or are tender transplants requiring timely management and proper care especially on appropriate depth of sowing, fertilizer placement, herbicide application, irrigation scheduling and plant protection during the early establishment period.

During the growing period, intensive crop management is required to ensure no plant stress occurs. Optimum time for thinning, side dressing fertilizer, irrigation pest and disease spraying, trellising or pruning and weed control must be provided to each crop.

Vegetable production is both a big business and a subsistence activity. In the developed world, vegetables are commonly produced on very large farms and transported great distances to markets on the other side of the country. In developing countries, vegetable crops are produced on subsistence farms and may also be transported short distances to local markets.

World agriculture is still facing immense problems and challenges in meeting present and future food needs. Population continues to grow self-sufficiency ratio in developing countries declines and millions of people in the third world live in absolute poverty. About 90% of these poor people are rural dwellers wholly or partly dependent on agriculture.

In the Philippines, particularly in Ilocos Sur, majority of the population remain below the poverty line. As the gap between human population and food supply widens, means to alleviate poverty are not only necessary but also urgently imperative. This study will provide information regarding the present status of vegetable growers. Policy implications from this study will lead more precise intervention to help uplift the economic condition of the target group.

Objectives

The study primarily aimed to determine and analyze the cost and returns of vegetable production in Ilocos Sur. Specifically, it sought to answer the following questions:

- I. What is the profile of the vegetable producers in Ilocos Sur in terms of the following:
 - a. Sex
 - b. Age
 - c. No. of household members
 - d. Educational attainment
 - e. Training and seminars attended
 - f. Membership in an organization
 - g. Equipment used
 - h. Land ownership
 - i. Access to loan
 - j. Other sources of income?

2. What is the profile of the vegetable production in terms of:
 - a. Land area
 - b. Kind of vegetables produced
 - c. Volume of vegetables gathered per kind
 - d. Approximate expenses in terms of:
 - d.1 Raising of seedlings/ planting materials
 - d.2 Land preparation
 - d.3 Fertilization and cultivation
 - d.4 Irrigation and watering
 - d.5 Crop protection (weeding and spraying)
 - d.6 Harvesting and packaging
 - d.7 Marketing and hauling

d.8 Others

3. What is the gross income of production per kind of vegetable produced and the net profit?

Scope and Delimitation

The study covered thirteen (13) municipalities of Ilocos Sur namely: San Esteban, Narvacan Sta. Maria, San Ildefonso, and Sto. Domingo, Magsingal, San Juan, Sta.Catalina, San Vicente, Vigan, Sinait, Cabugao and Caoayan. There were sixty (60) respondents. The researchers attempted to analyze the cost and returns of vegetable production in Ilocos Sur. It also determined the profile of vegetable producers and vegetable production.

This study was conducted from April 2003 to May 2004.

Review of Related Literature

Cabanting et. al (2000) in their study on the Status and Prospects of Fruit Production in Ilocos Sur found out that the ten most profitable fruit business ventures were mango, grapes, rambutan, kasoy, banana, calamansi, tamarind, pineapple, coconut and avocado. The fruit growers were engaged in the aforementioned venture to earn additional income. They sold their fruits either on wholesale or retail modes in a very wide distribution - local market, neighborhood, nearby town/provinces, other regions, and export.

The respondents assessed the price of their products to be "fair" (45.79%), "break even" (43.16%) or "low" (36.84%).

Strang et.al (2002), in their study on U.S. cabbages found out that the top earliest maturing fresh market cultivars (57 to 70 days after transplanting) were Ramada, Fresco, Atlantis and Blue Vantage. The top later maturing fresh market cultivars (70 or more days after transplanting) were Bravo, Broncho, Cecile, and Blue Dynasty. It was also found out that Cecile is the most salable among them all.

Brent et.al. (2001) in their study entitled, "Kentucky Tomato: Yield Income, Taste and Quality of Staked Tomato Cultivars" found out that the incomes per acre were lower in 1999 than in 1998 because of lower 1999 wholesale tomato prices.

Incomes from cultivars at QSND ranged from \$5000 to \$8400 per acre. Average fruit size and the percentage of jumbo and extra- large fruits were lower resulting in lower incomes. Five to six cultivars included in the 1998 taste tests were rated "acceptable".

Methodology

The descriptive method of research was used in *this study*. **Sixty** (60) respondents were selected randomly from thirteen municipalities in *Ilocos Sur*. **Five** (5) respondents were interviewed per vegetable group namely: pepper, eggplant, *tomato*, okra, squash, mungo, cabbage, cauliflower, ampalaya, onions and *garlic*. Three (3) respondents for patola and *two* (2) for pechay. An interview schedule was utilized *to* gather the data. *The* checklist was reviewed and validated by experts *in* socio-economics. It was personally administered to the respondents. The data were gathered, analyzed and interpreted using appropriate statistical measures like frequencies, percentages, means and ranks to address the problems posted in this study.

