

Trends and Issues of the Cut flower Industry of Nueva Vizcaya

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Abstract: This study was undertaken to generate information on the profile of the cut flower growers of Nueva Vizcaya, determine their operational, marketing and financial practices then identify and analyze the problems/constraints or issues affecting cut flower production. These current conditions and issues are used as bases in the formulation of interventions for the improvement of the said industry. Nueva Vizcaya cut flower growers propagated a variety of flowers in a relatively wide garden. Majority of the growers have acquired nurseries and greenhouses to propagate their plants, manual and power spray were commonly used to water their plants, and the grab hoe and cutter were generally used as tools. Growers acquired seedlings from propagators within the area and from those outside the province if seeds are unavailable. None so far used herbicides in the propagation of cut flowers. To prolong the vase life of harvested cut flowers, growers put them in water. Unsold cut flowers were dried and used as fertilizers. The growers have inadequate breeding technology and insufficient production technology and some have irrigation problems especially those areas that are frequently rain-visited. Most of their marketing problems concern linkage capabilities, inefficiency of marketing network, no specific market outlet, and inadequate access to market information on market demand. There is also the insufficiency of strategic alliances (cooperatives), high cost of raw materials and the lack of capital for expansion as financial constraints.

Keywords: Cut Flower, Financial Practices, Marketing Practices, Operational Practices, Packaging, Post-harvest Practices.

I. INTRODUCTION

Cut flowers are parts of plants, characteristically including the blooms or inflorescences and some attached plant materials but excluding the roots and soil. Fresh cut flowers are highly perishable because they maintain only limited life-supporting processes by taking water up through their stems. Fresh cut flowers are used for decorative purposes such as vase arrangements and bouquets at formal events; designs for weddings and funerals; gifts on occasions such as Mother's Day, Valentine's Day, in times of illness, and at holidays such as Christmas and Easter; they are used as corsages and boutonnières; and informal displays to beautify homes and public places.

The cut flower trade is a multibillion-dollar world industry. Flowers are grown in many countries thus it is considered as a highly dynamic industry. Product varieties, the origin of production, production techniques, markets and retailing arrangements are all part of how the cut flower industry operates.

Cut flowers are grown throughout the Philippines but the industry was originally confined only to a few, small growers. In the last few years, an increased awareness and recognition of high return on investments, rapid population growth, higher standard of living, more hotels and restaurants, influx of tourists has led to more demanding and choosy clients. From an annual total cut flower production of 8,120 metric tons in 1990, it grew to 22,671 metric tons produced from 1,558 hectares in 2003. The 20.63 percent production growth rate over a period of 14 years was reason enough for the government as well as the private sector, to take a more serious look at this emerging industry. There were more activities that ensued and more government funds were poured into research (Naranja, 2006).

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An increased demand triggered more production but despite the larger area devoted to cut flower; there is still a short fall in the supply. According to the Bureau of Plant Industry, the country imports annually around 61,224 kilograms of cut flowers, mainly chrysanthemum and orchids from other countries. This is strongly evident during Valentine's Day (Feb. 14), All Saint's Day (Nov. 1), School Graduation (March and April), May flower Festivals and Yuletide Seasons (Rosario, 2005).

The major cut flower producers of the country comes from Batangas, Benguet, Bukidnon, Cagayan de Oro, Cebu, Davao city, Ilo-ilo, Laguna, Negros Occidental, Pampanga, South Cotabato, Tagaytay and Zamboanga. Other semi-temperate provinces, like Nueva Vizcaya, also contribute in the production of cut flowers.

Nueva Vizcaya – the gateway to Cagayan Valley is envisioned to be the regional center for fruit and vegetable production and spiced based industries. It is basically an agricultural economy with commerce, trade and industry contributing to its growth and development. Among other major economic activities are farming and cattle and swine raising. Primary crops are polar and corn. Minor crops are root crops, vegetables and fruits. The province produces quality onions and vegetables which are often sold in Metro Manila. Oranges and mangoes are now major crops being exported fresh to Asian countries since 1998 (dohreg2@cag.pworld.net.ph).

Nueva Vizcaya is blessed with semi-temperate climate and rich soil suitable for high crop production. It is relatively dry from November – April and relatively wet during the rest of the year. Maximum temperature ranges from 22-25 degrees Celsius. December and January are the coldest months when temperature falls to about 20 degrees Celsius while the warmest months are April and May. Nueva Vizcaya is sometimes referred to as lowland Baguio because of its pleasant climate.

The province's uplands are producers of high quality vegetables making the province a salad bowl capital of Cagayan Valley. Cut flower production is also particularly attractive because of the favorable climate and easy access to roads.

Interviews from some personnel of the Provincial Planning and Development Office (PPDO) indicated that the cut flower industry in the province of Nueva Vizcaya is considered to be one among the fastest growing industries. It has evolved from a garden hobby to commercial enterprise in the early 1980s and production was intended primarily to cater to the local market. As the preference and buying capacity of high middle class consumers changed and improved local requirement has grown so fast in tandem with institutional demand brought about by the growing tourism industry of Nueva Vizcaya.

The oldest cut flower variety produced is the Gladiola in Dupax del Norte and the orchids in Tactac, Sta. Fe. Kasibu garowers produced gladiola and anthuriums. In the year 2000, roses daisies, heliconias and orchids were experimentally grown at Kasibu National Agricultural School (KNAS). Due to the favorable climate in the uplands, Kayapa growers propagated roses, chrysanthemums, anthuriums, orchids and baby's breath. Producers of gladiola, roses asters and baby's breath were grown in Canabay and Banila, Dupax del Sur. Gladiola, aster and baby's breath were also produced in Zigzag, Dupax del Norte (Nueva Vizcaya State University Research Department [NVSURD], 2000).

Nueva Vizcaya, however, initially produced 291,000 dozens of gladiola in 1995; 231,750 dozens of daisy in 1996; and 53,950 dozens of orchids in the same year (NVSURD, 2000). Supported by the Provincial government of Nueva Vizcaya, the cut flower industry of Nueva Vizcaya then started to boom. The Provincial Agriculture Office conducted trainings and seminars to hobbyists, growers and potential propagators until 2005.

The Bureau of Agricultural Statistics (BAS) from the year 2003 to 2005 has no recorded statistics on the volume of production on Nueva Vizcaya cut flowers. However, in 2006, the same office recorded that 19.5 metric tons of gladiolas, 2 metric tons of orchids; 1 metric ton of dendrobium, 1 metric ton of vanda and roses were local productions. They were produced in a total land area of 11 hectares. In 2006, Nueva Vizcaya's cut flower production was .22% of the total production of the Philippine cut flower industry. (Bureau of Agricultural Statistics Provincial Office in NV, 2007)

The overall purpose of this research was to generate information on the profile of the cut flower growers of the Philippines; determine their operational, marketing and financial practices then identify and analyze the problems/constraints or issues affecting cut flower production. These current conditions and issues are used as bases in finding out the factors affecting the economic viability of the said industry.

Specifically, this study attempted to answer the following questions:

1. What is the profile of the cut flower growers?
2. What are the operational practices employed?
3. What are the marketing practices applied?
4. What are the financial practices?
5. What are the problems encountered in each of the following variables?
 - 5.1 Operational aspects
 - 5.2 Marketing aspects
 - 5.3 Financial aspects

After consolidating the amassed data, these were summarized using frequency counts and percentages. Most of the data processing was computerized to ensure accuracy, speed and ease in handling the voluminous data. Construction of appropriate tables was done next to illustrate the distribution of respondents according to the different variables under investigation and/or to show the results of the statistical analyses.

REVIEW OF RELATED LITERATURE:

This section presents a summary of relevant literature and studies on the propagation of cut flowers. It comprises of four sections. Section 1 focuses on the profiles of the different cut flower industries; Section 2 on practices in terms of operational, Marketing and Financial; Section 3 on the problems and issues concerning cut flower Propagation; and Section 4 on the Interventions for the improvement of the industry.

Section 1: Cut Flower Industry Profile:

In a study conducted by the Department of Horticulture at the University of the Philippines in Los Banos (UPLB), the Philippine Ornamental Horticulture Industry has come a long way since the 70's when cut flowers were considered its major component and the growers were hobbyists or plant enthusiasts. In the mid 80's the industry became a huge income source and potential for a foreign revenue earner. Interest in the commercialization of horticultural products grew to a point where the government recognized its importance and contribution to the local economy. The number and size of farms had continued to increase adopting modern technologies where appropriate and in some cases foreign technology was sourced to boost production and quality. Promotion on the use of Ornamental Horticulture products increased people's awareness of the benefits that can be derived from the industry (Rosario, 2005).

Accordingly, a study conducted by the Operational Agro meteorological Services in the Philippines of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAG-ASA) for 1998, showed the country's potential in terms of the ornamental and floriculture industry, since the Philippines has a land area of 30 million hectares and that 47 percent of which is agricultural land. Land resources in the country are generally classified into forest lands and alienable and disposable lands. Out of the 14.2 million ha alienable and disposable lands, 13 million ha are classified as agricultural lands.

The total area devoted to agricultural crops is 13 million ha distributed among food grains, food crops and non-food crops. Food grains occupied 31 percent; food crops utilized 52 percent, while 17 percent were used for non-food crops. Of the total area under non-food crops, 404 thousand hectares were accounted for pasture and 13 thousand for the ornamental horticulture and floriculture industry (Jose, et al., 1998).

A research by Collinson (2001) at the National Resources and Ethical Trade Programme (NRET) on the Kenya Flower Industry mentioned that Kenya's cut flower industry had its humble beginnings soon after the end of the Second World War. Exports did not begin to take off, quite literally as it happens, until the late sixties, when wide-bodied jets started to bring large numbers of tourists to Kenya and service the fresh produce industry. The flower industry's link with fresh produce goes deeper than the mere sharing of transport. It grew largely from expertise, infrastructure and investment provided by the burgeoning vegetable industry.

In the same way, Brumfield (1997) disclosed that significant commercial flower production started in the late 1970's in Tasmania. The industry expanded considerably in the 1980's and continues to grow. The flower bulb sector has shown the greatest growth increases over the past few years. This sector has developed rapidly and is now worth an estimated \$3-4 million. There are now new opportunities developing for the export of bulb flowers to Asian, European and the Australian markets.

Equally, Ozkan, et al (1997) revealed in a study conducted for the Turkish Agricultural Directorate that Commercial cut-flower production began in Turkey in 1946. As in the U.S. at that time, cut-flowers were produced mainly near large cities. In Turkey, the production center was primarily Istanbul and surrounding areas, as the flowers were mainly for domestic consumption. In the beginning of the 1980s, production shifted to the Mediterranean (Antalya) and Aegean (Izmir) regions. Antalya is a popular tourist destination located on the Mediterranean Sea in south-central Turkey. A favorable climate and rapid air transportation to Europe gave Antalya a comparative advantage over many other sites in Turkey and the rest of Europe. Thus, Antalya province has become a major center for export-oriented cut-flower production in Turkey.

World cut flower markets are growing at a current rate of 6-9% per annum. Flowering pot plant markets, particularly in the European Union are growing at a fast rate. Consumption is centered on three Northern Hemisphere locations: the European Union, North America and Japan (Karingal Consultants, 1998).

Section 2: Propagation Practices:

The Philippines is an archipelagic country with various climate types. The principal centers for ornamental production by region include the Cordillera Administrative Region (CAR), Central Luzon, Southern Tagalog, Western and Central Visayas, and Northern and Southern Mindanao, each having a peculiar growing condition. Among the cut flowers, chrysanthemum is largely produced in Central Visayas (86%); rose and gladiolus in the CAR (43% and 83%), respectively; and orchid (93%) and anthurium (25%) in the Davao Region (Bureau of Agricultural Statistics [BAS], 2003, in Naranja, 2006).

The study of Rosario (2005) shows that the total area planted to cut flowers in 2003 was 1,586 hectares. Chrysanthemum likewise occupied the top position with 337 hectares. Over a 13-year period (1990 to 2003), gladiolus occupied about 30 percent of the total cropped area. This is due to its being planted in the field. The other cut flowers are commonly grown in pots and usually under protected growing,

In general, gladioli, aster, sampaguita, chrysanthemum and heliconias are grown in the open field. Depending on the cultural and light requirements of the cut flowers grown, greenhouses and net houses are usually constructed both in the highlands like Benguet and areas of low elevations, Semi-terete vandas are grown in the open, usually mounted on driftwoods; strap leaf vandas and dendrobiums on commercial basis are usually protected by 2 – 3 layers of fish nets and raised in pots/baskets.

Anthurium production generally uses a more advanced technology – in greenhouse complete with computerized fertigation facilities. In some areas, net houses provide the necessary light requirements of the cut flowers.

Roses are grown either in the open or in greenhouses; the same is true with the sun and heavy rains. Cultural and management practices are also easier to control inside and can be scheduled regularly regardless of the weather outside.

The flowers of *Jasminum sambac* or sampaguita are usually used as leis or garlands usually with religious connotations. The plants are grown near houses or along roadsides for easy access and convenience on the part of the grower.

Flowering is controlled in chrysanthemum and aster production, usually in the form of supplementary lights. Sometimes growth regulators are applied in chrysanthemums if they are intended as potted flowering plants.

The key players in the marketing of the cut flowers in the Philippines are the breeders/growers, input suppliers, traders, cooperatives, transporters, brokers, exporters, importers, institutional buyers and walk-in consumers.

In the same manner, the study conducted by Ozkan et al (1997) in Turkey, shows that Spray carnations were the dominant crop, accounting for over 60% of total greenhouse area of both export growers and contract growers. Standard carnations were the second most important crop for export growers and contract growers. Gerberas (*Gerbera jamesonii*) accounted

for about 12% of production area for contract growers. The area used to produce other cut flowers such as gypsophila (*Gypsophila paniculata*), chrysanthemums (*chrysanthemum morifolium*), and roses were minor.

The study further found out that most managers (97%) tried to purchase disease-free, high-quality rooted cuttings from professional propagation farms. Rooted or unrooted cuttings were imported mainly from The Netherlands and Israel. About 63% of the export growers devoted 5% of their total greenhouse areas to stock plants and propagation. Because many contract growers felt the cost of rooted cuttings provided by the export growers was too high, 36% of the contract growers propagated their own plants from vegetative lateral shoots of the flowering plants. Neither the export growers nor the contract growers reported conducting careful cost and quality analyses of purchasing cuttings versus producing their own.

Growers applied methyl bromide to sterilize the soil. About 94% of growers used methyl bromide every year, while the other 6% applied it once every two years. Growers used several systems of pinching. Pinching 1.5 times was the most common followed by double pinching. The term pinch-and a-half is often confusing. It begins with a single pinch of the main stem. When the resulting shoots are long enough about one-half of the largest shoots on each plant are pinched. The half-pinch actually is two or three pinches per plant at the later pinching time. This system reduces the amount of the first crop flowers and provides a steady production of flowers without peaks and valleys at least in the first year of production (Besemer, 1980). Most growers stated that double-pinch was good when they used an early flowering variety and planted early, but single pinch was better with late plantings. Generally, pinching occurred 21 to 30 days after planting.

Growers used drip irrigation and sprinkler systems. After planting the cuttings, growers sprinkle-irrigated for a few minutes several times per day due to the warm and bright weather. Generally, two weeks later, regular drip irrigation was started. The frequency of irrigation of flowering carnation plants varied from enterprise to enterprise depending on soil texture, air movement, etc. During the summer season six to eight t/1000 m² (26.8 to 35.7 tons/acre) of water were used every day, while in the winter three to five t/1000 m² (13.39 to 22.31 tons/acre) of water were used every two or three days. (in Besemer, 1980, in USDA, in National Agricultural Statistics Service, 2001).

About 33% of the surveyed growers used manure. Growers preferred chemical fertilization applied with drip irrigation over manure because of the cost and difficulty of obtaining manure. Soil analyses for fertilization were done by only 33% of the export growers.

Carnations were produced in Turkey without any heat. To prevent excessive temperature damage, shading was put on the greenhouses in May using lime and white lead. Greenhouse roses and gerberas were heated in the winter. Photoperiodic lighting was used from September to March in greenhouses where gypsophila was produced.

With the big capital investment needed in the production of cut flowers, Turkish export growers made agreements with contract growers for financial assistance. (Brumfield,1997).

In Uganda, the flower industry saw a gradual steady growth in the production of cut flowers. The flowers include roses, which represent about 70%, and chrysanthemums, which represent 25%. The remaining 5% are other potted plants. There has been an average annual growth of 20% for flower production. About 95% of flowers produced are exported and 5% is sold on the local market or thrown away at the farm if it is of poor quality (UEPB Profile on Cut flowers, 2005).

On a study conducted by the Food and Agriculture Organization of the United Nations (FAO), the agricultural sector mostly relies to micro and rural finance institutions to aid farmers in their production (Klein, et al., 1999).

Section 3: Problems and Issues:

In the Philippines, the high cost of structures like greenhouses, irrigation and post-harvest facilities are some of the major constraints to the producers of cut flowers. The availability of quality planting materials of which most come from abroad is sporadic. For new varieties/types of cut flowers like liliium, gerbera and calla, production technology is still insufficient. With new production technology comes the introduction of new agricultural chemicals, which are not readily available locally and work out very expensive when imported. This is coupled with high import duties on other inputs too.

Access to credit sources is also another major problem confronting the growers. The interest rates on loans offered by institutions are high. Growers of roses, chrysanthemums, gladiolus, orchids and anthuriums are in need of financial

support during the initial stages of production. Collateral requirements demanded by lending agencies are rarely met and the grower faces the dilemma of whether to continue cut flower growing or not.

On the part of the exporters, there is a shortage of cut flowers volume wise and quality wise. The small growers cannot compete with big growers. It will be easier to meet the quality, but the volume needs more attention (Rosario, 2005, in Brumfield, 1990, in Karingal Consultants, 1998).

The Australian Wild flower industry study shows that the key limitations to export growth did not primarily relate to demand. They relate to the availability of sufficient quality, the air freight capacity to get the product to market at times of peak air freight demand and the specific problems with the cost and loss of quality of quarantine inspection overseas.

The main constraint within the industry's controls are airport facilities, both in Australia and overseas, ability to manage the cool chain between grower and consumer, flow of new varieties and products, and internal transport and consolidation.

The serious constraints outside the industry's control are air freight capacity, including seasonal peaks and arrival times, the general economic environment and terms of trade, southern hemisphere low cost competition and possibly in certain areas - high technology and lower cost northern hemisphere competition, particularly use of new technology to control and extend flowering periods (Karingal Consultants, 1998).

The results of a study conducted by Ozkan, et al (1997) has also indicated that cut flower companies were not highly mechanized, but did use computerized accounting systems. Transportation of cut flowers to foreign markets was the largest expense item in the cut flower industry. Despite a high rate of unemployment, cut flower companies face difficulties in obtaining and keeping qualified employees. Managers tended not to use specific performance indicators such as sales per employee or sales per square foot relevant to the cut flower industry. The most common method for arranging cut flower export sales was contact with the importers. Contracts between firms which grew and exported flowers and smaller contract growers were common, but some problems existed concerning quality and financial obligations. Growers are using fewer commission contracts and are instead opting to sell on a fixed price basis. The main concerns raised by managers were related to increased competition, price-cutting and transportation expenses for export, training, and labor supply.