Results and Discussion

Socio- demographic Characteristics of Vegetable Producers

Table I presents the socio-demographic characteristics of the respondents.

Table 1. Socio-demographic profile of vegetable producers in Metro Vigan.

PROFILE	NO.	%
Sex		
Male	54	90
Female	6	10
Age		
60-69	5	8.33
50-59	20	33.33
40-49	20	33.33
30-39	11	18.33
20-29	4	6.66
Educational Attainment		
College graduate	10	16.67
Below college graduate	13	21.67
High school graduate	17	28.33
Below high school gradual ^o	5	8.33
Elementary graduate	11	18.33
Below elementary gradg ^o !	4	6.67

Table 1 continued

PROFILE		NO.	%	
Membership in Organization				
Cooperative		23	38.33	
Farmer's organization		40	66.67	
RIC		11	18.33	
BAFC		1	1.67	
No. of household members	MALE	FEMALE		
70& above	1	1	2	0.78
60-69	5	4	9	3.50
50-59	6	5	11	4.31
40-49	6	5	11	4.31
30-39	11	20	31	12.16
20-29	30	43	73	28.63
10-19	47	34	81	31.76
0-9	23	14	37	14.51
No. of Dependents (studying)				
College	15	19	34	31.78
High School	20	17	37	34.48
Elementary	22	8	30	28.04
Preparatory	4	2	6	5.60
Trainings/Seminars Attended				
Farming Program		1	1.67	
Ampalaya/Eggplant production training		2	3.33	
Kalikasan		6	10	
Farmer's youth organization		2	3.33	
Sta. Catalina Yield Boosters Seminar		1	1.67	
Crop Protection		1	1.67	
Eastwest training		2	3.33	
Algaper		1	1.67	
Farmer's association seminar		2	3.33	
JRRI		1	1.67	
Cooperative Seminar		1	1.67	
SWES		3	5	
Onion Seminar in Batac		1	1.67	

Table 1 continued

PROFILE	OWNED		RENTED		TOTAL	
	No.	%	No.	%	No.	%
Farm Implements/ Equipment/ Tools Used						
Tractor	13	21.67	21	35	34	56.67
Kuliglig	24	40	7	11.67	31	51.67
Generator	40	66.67	3	5	43	71.67
Electric pumps	6	10			6	10
Plow	5	8.33			5	8.33
Sprayer	1	1.67			1	1.67
Land ownership						
Owned			31			51.67
Rented			18			30
Lease (Product)			11			18.33
Source of Agricultural loans						
Rural Bank P 5,000			1			1.67
10,000			1			1.67
50,000			2			3.33
60,000			1			1.67
100,000			1			1.67
Land Bank P 7,000			1			1.67
10,000			5			8.33
18,000			1			1.67
30,000			1			1.67
Fatima MPC P 10,000			1			1.67
Private Person						
Below P1,000			1			1.67
1,000-9,000			3			5
10,000-18,000			1			1.67
19,000-27,000			1			1.67
28000 & above			2			3.33
Other Sources of income						
Fanning					43	71.67
Fishing					16	26.67
Carpentry					4	6.67
Weaving					1	1.67
Lucrative Business (store)					7	11.67
Teaching					1	1.67
Driving					1	1.67

Sex, There were more males (90%) than females (10%). This implies that men being generally stronger, till the soil, do the hard work and figuratively responsible in providing food for their families.

Age. Out of 60 vegetable producers, 33.33% belonged to the age brackets of 40-49 and 50-59. Some belonged to the 30-39 age brackets (18.33%) and only a few belonged to the 60-69 (8.33%) and 20-29 age brackets (6.66%).

This implies that the vegetable producers in Ilocos Sur are in their late middle age. Most of them are married and they are forced to engage in planting to earn a living.

Educational attainment. More vegetable producers finished secondary education (28.33%) or college undergraduate (21.67%) than those who finished elementary graduate (18.33%), college graduate (16.67%), below high school graduate (8.33%) and below elementary graduate (6.67%).

This implies that the need to convince people to finish their college education for their own advancement.

Membership in an organization. Out of 60 respondents, majority (66.67%) were members of fanners' organization, 38.33% were members of cooperatives, 18.33% were members of RIC and 1.66% belonged to BAFC.