Section 4: Interventions:

The phenomenal growth of the Ornamental Horticulture Industry in the Philippines, in the last few years has led the Department of Agriculture to include the cut flower in its Key Commercial Crop Development Program (KCCDP) for 1996 – 2000. The Department of Trade and Industry adopted the ornamental crops as its "Export Winner" and the Department of Science and Technology recognized it in its Science and Technology for National Development (STAND 2000). Young as it is, the industry has shown its vital role in the local economy, and slowly it is penetrating the export market and emerging as a true global competitor.

The Federation of Cut flower and Ornamental Plant Growers, a non-stock, non-profit organization was formed in 1990 with the support of the Department of Agriculture to assist the government develop the cut flower industry. Its main thrust is service in the different fields where technical manpower support is lacking. The services are on consultation, skills and training, involvement in the marketing of the products of the growers; establish linkages with non-government organizations like USAID, JKICA and Dutch-Flamingo International (FMD). The Federation is involved in advocating new policies for the improvement of the industry and its members (Rosario, 2005).

Similarly, Shepherd's study (2005) stressed that horticultural marketing chain – linking with NGOs and extension services – is essential in increasing horticultural production and development of the domestic market.

A study by Botden (2005) developed a concept on Executive Flower Management to continuously monitor the gap between the actual measured and the desired target performance of the product, and process key performance indicators of flower supply chains from harvest to final sales. With the early detection of unacceptable difference between actual and target performance, efficient managerial actions can be realized. This all leads to more constant and reliable performance which enables the supply chain to serve more final customers with higher quality flowers.

Likewise, Ketelaar (2005) observed that Good Agricultural Practices (GAP) programmes, market access of farmers and field realities would increase agricultural produce and quality of products.

Synthesis:

As shown by the different literature and studies that have been reviewed, it is a fact that the cut flower industry in every part of the world started as a humble industry – the early 1980s marked the beginning of global trade for the cut flower industry. Although the floriculture industry is often seen as part of the ‘ornamentals’ industry, the floriculture, which involves production for the cut flower market, is distinct and is therefore treated separately. Studies have also shown that propagators apply the same practices and very much likely experience the same problems or concerns. Some studies have also revealed that both government and non-government agencies have intervened for the improvement of the said industry

In closing, it is appropriate to delineate how the present study is related to the studies/literature just cited. The similarity lies primarily in some of the operational, marketing and financial practices; and the problems encountered by the propagators and how these concerns could be solved through interventions for the betterment of the industry. Commonality with most of the studies conducted in the Philippines can also be in terms of the methodology employed and certain findings. This study as in most of the research projects is of the descriptive survey type with the questionnaire as the major data-gathering tool.

This paper is distinguishable from the studies reviewed in this chapter as it focuses exclusively on the cut flower growers of the province of Nueva Vizcaya, Philippines. This research therefore maintains that the study is not a duplicate of any other study that was conducted or is being conducted.

II. BODY OF ARTICLE

The province’s inherent strengths: ideal climate for year round cultivation, which therefore could attract prospective propagators/growers/breeders to engage in the cut flower venture in the province; capability to grow tropical and semi-tropical cut flowers; and the province’s geographical proximity and accessibility of roads to nearby provinces and key cities of Luzon; would henceforth give the province an edge in the domestic market. The opportunities that the industry pose has inspired the researcher to generate information on the profile of the cut flower growers of the province – in terms of their operational, marketing and financial practices then identified and analyzed the problems/constraints of issues affecting cut flower production. These current conditions and issues were used as bases in finding out the factors that affect the economic viability of the said industry in the province.

To answer the main problem of this research, the descriptive research was used as a major research design. The researcher used existing literature and studies found in newspaper clippings and journals in the library; gathered data in government agencies that are spearheading projects on the cut flower industry; browsed professional blogs, notes and information about the industry in the internet and at the same time conducted survey on the towns of Nueva Vizcaya that are engaged in the propagation of cut flowers. Data reporting is generally quantitative in the presentation of data.

III. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This Chapter focuses on the results of the study and consists of three major sections, namely:

Section 1: Profile of the Nueva Vizcaya Cut Flower growers;

Section 2: Operational, Marketing and Financial Practices of the Nueva Vizcaya cut flower growers; and

Section 3: Problems encountered by the Nueva Vizcaya cut flower growers in terms of Operation, Marketing and Financial aspects;

Section 4: Summary of Interventions addressing the Problems of the cut flower growers in terms of Operation, Marketing and Financial aspects

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Following a systematic patterns, the discussion of each section includes tabular and textual presentations of the collected data which are summarized in frequency counts and percentages, and were used in data analysis. Corroboration of this study's findings is attempted vis-à-vis the information from studies and scholarly works relevant to the present investigation.

Section 1: Profile of the Nueva Vizcaya Cut flower Growers

Personal Description:

The personal factors, which were deemed pertinent considering the purpose of the study, were: (1) civil status, (2) gender, and (3) age.

Table 1: Distribution of Nueva Vizcaya Cut Flower growers by Civil Status

| CIVIL STATUS | FREQUENCY | PERCENTAGE |
|--------------|-----------|---------------|
| Single | 5 | 11.63 |
| Married | 36 | 83.72 |
| Widowed | 2 | 4.65 |
| TOTAL | 43 | 100.00 |

It is evident from Table 1 that the Nueva Vizcaya cut flower growers were predominantly married, representing as much as 83.72 percent. The remaining proportion consisted of those who were single (11.63 percent) or were widowed (4.65 percent).

Table 2: Distribution of Nueva Vizcaya Cut Flower growers by Gender

| GENDER | FREQUENCY | PERCENTAGE |
|--------------|-----------|---------------|
| male | 18 | 41.86 |
| Female | 25 | 58.14 |
| TOTAL | 43 | 100.00 |

It appears from the preceding table that majority of the growers are women, who comprises 58.14 percent of the total number of respondents and the remaining are men (41.86 percent).

Table 3: Distribution of Nueva Vizcaya Cut Flower growers by Age

| AGE RANGE | FREQUENCY | PERCENTAGE |
|--------------------|-----------|---------------|
| 25-35 | 10 | 23.26 |
| 36-45 | 23 | 53.49 |
| 46-55 | 8 | 18.60 |
| 56-65 | 2 | 4.65 |
| TOTAL | 43 | 100.00 |
| <i>Lowest Age</i> | 31 | |
| <i>Highest Age</i> | 63 | |

Table 3 indicates that the age ranges 25-35 and 36-45 had the highest proportions (23.26 percent and 53.49 percent), aggregately comprising over half of the 43 respondents. Data further showed that some 18 percent belonged to ages 46-55, while almost 5 percent were from 56-65 years old.

From the same table it can be gleaned that the average cut flower growers of Nueva Vizcaya is already past the prime of their life. The youngest respondent was 31 years old and the oldest was 63 years old.

Professional Description:

The professional factors, which were deemed pertinent considering purpose of the study, were: (1) educational attainment, (2) occupation, and (3) trainings/seminars attended in the cut flower business for the past three years.

Table 4: Distribution of Nueva Vizcaya Cut Flower growers by Educational Attainment

| EDUCATIONAL ATTAINMENT | FREQUENCY | PERCENTAGE |
|------------------------|-----------|---------------|
| Elementary level | 8 | 18.60 |
| Elementary graduate | 2 | 4.65 |
| High school level | 7 | 16.28 |
| High school graduate | 3 | 6.98 |
| College level | 12 | 27.91 |
| College graduate | 11 | 25.58 |
| TOTAL | 43 | 100.00 |

With respect to academic degree, it can be gathered from table 4.4 that roughly five percent or 2 were elementary graduates and around 19 percent have not finished grade school. The table also shows that 16.28 percent did not go beyond high school, and almost seven percent finished high school, while the vast majority reached and/or were degree holders (totaling about 55%).

Table 5: Distribution of Nueva Vizcaya Cut Flower growers by Occupation

| OCCUPATION | FREQUENCY | PERCENTAGE |
|---------------------|-----------|---------------|
| Farmer | 23 | 53.49 |
| Business person | 9 | 20.93 |
| Government employee | 9 | 20.93 |
| Private employee | 2 | 4.65 |
| TOTAL | 43 | 100.00 |

Concerning Occupation, Table 5 reveals that nearly 55 percent of the growers were farmers while the others worked either with the government (20.93%) and private offices (4.65%). Almost 21 percent disclosed that they have their own businesses.

Table 6: Distribution of Nueva Vizcaya Cut Flower growers by Trainings/Seminars Attended in the Cut Flower Business for the past three years

| TRAININGS/SEMINARS ATTENDED | FREQUENCY | PERCENTAGE |
|-----------------------------|-----------|---------------|
| Post-harvest handling | 3 | 6.98 |
| Marketing Seminar | 2 | 4.65 |
| DENR-sponsored seminar | 5 | 11.63 |
| None | 33 | 76.74 |
| TOTAL | 43 | 100.00 |

Considering Table 6, the Nueva Vizcaya cut flower growers who attended post-harvest handling seminars tallied for only around seven percent, while those who attended seminars on how to go about marketing their products accounted roughly five percent. Almost 12 percent attended DENR-sponsored seminars and majority of the respondents claimed they have not attended any trainings/seminars concerning cut flowers for the past three years.

Follow up queries done by the researchers as to the reasons of absence of trainings/seminars by the growers bared that they believe they were more knowledgeable when it comes to growing cut flowers, than those sent by the Office of the Provincial Agricultural office (OPAG). The Post-harvest handling seminars that were attended by three of the respondents were held in Baguio city. The DENR-sponsored seminar some of the respondents attended was on the types of wood or fern slabs or trees that can be used as planting media.

Organizational Description:

The organizational factors which were considered related in view of the purpose of the study were: (1) the Employment of Laborers and Number of Workers Employed by the growers, and (2) Length of operation.

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Table 7: Distribution of Nueva Vizcaya Cut Flower growers by Employment of Workers and Number of Laborers Employed

| RESPONSE | # OF LABORERS EMPLOYED | FREQUENCY | PERCENTAGE |
|--------------|------------------------|-----------|---------------|
| Yes | Max of 3 laborers | 15 | 34.88 |
| No | | 28 | 65.12 |
| TOTAL | | 43 | 100.00 |

It appears from the preceding table that a substantial number of growers do not employ laborers in the propagation of cut flowers (65.12%) while almost 35 percent employ a maximum of 3 workers.

Most of the growers do not employ laborers because their green houses or cut flower farms are quite manageable. Those who employ workers in their farms are said to be employed themselves, as some of the workers have been working in either government or private institutions.

Table 8: Distribution of Nueva Vizcaya Cut Flower growers by Length of Operation

| LENGTH OF OPERATION | FREQUENCY | PERCENTAGE |
|---------------------|-----------|---------------|
| Less than a year | 5 | 11.63 |
| One to Three years | 8 | 18.60 |
| Four to Six years | 6 | 13.95 |
| Seven to Nine years | 7 | 16.28 |
| Ten years and above | 17 | 39.54 |
| TOTAL | 43 | 100.00 |

The data in Table 8 shows the distribution of the respondents according to the length of operation in the cut flower business. That is, almost 40 percent were in the business for more than 10 years. 16.28 percent has been operating for seven to nine years, 13.95 percent has been propagating for four to six years, 18.60 percent account for those in the business for one to three years and only approximately 12 percent are new to the business.

Section 2: Operational, Marketing and Financial Practices of the Nueva Vizcaya Cut flower Growers

This section delineates the specific practices assumed by the growers of Nueva Vizcaya in each of the three aspects covered in this study. Their practices cover Operational, Marketing and Financial position.

Operational Practices:
Table 9: Distribution of Nueva Vizcaya Cut Flower growers by Types of Cut flowers Propagated

| CUT FLOWER TYPE | FREQUENCY | PERCENTAGE |
|-----------------|-----------|------------|
| Orchids | 11 | 18.64 |
| Roses | 3 | 5.08 |
| Chrysanthemum | 14 | 23.73 |
| Gladiola | 8 | 13.56 |
| Anthurium | 18 | 30.51 |
| Baby's Breath | 3 | 5.08 |
| Aster | 2 | 3.40 |

*Multiple responses

Table 9 indicates that relative to the types of cut flowers propagated the highest percentage of the respondents cultivated Anthurium (30.51%), Chrysanthemums and orchids follow next (23.73% and 18.64% respectively). Gladiolas are grown by around 14 percent, and a total of almost 14 percent also propagated roses, baby's breath and aster.

Table 10: Distribution of Nueva Vizcaya Cut Flower growers by Varieties of Cut flower Propagated by Nueva Vizcaya growers and the Total Number of Mother Plants

| CUT FLOWER TYPE | NAME OF VARIETIES PRODUCED | TOTAL NUMBER OF MOTHER PLANTS |
|-----------------|---|-------------------------------|
| Orchids | Vanda, Dendrobium, Cattleya, Cymbidium, Mokara, Kagawara, Native species & Nelthius crosses | 25,800 |
| Roses | Holland roses, American Roses and Floribunda | 23, 000 |
| Chrysanthemum | Malaysian mums, Reagan (all colors), Fiji, Apricot, Kermit | 33,550 |
| Gladiola | Native, Japanese red and fushia pink | 5,930 |
| Anthurium | Nitta, Kaumana, Orange Tina, Obaque, Tulip, Butterfly, Chanlier and American Giant | 10,460 |
| Baby's Breath | Native | 350 |
| Aster | Native (White, Violet) | 700 |

As can be gathered from Table 10, the Chrysanthemum has the highest number of mother plants grown (33,550), although there are more growers of Anthurium (see Table 4.9 for comparison on number of growers). This could be attributed to the fact that a lot of Anthurium propagators grow these plants on backyard gardens only, while Chrysanthemums are propagated in greenhouses. Orchids have a total number of 25,800 mother plants. Roses have a total number of 23,000 mother plants. Gladiola has a total of 5,930 mother plants, Aster has a total of 700 mother plants only and Baby's breath has a total of 350 mother plants.

Table 11: Distribution of Nueva Vizcaya Cut flower growers by Propagating of Cut flowers in one Area

| RESPONSE | FREQUENCY | PERCENTAGE |
|--------------|-----------|---------------|
| Yes | 43 | 100.00 |
| No | 0 | 0 |
| TOTAL | 43 | 100.00 |

All of the Nueva Vizcaya Cut flower growers propagate different types of cut flowers in one area only.

Table 12: Distribution of Nueva Vizcaya Cut flower growers by Area of Propagation

| LENGTH OF OPERATION | FREQUENCY | PERCENTAGE |
|--------------------------|-----------|---------------|
| Less than 200 sq. meters | 8 | 18.60 |
| 201 to 400 sq. meters | 3 | 6.98 |
| 401 to 600 sq. meters | 9 | 20.93 |
| Over 600 sq. meters | 23 | 53.49 |
| TOTAL | 43 | 100.00 |

From Table 12, it can be gleaned that majority of the growers propagated cut flowers in an area of more than 600 square meters (53.49 percent). This could possibly be credited to the fact that they grow different types of cut flowers in a land area of 401 to 600 square meters, while one-fourths of the respondents grow cut flowers in an area of not more than 400 square meters.

Table 13: Distribution of Nueva Vizcaya Cut flower growers by Planting Media Used

| CUT FLOWER TYPE | PLANTING MEDIA USED | FREQUENCY | PERCENTAGE |
|-----------------|---------------------|-----------|------------|
| Orchids | Driftwood | 6 | 54.55 |
| | Fern slab | 11 | 100.00 |
| | Fern trunk | 7 | 63. 64 |
| | Pots | 5 | 45.45 |
| | Charcoal | 2 | 18.18 |
| Anthuriums | By Hanging | 11 | 100.00 |
| | Pots | 18 | 100.00 |
| Roses | Plot/Ground | 14 | 77.78 |
| | Plot/Ground | 3 | 100.00 |
| | Compost | 3 | 100.00 |

| | | | |
|----------------|-------------|----|--------|
| Chrysanthemums | Plot/Ground | 14 | 100.00 |
| | Compost | 5 | 35.71 |
| Gladiola | Plot/Ground | 8 | 100.00 |
| Baby's Breath | Plot/Ground | 3 | 100.00 |
| Aster | Plot/Ground | 2 | 100.00 |

*Multiple responses

As mentioned earlier, the Nueva Vizcaya cut flower growers propagated different kinds of cut flowers. Table 13 displays information on the distribution of the respondents in the kinds of Planting Media used.

The table thus reveals that all Orchid growers either hang or plant their orchids on fern slabs, 63.64 percent use fern trunks, 45.45 percent use pots and only 18.18 percent use charcoal. All Anthodium growers on the other hand, plant in pots while 77.78 percent also either directly planted on the ground and on Chrysanthemums are also either directly planted on the ground and on composts; Gladiola, Baby's Breath and Aster are directly planted on the ground.

Table 14: Distribution of Nueva Viscaya Cut flower growers by Acquired Farm Equipment and Buildings

| FARM EQUIPMENT AND BUILDINGS ACQUIRED | FREQUENCY* | PERCENTAGE |
|---------------------------------------|------------|------------|
| Greenhouse | 14 | 32.56 |
| Net covered garden | 8 | 18.60 |
| Nursery | 18 | 41.86 |
| Garden shed | 11 | 25.58 |
| Sprayer (Manual) | 38 | 88.37 |
| Power spray | 29 | 67.44 |
| Automatic Sprinkler | 2 | 4.65 |
| Manual Sprinkler | 27 | 62.79 |
| Grab hoe | 35 | 81.40 |
| Cutter | 33 | 76.74 |
| Spade | 36 | 83.72 |

*Multiple responses

Table 14 reveals that almost 42 percent of the growers have built nurseries, 32.56 percent have greenhouse, and 25.58 percent have garden sheds, while roughly 19 percent have net covered gardens.

In watering their plants, most of the growers have acquired manual sprayer (88.37 percent), power spray (67.44 percent), Manual sprinkler (62.79 percent) and automatic sprinkler (4.67 percent).

The tools used were the spade, which comprises nearly 84 percent of the tools used by the total respondents; the grab hoe and the cutter (81.40 percent and 76.74 percent respectively).

Table 15: Distribution of Nueva Vizcaya Cut flower growers by the Source of Planting Materials

| CUT FLOWER TYPE | PLANTING MEDIA USED | FREQUENCY* | PERCENTAGE |
|-----------------|---------------------|------------|------------|
| Orchids | Top cuts | 11 | 100.00 |
| Anthuriums | Suckers | 18 | 100.00 |
| Roses | Budding | 3 | 100.00 |
| | Grafting | 1 | 33.33 |
| | Marcotting | 1 | 33.33 |
| Chrysanthemums | Suckers | 14 | 100.00 |
| Gladiola | Corms | 8 | 100.00 |
| | Cormels | 6 | 75.00 |
| Baby's breath | Seedlings | 3 | 100.00 |
| Aster | Seedlings | 2 | 100.00 |

*Multiple responses

In Table 15, it can be noted that all orchid growers made use of top cuts in its propagation. Anthurium and Chrysanthemum growers conversely used suckers. Rose growers alternatively used budding, grafting and marcotting.

Gladiola growers made use of either corms or cormels; while Baby’s Breath and Aster growers made use of seedlings in their propagation.