Age level of household members. Most of the respondents' household members (31.76%) belonged to 10-19 age bracket, followed by 20-29 (28.63%), 0-9 (14.51%), 30-39 (12.6%), 40-49 and 50-59 (4.31 respectively), 60-69 (3.5%), and, seventy and above (0.78%) in a descending order.

Apparently, greater portion of the household belonged to the younger generation.

Likewise, there were more males {N=129} than females {N=126} household members.

Number of dependents. About one-third (34.48%) of the respondents' dependents were in secondary level; 31.38% were in college; 28.04% were in elementary and 5.60% were in preparatory. This implies the pressure on the respondents to work harder to be able to send their children to school whose ages are still in the secondary, college and elementary levels to help ensure better future.

Trainings/Seminars attended. Very few respondents had attended trainings and seminars. Ten percent (10%) attended 'KALIKASAN', 5% on S.W.E.S; 3% on combined topics about fanner's association, seed production and vegetable production (ampalaya and eggplant).

The few seminars attended were deemed very significant by growers with their claim that they learned much. Most of the farmers were unable to attend the seminars because according to them, they were not properly informed.

Farm implements/equipment/tool used. The most commonly used farm implement/equipment is the gas-fed water pump which was mostly owned (66.67%), and rented by a few (5%). It was followed next by tractor (56.67%) of which, 21.67% owned it while 35% rented. The "kuliglig" also followed closely (51.67%) of which, 40% owned it while 11.67% rented it. Only a few used owned electric water pump (10%), plow (8.33%) and sprayer (1.67%).

This implies that majority of the respondents were using modern farm implements and equipment which makes farm work easier, faster and more efficient.

Land ownership. Majority of the respondents (51.67%) owned their lands. Around 30% rented while 18.33% practiced the lease system. This implies that majority of the vegetable grower respondents were not resource poor. They claimed that they either inherited the lands they are tilling from their forebears or acquired out of the proceeds from the vegetable production venture.

Agricultural loan. More than one third (38%) of the respondents had loans at the Rural Bank, Land Bank, Fatima MPC and private persons. The biggest loan amounted to P100,000 and was borrowed from the Rural Bank. The least was borrowed from a private person.

This implies that 62% of the respondents were able to raise their own capital. Many of the respondents mentioned that for as long as there is no typhoon to destroy their crops, their profits in vegetable production can be rolled twice or even thrice.

Other sources of income. The other sources of income were: fanning (71.67%), fishing (26.67%), lucrative business (11.67%) carpentry (6.67%) teaching (1.67%), driving (1.67%) and weaving (1.67%). This likewise imply that the respondents are industrious and aspire for high earnings and better living.

Vegetable Production

Table 2 presents the profile of vegetable production in Ilocos Sur.

Table 2. Profile of vegetable production (Average).

KINDS OF VEGETABLES	AREA (m')	NO.OF CROPPINGS	PRODUCTION VOLUME (KGS.)
1. Pepper	5,000	1	40,000
2. Eggplant	5,400	1	55,800
3. Tomato	5,800	2	61,345
4. Okra	5,000	1	51,800
5. Squash	4,750	1	57,000
6. Mungo	4,900	1	58,800
7. Cabbage	5,000	3	61,000
8. Cauliflower	5,000	3	62,000
9. Ampalaya	6,200	1	62,400
10. Onions	8,000	2	80,000
11. Garlic	5,000	2	64,000
12. Patola	3,000	1	36,000
13. Pechay	1,000	2	12,000

Onion had the biggest area (8,000m') and the highest harvest (80,000 kg) followed by ampalaya (6,200 m') with 62,400 kg; tomato (5,800s m') with 61,345 kg; eggplant (5,400 m') with 55,800 kg; garlic (5,000 m') with 64,000 kg; cauliflower (5,000 m') with 62,000 kg; cabbage (5,000m') with 61,000 kg; okra (5,000 m') with 51,800 kg; pepper (5,000 m') with 40,000 kg; mungo (4,900 m?) with 58,800 kg; squash (4,750 m') with 57,000 kg; patola (3,000 m') with 36,000 kg and pchay (1,000 m ') with 12,000 kg.

Onion was planted in a bigger area because its mode of planting is easier and can be stocked for a longer time. On the contrary, pchay was planted in the smallest area because it is perishable and cannot be stocked for a longer time. In Sta. Catalina. Ilocos Sur farmers planted cabbage and cauliflower thrice because of favorable location, better quality of land and water system.