Table 16: Distribution of Nueva Vizcaya Cut Flower growers by Place of Acquisition of Seeds

| PLACE OF ACQUISITION OF SEEDS | FREQUENCY | PERCENTAGE |
|---|-----------|------------|
| From other propagators within the area | 34 | 79.17 |
| From other propagators outside the province | 28 | 65.12 |
| From Commercial Gardens | 3 | 6.98 |
| None | 11 | 25.58 |

It is evident from Table 16 that 79.17 percent obtain seeds from propagators within their area if there are no available seeds that could be used for planting. 65.12 percent acquire seeds outside the province, mostly from Benguet and Baguio city, while nearly seven percent purchase it from commercial gardens. Those who disclosed that they did not acquire seeds from others accounted for almost 26 percent of the total respondents

Table 17: Distribution of Nueva Vizcaya Cut Flower growers by Farm Practices

| CUT FLOWER TYPE | FARM PRACTICES | FREQUENCY | PERCENTAGE |
|-----------------|---|-----------|------------|
| Orchids | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 11 | 100.00 |
| Anthuriums | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 18 | 100.00 |
| | Weeding once a day | 6 | 33.33 |
| | Weeding once in 2 months | 12 | 66.67 |
| Roses | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 3 | 100.00 |
| | Weeding once a day | 2 | 66.67 |
| | Weeding once in 2 months | 1 | 33.33 |
| | Pruning once in a cropping | 0 | 0.00 |
| | Pruning twice in a cropping | 3 | 100.00 |
| Chrysanthemums | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 14 | 100.00 |
| | Weeding once a month | 10 | 71.43 |
| | Weeding twice a month | 4 | 28.57 |
| | Pinching once in 3 mos. | 0 | 0 |
| | Pinching twice in 3 months | 14 | 100.00 |
| | Disbudding once in 3 mos. | 2 | 14.28 |
| | Disbudding twice in 3 mos. | 12 | 93.72 |
| | Stem supporting is done as plants grows | 6 | 42.86 |
| | Stem supporting is done as needed | 8 | 57.14 |
| Gladiola | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 8 | 100.00 |
| | Weeding once a month | 6 | 75.00 |
| | Weeding twice a month | 2 | 25.00 |
| Baby’s Breath | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 3 | 100.00 |
| | Weeding once a month | 3 | 100.00 |
| | Weeding twice a month | 0 | 0.00 |
| Aster | Watering once a day | 0 | 0.00 |
| | Watering twice a day | 2 | 100.00 |
| | Weeding once a month | 2 | 100.00 |
| | Weeding twice a month | 0 | 0.00 |

Table 17 that the Nueva Vizcaya Cut Flower growers practice watering of plants twice a day. 66.67 percent of Anthurium growers weed their plants once in two months and the rest of the Anthurium growers weed their plants once a month.

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For roses, 66.67 percent weed their plants once a month, while the remaining 33.33 percent weed only once in two months.

About 72 percent of Chrysanthemum growers weed their plants once a month and 28.57 percent weed their plants once in two months. All the growers do pinching twice in a cropping; the last is done to induce the formation of buds. Disbudding, which is practiced it once in three months by almost 93 percent while the remaining 27 percent practiced it once in three months, is the removal of unwanted buds and auxiliary shoots, the center bud is maintained to grow into big fowlers. Stem supporting is practiced with the use of a rope tied to both ends of the plot, and is pulled up to support the plants from stem sagging – 57.14 percent of the growers support the stems when they see that the stems have to be supported, while almost 45 percent practice stem support as the plant is growing.

Seventy five percent of gladiola growers weed their plants once a month; the other 25 percent weed their plants twice a month. For Baby’s Breath and aster growers, they all weed their plants once a month.

Table 18: Distribution of Nueva Vizcaya Cut Flower growers By Planting & Harvest Season and Volume of Harvest

Table 18.1: Orchids

| PRACTICE | FREQUENCY | PERCENTAGE |
|--------------------------|-----------|------------|
| Planting Season | | |
| a. All year round | 11 | 100.00 |
| Harvest Season | | |
| a. Quarterly | 2 | 18.18 |
| b. Weekly | 6 | 54.55 |
| c. Everyday | 3 | 36.36 |
| Volume of Harvest | | |
| a. 10-20 dozens per week | 7 | 63.63 |
| b. 20-40 dozens per week | 4 | 36.37 |

Table 18.1 shows that all Orchid growers agree that there is no specific date of planting season unlike other plants. Inflorescences are harvested weekly by 54.55 percent of the respondents, 36.36 percent that they gather flowers every day, while only 18.18 percent say that they harvest flowers quarterly or every four months. Volume of harvest for orchids range from 10 to 20 dozens per week according to 63.63 percent of the growers, while the remaining 36.37 percent harvest 20 to 40 dozens of cut flowers every week.

Table 18.2: Roses

| PRACTICE | FREQUENCY | PERCENTAGE |
|----------------------------|-----------|------------|
| Planting Season | | |
| a. Every six months | 3 | 100.00 |
| Harvest Season | | |
| a. Weekly | 1 | 33.33 |
| b. Everyday | 2 | 66.67 |
| Volume of Harvest | | |
| a. 101-200 dozens per week | 3 | 100.00 |

Data in Table 18.2 reveals that Rose growers plant every six months. Harvest season starts six months after planting and that 66.67 percent of the growers gather roses every day, while 33.37 percent harvest roses weekly; all harvest ranging from 101-200 dozens per week.

Table 18.3: Chrysanthemum

| PRACTICE | FREQUENCY | PERCENTAGE |
|-----------------------------|-----------|------------|
| Planting Season | | |
| a. Every six months | 6 | 42.86 |
| b. Every Three months | 8 | 57.14 |
| Harvest Season | | |
| a. Quarterly | 14 | 100.00 |
| Volume of Harvest | | |
| a. 10-100 dozens per week | 3 | 21.43 |
| b. 101- 200 dozens per week | 4 | 28.57 |
| c. 201-300 dozens per week | 7 | 50.00 |

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It can be noted in Table 18.3 that 57.14 percent plant chrysanthemum every three months and that 42.86 percent plant only every six months. According to 6 of the respondents, they plant chrysanthemums only when it is near the peak season to as so easily market their produce and alternate planting vegetables on their greenhouses instead. The growers agree though that harvest season is done every three months or quarterly. One-half of the growers harvest around 201 to 300 dozens per week, 28.57 percent gather around 101 to 200 dozens per week, while 21.43 percent gather around 10 to 100 dozens per week.

Table 18.4. Gladiola

| PRACTICE | FREQUENCY | PERCENTAGE |
|-------------------------------|-----------|------------|
| Planting Season | | |
| a. Twice a year (Aug. & Nov.) | 5 | 62.50 |
| b. Every three months | 3 | 37.50 |
| Harvest Season | | |
| a. Quarterly | 8 | 100.00 |
| Volume of Harvest | | |
| a. 10 to 100 dozens per week | 6 | 75.00 |
| b. 101-200 dozens per week | 2 | 25.00 |

Table 18.4 indicates that 62.50 percent of gladiola growers plant only twice a year, during the months of August and November, while 37.50 percent plant every three months. Since it takes only three months to be able to gather flowers of gladiolas, all the respondents agreed that harvest season is quarterly. The volume of harvest according to three-fourths of the growers ranges from 10 to 100 dozens per week, while the remaining 25 percent gather around 101 to 200 dozens per week.

Table 18.5. Anthuriums

| PRACTICE | FREQUENCY | PERCENTAGE |
|-----------------------------|-----------|------------|
| Planting Season | | |
| a. All year round | 8 | 44.44 |
| b. Every six months | 5 | 27.78 |
| c. Every three months | 5 | 27.78 |
| Harvest Season | | |
| a. Daily | 18 | 100 |
| Volume of Harvest | | |
| a. 10 - 30 dozens per week | 10 | 55.55 |
| b. 31 - 60 dozens per week | 3 | 16.67 |
| c. 61 – 90 dozens per week | 3 | 16.67 |
| d. 91 – 120 dozens per week | 2 | 11.11 |

As can be gathered from Table 18.5, 44.44 percent of Anthurium growers said that planting season is all year round, 27.78 percent that planting season is every six month, while another 27.78 percent agree that planting season is every three months. Anthuriums are diligent bloomers; harvest could be done every day according to all the Anthurium growers. Most of the Anthuriums growers propagate on their backyards only so there is a small volume of harvest, 55.55 percent gather around 10 to 30 dozens of flowers only in a week, 16.67 percent gather around 31 to 60 dozens a week, another 16.67 percent gather 61 to 90 dozens per week while only 11.11 percent gather around 91 to 122 dozens per week. Those who harvest more than 60 dozens per week have a bigger propagation area.

Table 19: Distribution of Nueva Vizcaya Cut flower growers by Mode of Fertilizer Application

| RESPONSE | FREQUENCY* | PERCENTAGE |
|-------------------|------------|------------|
| Basal Application | 28 | 80.00 |
| Foliar Spraying | 22 | 62.86 |

*Multiple responses

Of the growers who applied fertilizers, 80 percent used the basal application, while 62.86 percent made use of foliar spraying.

Table 20: Distribution of Nueva Vizcaya Cut flower growers By kind of Fertilizers Used

| KIND OF FERTILIZERS | FREQUENCY* | PERCENTAGE |
|-----------------------|------------|------------|
| Organic Fertilizers | 10 | 28.57 |
| Inorganic Fertilizers | 29 | 82.86 |

Multiple responses*

Table 20 indicates that 82.86 of those who are using fertilizers made use of inorganic fertilizers, while 28.57 percent made use of organic Fertilizers.

Table 21: Distribution of Nueva Vizcaya Cut flowers growers By Application of Pesticides, Insecticides, Fungicides and Herbicides

| RESPONSE | FREQUENCY | PERCENTAGE |
|--------------|-----------|---------------|
| Yes | 43 | 100.00 |
| No | 0 | 0.00 |
| Total | 43 | 100.00 |

Table 21 implies that all the Cut flower growers of Nueva Vizcaya applied chemical inputs in their propagation.

Table 22: Distribution of Nueva Vizcaya Cut flower growers by Frequency of application of Fertilizers, Pesticides, Insecticides, Fungicides and Herbicides

Table 22.1. Orchids

| | FERQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizer | | |
| a. Thrice a week | 8 | 72.73 |
| b. Twice a month | 3 | 27.27 |
| Pesticides | | |
| a. Once a month | 2 | 18.19 |
| b. Only when there is infestation | 9 | 81.81 |
| Insecticides | | |
| a. Only when there is infestation | 11 | 100.00 |
| Fungicides | | |
| a. Twice a week | 3 | 27.27 |
| b. Twice a month | 8 | 72.73 |
| Herbicides | 0 | 0.00 |

The data in table 22.1 shows that 72.73 percent of the 11 Orchid growers applied fertilizer three times a week, while 27.27 percent applied only two times a month. 81.81 percent also applied pesticides when there is infestation only, while 18.19 percent applied pesticides. All the growers however, was noted that insecticides were applied only during infestation. Fungicides on the other hand, were used by 72.73 percent of the Orchid growers twice a month, while almost 28 percent applied fungicides twice a week. None of the Orchid growers though used herbicides

Table 22.2. Roses

| | FREQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizer | | |
| a. Twice a month | 2 | 100.00 |
| Pesticides | | |
| a. Only when there is infestation | 3 | 100.00 |
| Insecticides | | |
| a. Only when there is Infestation | 3 | 100.00 |
| Fungicides | 0 | 0.00 |
| Herbicides | 0 | 0.00 |

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Table 22.2 illustrates that Rose growers who used fertilizers, applied it twice a month and made use of pesticides and insecticides only when there is infestation. Nine of the growers so far, used fungicides and herbicides.

Table 22.3. Chrysanthemums

| | FREQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizer | | |
| a. Once a month | 4 | 40.00 |
| b. Twice a month | 6 | 60.00 |
| Pesticides | | |
| a. Once a month | 3 | 21.43 |
| b. Only when there is infestation | 11 | 78.57 |
| Insecticides | | |
| a. Once a month | 3 | 21.43 |
| b. Only when there is infestation | 11 | 78.57 |
| Fungicides | | |
| a. Once a week | 14 | 100.00 |
| Herbicides | 0 | 0.00 |

Table 22.3 shows 60 percent of the fertilizer users among the Chrysanthemum growers applied fertilizers twice a month, while 40 percent applied once a month. 78.57 percent applied pesticides and insecticides only when there is infestation, while 21.43 percent applied both pesticides and insecticides are not used by the growers.

Table 22.4. Gladiola

| | FREQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizer | | |
| a. Twice a week | 2 | 100.00 |
| Pesticides | | |
| a. Once a month | 3 | 37.50 |
| b. Only when there is infestation | 5 | 62.50 |
| Insecticides | | |
| a. Once a month | 3 | 37.50 |
| b. Only when there is infestation | 5 | 62.50 |
| Fungicides | | |
| a. Twice a month | 8 | 100.00 |
| Herbicides | 0 | 0.00 |

The figures in Table 22.4 reveal that all the fertilizer users among the Gladiola growers apply fertilizers twice a week. 62.50 percent applied pesticides and insecticides only when there is infestation, while 37.50 percent applied both once a month. Fungicides were also applied twice a month by all the growers. Herbicides were not however, applied.

Table 22.5. Anthuriums

| | FREQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizers | | |
| a. Twice a month | 10 | 100.00 |
| Pesticides | | |
| a. Only when there is infestation | 16 | 100.00 |
| Insecticides | | |
| a. Only when there is infestation | 16 | 100.00 |
| Fungicides | | |
| a. Twice a month | 4 | 22.22 |
| b. Twice a month | 12 | 78.78 |
| Herbicides | 0 | 0.00 |

Figures from Table 22.5 shows that 100 percent of the fertilizer users among the Anthurium growers applied fertilizers twice a month; and that the entire growers applied both pesticide and insecticides only when there is infestation. 78.78

percent applied fungicides twice a month, while 22.22 percent applied it once a week. None of the growers applied herbicides.

Table 22.6. Baby’s Breath

| | FREQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizers | 0 | 0.00 |
| Pesticides | | |
| a. Only when there is infestation | 3 | 100.00 |
| Insecticides | | |
| a. Only when there is infestation | 3 | 100.00 |
| Fungicides | | |
| a. Twice a month | 3 | 100.00 |
| Herbicides | 0 | 0.00 |

Table data in Table 22.6 show that Baby’s Breath growers did not use fertilizers and herbicides, although every one of them applied pesticides and insecticides during infestation. All the growers also applied fungicides twice a month.

Table 22.7 Aster

| | FREQUENCY | PERCENTAGE |
|-----------------------------------|-----------|------------|
| Fertilizers | 0 | 0.00 |
| Pesticides | | |
| a. Only when there is infestation | 2 | 100.00 |
| Insecticides | | |
| a. Only when there is infestation | 2 | 100.00 |
| Fungicides | | |
| a. Once a month | 2 | 100.00 |
| Herbicides | 0 | 0.00 |

Table 22.7 illustrate that Aster growers did not apply fertilizers and herbicides. Pesticides and insecticides are applied when there is infestation only, while fungicides were applied twice a month.

Table 23: Distribution of Nueva Vizcaya Cut flower growers By Method of Prolonging the Vase life of Cut flowers

| METHOD | FREQUENCY* | PERCENTAGE |
|-------------------------------|------------|------------|
| Vitro Opening | 0 | 0.00 |
| Placing in water | 43 | 100.00 |
| Pulsing | 0 | 0.00 |
| Cushioning | 0 | 0.00 |
| Placing Lamps above the Plant | 14 | 32.56 |
| Using Paper Pillows | 0 | 0.00 |

*Multiple responses

The data in table 23 reveal that the entire growers of Nueva Vizcaya placed gathered cut flowers in water to prolong their vase life. Fourteen or 32.56 percent placed lamps above the plant.

Table 24: Distribution of Nueva Cut flower growers By Manner of Waste Disposal

| MANNER OF WASTE DISPOSAL | FREQUENCY | PERCENTAGE |
|---|-----------|------------|
| Throw them anywhere | 0 | 0.00 |
| Drying unsold flowers to be used as Fertilizers | 43 | 100.00 |

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The information in Table 24 present that all the cut growers of Nueva Vizcaya practice proper waste disposal management by drying unsold cut flowers to be used as fertilizers or compost.

Marketing Practices:

Table 25: Distribution of Nueva Vizcaya Cut flower growers By Average Farm Gate Price of Cut flowers during the Regular Season

| CUT FLOWER TYPE AND FARM GATE PRICE | FREQUENCY | PERCENTAGE |
|-------------------------------------|-----------|------------|
| Orchids | | |
| a. 10 pesos per piece | 6 | 54.55 |
| b. 15 pesos per piece | 5 | 45.45 |
| Roses | | |
| a. 25 pesos per piece | 2 | 67.67 |
| b. 35 pesos per piece | 1 | 33.33 |
| Chrysanthemums | | |
| a. 50 pesos per piece | 5 | 35.71 |
| b. 60 pesos per piece | 6 | 42.86 |
| c. 70 pesos per piece | 3 | 21.43 |
| Gladiola | | |
| a. 15 pesos per piece | 3 | 37.50 |
| b. 20 pesos per piece | 5 | 63.50 |
| Anthuriums | | |
| a. 50 pesos per piece | 10 | 55.55 |
| b. 60 pesos per piece | 5 | 27.78 |
| c. 70 pesos per dozen | 3 | 16.67 |
| Baby's Breath | | |
| a. 10 pesos per piece | 2 | 67.67 |
| b. 15 pesos per piece | 1 | 33.33 |
| Aster | | |
| a. 10 pesos per piece | 1 | 50.00 |
| b. 15 pesos per piece | 1 | 50.00 |

Table 25 shows that the average farm gate price per piece of orchids according to 54.55 percent of Orchid growers is 10 pesos, while almost 46 percent sold their orchids at 15 pesos per piece.

The same table would show that 67.67 percent sold roses at 25 pesos per dozen, while one respondent or 33.33 percent of the rose growers sold it at an average of 35 pesos per dozen during the regular season.

Almost 43 percent of Chrysanthemum growers sold their produce at 60 pesos per dozen, 35.71 percent sold it an average of 50 pesos per dozen, while roughly 22 percent sold it an average of 70 pesos per dozen.

It can also be inferred from the same table that almost 64 percent sold Gladiolas an average of 20 pesos per dozen, while about 36 percent sold it at 15 pesos per dozen.

The table moreover shows that majority of Anthurium growers marketed their produce at 50 pesos per dozen, 27.78 percent sold it at 60 pesos per dozen, while 16.67 percent sold it at 70 pesos per dozen. Fifty percent of the Aster growers sold their produce at 10 pesos per dozen, while another half sold it at 15 pesos per dozen.

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Table 26: Distribution of Nueva Vizcaya Cut flower growers by Average Farm Gate Price of Cut flowers during the Peak Season

| CUT FLOWER TYPE AND FARM GATE PRICE | FREQUENCY | PERCENTAGE |
|-------------------------------------|-----------|------------|
| Orchids | | |
| a. 15 pesos per piece | 3 | 27.27 |
| b. 20 pesos per piece | 8 | 72.73 |
| Roses | | |
| a. 70 pesos per dozen | 1 | 33.33 |
| b. 80 pesos per dozen | 2 | 67.67 |
| Chrysanthemums | | |
| a. 80 pesos per dozen | 2 | 14.28 |
| b. 90 pesos per dozen | 6 | 42.86 |
| c. 100 pesos per dozen | 6 | 42.86 |
| Gladiola | | |
| a. 20 pesos per dozen | 3 | 36.50 |
| b. 25 pesos per dozen | 5 | 63.50 |
| Anthuriums | | |
| a. 80 pesos per dozen | 2 | 11.11 |
| b. 90 pesos per dozen | 10 | 55.56 |
| c. 100 pesos per dozen | 6 | 33.33 |
| Baby's Breath | | |
| a. 15 pesos per dozen | 1 | 33.33 |
| b. 20 pesos per dozen | 2 | 67.67 |
| Aster | | |
| a. 15 pesos per dozen | 1 | 50.00 |
| b. 20 pesos per dozen | 1 | 50.00 |

Figures from Table 26 indicate that 72.73 percent of the Orchid growers sold the gathered flowers at 20 pesos per piece during the peak season, as almost 28 percent sold it at an average of 15 pesos per piece.