Production Cost. Table 3 shows that farmers spent highest in land preparation, with a total of P1,122,078 and a mean of P18,701.30 followed by: fertilizer application (P664,800) with a mean of P11,080; irrigation (P662,920) with a mean of P11,048.67; crop protection or spraying (P521,242) with a mean of P8,687.37; raising of seedlings and planting materials (P506,840) with a mean of P8,447.33; harvesting and packaging (P440,840) with a mean of P7,347.33; inter-tillage cultivation and weeding (P339,490) with a mean of P5,658.17; and transplanting marketing and hauling (P251,720) with a mean of P4,195.33

Table 3. Average expenses in vegetable production.

CULTURAL PRACTICES/ITEMS	TOTAL	MEAN
N=60		
Land preparation	P 1,122,078	P 18,701.30
Raising of seedlings & planting materials	506,840	8,447.33
Transplanting	251,720	4,195.33
Irrigation	662,920	11,048.67
Inter-tillage cultivation and weeding	339,490	5,658.17
Fertilizer application	664,800	11,080.00
Crop protection (Spraying)	521,242	8,687.37
Harvesting & packaging	440,840	7,347.33
Marketing & hauling	251,720	4,195.33
Grand Total	476165.0	7,936.08

Majority of the respondents spent much in land preparation because they hired men to *till* their lands and they fed them. Furthermore, they spent much for the gasoline of their tractors, water, fertilizers and insecticides.

Production returns. Table 4 presents the average return on investment of vegetable production in Ilocos Sur.

Table 4. Return on investment of vegetable production in Ilocos Sur average.

KINDS OF VEGETABLE	ARESO. METERS	VOLUME IN KGS.	GROSS INCOME	EXPENSES	NET PROFIT	ROI %	RANK
Onion	8,000	80,000	800,000	337,000	463,000	137.39	1
Eggplant	5,400	55,800	558,000	260,000	298,000	114.62	2
Mungo	4,900	58,800	1,176,000	575,000	601,000	104.52	3
Okra	5,000	51,800	518,000	255,000	263,000	103.14	4
Ampalaya	6,200	62,400	1,248,000	620,000	628,000	101.29	5
Tomato	5,800	61,345.45	613,454.50	313,150	3,003,045	95.90	6
Squash	4,750	57,000	684,000	362,000	322,000	88.95	7
Pechay	1,000	12,000	96,000	51,000	45,000	88.24	8
Garlic	5,000	64,000	1,280,000	680,500	599,500	88.10	9
Cabbage	5,000	61,000	610,000	325,000	285,000	87.69	10
Patola	3,000	36,000	180,000	103,000	77,000	75.00	11
Cauliflower	5,000	62,000	620,000	380,000	240,000	63.16	12
Pepper	5,000	40,000	800,000	500,000	300,000	60.00	13

Onion ranked first as to return on investment (ROI) of 137.39% ROI. The onion growers gained much at the time of the study because of the favorable weather condition, i.e., *no* typhoon destroyed their crops.

On the contrary, red-bell pepper ranked the least with a net profit of P300,000, and 60% return on investment. Peppers had a very short demand. Peak season only covers the period December 19 to February 14.

Conclusion

The vegetable production in Ilocos Sur is predominated by the male sector mostly belonging to 40-49 and 50-59 age brackets. Majority finished secondary education, had attended college and are members of farmer's organizations. Household dependents were mostly within the 10-19 age brackets and are in secondary level education.

Few farmers had trainings and seminars. The most used farm implement/equipment is the gas-fed water pump and majority owned it. Majority of the growers owned the land they were tilling, and only a few had loans from banks and private persons. Fanning, lucrative business, carpentry, teaching, driving and weaving are the other sources of income.

The vegetable producers do not fall below the poverty line because mostly owned the land, had their capital, and, owned their equipment and vehicles for the transport of vegetable produce.

Majority of the vegetable growers had a land area of 1,000 to 9,999 square meters. The vegetables produced were onions, tomato, eggplant, cauliflower, mungo, cabbage, pepper, okra, ampalaya, squash, garlic, patola and patchay.

Production expenses were mostly on land preparation and least in transplanting, marketing and hauling.

The top five vegetables that generated returns were onion, eggplant, mungo, okra and ampalaya in descending order.

As long as there is no typhoon, the harvest is expected to be favorable. Net profits are rolled twice or thrice.

Recommendations

1. Some of the soil treatments are comparatively expensive, vegetable growers should check the cost-profit possibilities before using any treatment.

2. The vegetable growers in order to have strong voice should have full membership in their vegetable organization so that they can strongly assert their rights and privileges.
3. The government should provide more trainings and seminar workshops to the vegetable producers so that said farmers will be updated with prices, production technology and marketing schemes.
4. Further studies especially on gender involvement in vegetable production is highly recommended.
5. With the remarkable Return on Investment of vegetable producers, it is strongly recommended that more Ilocanos should engage in vegetable production to uplift the economic condition of the whole province.

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