Two-thirds of Rose growers sold their produce at 80 pesos per dozen, while another thirds sold it at 70 pesos per dozen.

Almost 43 percent of those who grew Chrysanthemum sold their harvest at 100 pesos per dozen, the same percentage sold it at 90 pesos per dozen, and 11.11 percent sold it at 80 pesos during the peak season.

Again, Table 26 shows that 63.5 percent sold inflorescence of Gladiolas at an average of 25 pesos per dozen, another 36.5 percent sold it at 20 pesos per dozen.

Furthermore, the data above indicate that 55.56 percent sold Anthuriums at 90 pesos per dozen, 33.33 percent traded it at 100 pesos per dozen, while the remaining 11.11 percent sold it at 80 pesos per dozen.

About 68 percent of Baby's breath growers marketed their yield during the peak season at 20 pesos per dozen, while 33.33 percent sold it at 15 pesos per dozen.

An average price of 20 pesos per dozen are sold by 50 percent of Aster propagators during the peak season, as another 50 percent traded it at 15 pesos per dozen.

Table 27: Distribution of Nueva Vizcaya Cut flower growers by Factors Affecting the Price of Cut flowers

| FACTORS AFFECTING PRICE OF CUT FLOWERS | FREQUENCY | PERCENTAGE |
|---|-----------|------------|
| Change in the Price of Planting Media (seeds) | 0 | 0.00 |
| Change in the Price of raw materials | 0 | 0.00 |
| Change in the Price of equipment | 5 | 11.63 |
| Change in workers' wage | 0 | 0.00 |
| Change in weather | 0 | 0.00 |
| Difference in the quality of Produce | 38 | 88.37 |
| Running price of Market | 43 | 100.00 |

* Multiple responses

Data in Table 27 reveal that price of cut flowers change because of the running price of the market, although 88.37 percent of the growers claimed that price also changes because of the difference in the quality of produce or yield, while almost 12 percent averred that prices vary because of the change in the price of raw materials.

Table 28: Distribution of Nueva Vizcaya Cut flower growers by Mode of Packing Cut flower

| MODE OF PACKING CUT FLOWERS | FREQUENCY* | PERCENTAGE |
|-----------------------------|------------|------------|
| Baskets | 0 | 0.00 |
| Newspapers | 40 | 93.02 |
| Wooden Crates | 3 | 6.98 |
| Driftwoods | 0 | 0.00 |
| Cartons | 43 | 100.00 |

* Multiple responses

Table 28 indicates that all the growers made use of cartons as a medium of packing cut flowers that are to be sold outside the cut flower farms, some 93 percent of the respondents used newspapers in packing their harvest, as 6.98 percent used wooden crates.

Table 29: Distribution of Nueva Vizcaya Cut flower growers by Classifying Cut flowers

| MODE OF PACKING CUT FLOWERS | FREQUENCY* | PERCENTAGE |
|-----------------------------|------------|---------------|
| No | 0 | 0.00 |
| Yes | 43 | 100.00 |
| TOTAL | 43 | 100.00 |

The data in Table 29 shows that Nueva Vizcaya growers classify the harvested flowers according to stem size, flower size and flower variety (refer to succeeding table).

Table 30: Distribution of Nueva Vizcaya Cut flower growers by Type of Classification of Cut flower

| CUT FLOWER TYPE AND FARM GATE PRICE | FREQUENCY | PERCENTAGE |
|-------------------------------------|-----------|------------|
| Orchids | | |
| a. Variety | 11 | 100.00 |
| b. Flower size | 3 | 27.27 |
| Roses | | |
| a. Stem size | 3 | 100.00 |
| b. Flower size | 3 | 100.00 |
| c. Variety | 3 | 100.00 |
| Chrysanthemums | | |
| a. Variety | 14 | 100.00 |
| b. Flower size | 14 | 100.00 |
| Gladiola | | |
| a. Variety | 8 | 100.00 |
| Anthuriums | | |
| a. Variety | 18 | 100.00 |
| b. Flower size | 7 | 38.89 |
| Baby's Breath | - | - |
| Aster | - | - |

Table 30 reveals that all Nueva Vizcaya cut flower growers classify their harvest according to variety, flower size and stem size for roses. However, only 27.27 percent classify Orchids and 38.89 percent of Anthuriums classify these plants according to flower size.

Table 31: Distribution of Nueva Vizcaya Cut flower growers by Cut flower Buyers or Customers

| MODE OF PACKING CUT FLOWERS | FREQUENCY* | PERCENTAGE |
|-----------------------------|------------|------------|
| Hobbyists | 0 | 0.00 |
| Individual Consumers | 38 | 88.37 |
| Wholesalers | 40 | 93.02 |
| Florists | 28 | 65.12 |
| Institutional buyers | 22 | 51.16 |

* Multiple responses

Table 31 shows that cut flower growers sell their produce to wholesalers, individual consumers, florists and institutional buyers (with percentage of 93.02 percent, 88.37 percent, 65.12 percent and 51.16 percent respectively).

Table 32: Distribution of Nueva Vizcaya Cut flower growers by Place of Selling Cut flowers

| PLACE OF SELLING CUT FLOWERS | FREQUENCY* | PERCENTAGE |
|------------------------------|------------|------------|
| Trading Centers | 12 | 27.91 |
| Markets | 39 | 90.70 |
| Restaurants | 0 | 0.00 |
| Commercial Gardens | 0 | 0.00 |
| Cooperatives | 8 | 18.60 |
| Hotels | 0 | 0.00 |
| Flower shops | 38 | 88.37 |
| Government offices | 10 | 23.26 |

*Multiple responses

Table 32 shows that 90.70 percent sold their produce at markets, 88.37 percent at flower shops, 27.91 percent at trading centers, 23.26 percent at government offices and roughly 19 percent sold the gathered cut flowers at cooperatives.

Financial Practices:

Table 33: Distribution of Nueva Vizcaya Cut flower growers by Primary Source of Financial the Cut flower Business

| PRIMARY SOURCE OF FINANCE | FREQUENCY | PERCENTAGE |
|---------------------------|-----------|---------------|
| Savings | 15 | 37.88 |
| Loan Sharks | 0 | 0.00 |
| Loan from Cooperatives | 18 | 41.86 |
| Bank Loans | 0 | 0.00 |
| Lending Companies | 5 | 11.63 |
| Contract growers | 5 | 11.63 |
| TOTAL | 43 | 100.00 |

The information in Table 33 indicates that growers primarily got their financial resources from loans from cooperatives, from their own savings, from lending companies and from contract growers (with percentages of 41.86 percent, 34.88 percent, 11.63 percent, and 11.63 percent respectively). It is interesting to note that no one among them obtained funds from loan sharks and bank loans.

Table 34: Distribution of Nueva Vizcaya Cut flower growers by Additional Source of Financing the Cut flower Business

| PRIMARY SOURCE OF FINANCE | FREQUENCY | PERCENTAGE |
|---------------------------|-----------|---------------|
| Savings | 8 | 18.60 |
| Loan Sharks | 0 | 0.00 |
| Loan from Cooperatives | 35 | 81.40 |
| Bank Loans | 0 | 0.00 |
| Lending Companies | 0 | 0.00 |
| TOTAL | 43 | 100.00 |

Table 34 reveals that almost 82 percent of the Nueva Vizcaya Cut flower growers ran to cooperatives for loans in case of unexpected expenses on their cut flower business, the rest, which comprises almost 19 percent took it from their savings.

Table 35: Distribution of Nueva Vizcaya Cut flower growers by Amount of Capital Investment

| RANGE OF AMOUNT OF CAPITAL INVESTMENT | FREQUENCY | PERCENTAGE |
|---------------------------------------|-----------|---------------|
| Below 10,000 pesos | 4 | 9.30 |
| Php10,000 – Php20,000 | 21 | 48.84 |
| Php20,001 – Php30,000 | 7 | 16.28 |
| Php30,001 – Php40,000 | 8 | 18.60 |
| Php40,001 – Php50,000 | 3 | 6.98 |
| TOTAL | 43 | 100.00 |

Table 35 indicates that the capital investment ranges Php10,000 – Php20,000 and Php30,001 – Php40,000 had the highest proportions (48.84 percent and 18.60 percent), aggregately comprising over half of the 43 respondents. Data further showed that some 16 percent had investments ranging from Php20,001 – Php30,000, 9.30 percent invested below Php10,000, while almost seven percent had investments ranging from Php40,001 – Php50,000.

Table 36: Distribution of Nueva Vizcaya Cut flower growers by Seeing the Cut flower as a Profitable Venture

| RANGE OF AMOUNT OF CAPITAL INVESTMENT | FREQUENCY | PERCENTAGE |
|---------------------------------------|-----------|---------------|
| No | 0 | 0.00 |
| Yes | 43 | 100.00 |
| TOTAL | 43 | 100.00 |

Data in Table 36 show that every cut flower grower in Nueva Vizcaya agree that the cut flower is a profitable venture.

Table 37: Distribution of Nueva Vizcaya Cut flower growers by Amount of Income Earned in a Year

| RANGE OF AMOUNT OF INCOME EARNED IN A YEAR | FREQUENCY | PERCENTAGE |
|--|-----------|---------------|
| Below 10,000 pesos | 0 | 0.00 |
| Php10,000 – Php20,000 | 0 | 0.00 |
| Php20,001 – Php50,000 | 7 | 16.28 |
| Php50,001 – Php100,000 | 22 | 51.16 |
| Php100,001 – Php150,000 | 14 | 32.56 |
| TOTAL | 43 | 100.00 |

Table 37 suggests that the income earned ranges Php50,001 – Php100,000 and Php100,001 – Php150,000 had the highest proportions (51.16 percent and 32.56 percent respectively), aggregately comprising two-thirds of the 43 respondents. Data further showed that some 16 percent had earnings ranging from Php20,001 – Php50,000.

Section 3: Problems Encountered by the Growers:

This section discusses the problems encountered by the Nueva Vizcaya cut flower growers in terms of the operational, marketing, and financial aspects.

Table 38: Distribution of Nueva Vizcaya Cut flower growers by the Operational Problems Encountered

| OPERATIONAL PROBLEMS | FREQUENCY* | PERCENTAGE |
|--|------------|------------|
| Lack of Technical know-how | 0 | 0.00 |
| Limited Planting Materials | 0 | 0.00 |
| Insufficient Production Technology | 34 | 79.07 |
| Insufficient knowledge on Post Harvest Technique | 0 | 0.00 |
| Limited Area of Propagation | 0 | 0.00 |
| Inadequate Breeding Technology | 39 | 90.70 |
| Costly Farm Supplies | 5 | 11.63 |
| Lack of Transport Facilities | 0 | 0.00 |
| Irrigation Problems | 12 | 27.91 |

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*Multiple responses

The information in Table 38 illustrate that 90.70 percent of the growers had inadequate breeding technology, some 79 percent of the total respondents had insufficient production technology, 27.91 percent had irrigation problems especially those frequently rain-visited areas, while 11.63 percent had problems with the high cost of farm supplies.

The researcher found out that the growers of the province have sufficient knowledge on the propagation of existing cut flower varieties. However, the growers have inadequate breeding technology on asexual reproduction (vegetative propagation) of cut flowers that would aid them in producing other varieties produced at present by other growers from outside the province. With new production technology comes the introduction of new agricultural chemicals which are not readily available locally and work out very expensive when imported. This is coupled with high import duties on other inputs too, thus lagging them to produce massively. Based on follow-up questions by the researcher, the deficiency in breeding techniques could also be attributed to the growers' lack of trainings/seminars. Some have attended trainings more than five years ago.

Table 39: Distribution of Nueva Vizcaya Cut flower growers by the Marketing Problems Encountered

| MARKETING PROBLEMS | FREQUENCY* | PERCENTAGE |
|--|------------|------------|
| Insufficient Linkage Capabilities | 34 | 79.07 |
| Inefficient Marketing Network | 37 | 86.05 |
| No Specific Market Outlet | 39 | 90.70 |
| Inadequate Access to Market Information on Market Demand | 26 | 60.47 |
| High Cost of Packaging Materials | 0 | 0.00 |

*Multiple responses

Table 39 indicates that the marketing problems encountered by the cut flower growers of Nueva Vizcaya were: there is no specific market outlet, inefficient marketing network, insufficient linkage capabilities and inadequate access to market information on market demand (with percentages of 90.70 percent, 86.05 percent, 79.07 percent and 60.47 percent respectively) that is why most of them bring their produce in Benguet and Baguio City.

The researcher also learned based on queries made to the Department of Trade and Industry, and to the Bureau of Agricultural Statistics that there is no existing registered cut flower association in any town within the province, which according to some growers makes it more difficult for them to trade their produce. The researcher also asked the aforementioned offices pertaining to the present demand of cut flowers within and outside the province, but there is no present data for which. According to growers, most just time their harvest during the All Souls day, March and the rest of the summer.

The Provincial Planning and Development Office (PPDO) also helps in the promotion of the cut flower as a product of the province, it does not however, suffice the linkage capabilities that the industry needs because the growers are not associated with each other and neither are most growers connected with the said office. According to some growers after the researcher made follow up questions with regards to government tie ups, it is easier and more convenient to sell their produce individually.

While it is true that the government has put up the Nueva Vizcaya Agricultural Trading (NVAT) Center, it however, caters to the buy and sell of vegetables only; hence, there is no particular area for the trading of cut flowers.

Table 40: Distribution of Nueva Vizcaya Cut flower growers by the Financial Problems Encountered

| FINANCIAL PROBLEMS | FREQUENCY* | PERCENTAGE |
|--|------------|------------|
| High Interest rates of banks and lending companies | 0 | 0.00 |
| High investment costs (raw materials & equipments) | 22 | 51.16 |
| High transport costs | 0 | 0.00 |
| Insufficient strategies alliances (cooperatives) | 33 | 76.74 |
| Lack of capital for expansion | 18 | 41.86 |

*Multiple responses

The data in Table 40 reveal that 76.74 percent of the Nueva Vizcaya cut flower growers said that one of the financial constraints that they are having is on the insufficiency of strategic alliances or cooperatives, as most of them aside from the growers in Sta. Fe, are not affiliated with any associations that might help them in the financial position of the business. Most growers sustain their gardens by borrowing from their cooperatives. Lack of cut flowers associations then, impede them to expand on the business.

The table also shows that 51.16 percent agree that cut flowers have high investment costs. Although some cut flower like roses and gladioli are grown even without sheds, some cut flowers need greenhouses to be able to yield quality flowers, which eat up most of the investment costs. While 41.86 percent said that they lack capital for expansion, the researcher also found out through interviews that access to credit sources is also another major problem confronting the growers. The interest rates on loans offered by institutions are high. Growers of roses, chrysanthemums, gladiolus, orchids and anthuriums are in need of financial support during the initial stages of production. Collateral requirements demanded by lending agencies are rarely met and the grower faces the dilemma of whether to continue cut flower growing or not.

Section 4: Interventions addressing the Problems of the cut flower growers in terms of Operation, Marketing and Financial aspects:

This section provides interventions that would address the different problems posted by the three aspects of this study.

Table 41: Summary of Interventions

| IDENTIFIED PROBLEMS | INTERVENTIONS |
|---|--|
| a.1. Insufficient Production technology a.2. Inadequate Breeding technology a.3. Irrigation Problems a.4. Costly farm supplies | a.1. Growers should attend more trainings/seminars within and outside the province on cross-breeding of cut flowers for new varieties. a.2. Growers should attend trainings/seminars within and outside the province on asexual reproduction of cut flowers to enhance or boost production. a.2.1. Government agencies, such as the DTI and the PPDO should tie up and put up a general association for cut flower growers to serve as their juncture in exchanging techniques or expertise in the propagation of cut flowers. a.3. Growers should coordinate with the Local Government Units (LGUs) to control irrigation problems. a.3.1. LGU’s should visit frequently rain visited areas to understand problems on the water system of the growers. a.4. Growers should tip up with other growers for alternative methods or equipments that are not so expensive in the propagation of cut flowers. a.4.1. Government agencies such as the OPAG and the PPDO could help growers find financial support from NGO’s, if gov’t funding is unavailable. |
| b.1. No specific market outlet | b.1. Growers should coordinate with government agencies to help them in finding a proper trading area for cut flowers. |
| b.2. Inefficient Marketing b.3. Insufficient linkage capabilities b.4. Inadequate access to market information on market demand | b.2. Government agencies should initiate linkage of growers within and outside the province to promote marketing of cut flowers. b.3. Government agencies should come up with local trade fairs showcasing cut flowers and invite local growers as well as growers from other provinces to participate on such fairs. b.3.1. Growers should put up associations to serve as their marketing and financial linkage. b.4. Government agencies such as the DTI, OPAG, PPDO and BAS should have ready data on consumer demand of cut flowers, as to variety and quantity, to be able to help growers identify which cut flowers are to be propagated. |
| c.1. Insufficient strategic alliances, such as cooperatives. c.2. High investment costs of raw materials and equipments. | c.1. Growers should put up associations to aid them in their financial needs in the procurement of raw materials and in their expansion plans. c.2. The School of Business of St. Mary’s University could aid the cut flower growers through the Bridging leadership program by providing bookkeeping trainings/seminars. These trainings/seminars would aid them |

| | |
|------------------------------------|----------------------------------|
| c.3. Lack of capital for expansion | in managing their finances well. |
|------------------------------------|----------------------------------|

IV. CONCLUSION

The Nueva Vizcaya cut flower growers were mostly married, female and belonging to ages 36 to 45. Most entered and finished college, although most of them have been working as farmers. Generally, they have not attended trainings/seminars on the cut flower for the past three years, worked on their own farms and did not have any hired help and have been propagating cut flowers for more than 10 years.

Nueva Vizcaya cut flower growers propagated a variety of flowers in a relatively wide garden. Majority of the growers have acquired nurseries and greenhouses to propagate their plants, manual and power spray were commonly used to water their plants, and the grab hoe and cutter were generally used as tools. Growers acquired seedlings from propagators within the area and from those outside the province if seeds are unavailable. None so far used herbicides in the propagation of cut flowers. To prolong the vase life of harvested cut flowers, growers put them in water. Unsold cut flowers were dried and used as fertilizers.

Price changes during peak season and generally depends on the running price of the market. Those that were sold outside the farms were packed in newspapers and cartons and were classified according to variety, flower size and stem size. Wholesalers, individual consumers, florists and institutional buyers frequent growers to buy cut flowers in the farms, those that were not bought in farms are brought to markets, flower shops, trading centers and government offices.

Most growers initially got their capital from loans from cooperatives and from their own savings. Some went to lending companies and in the early 1990s; and contract growers approached some of them. Their initial investment depended on the equipment used and area of propagation. The growers find the cut flower a profitable venture.

The growers have inadequate breeding technology and insufficient production technology and some have irrigation problems especially those areas that are frequently rain-visited. Most of their marketing problems concern linkage capabilities, inefficiency of marketing network, no specific market outlet, and inadequate access to market information on market demand. There is also the insufficiency of strategic alliances (cooperatives), high cost of raw materials and the lack of capital for expansion as financial constraints.

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