

**Agricultural Cooperation and Horticultural Produce Marketing
in Southwest Virginia**

**by
Paul Trupo**

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Paul S. Trupo

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APPROVED:

George W. Norton, co-chair

Dixie Watt-Reaves, co-chair

Charles W. Coale

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MARKETING IN SOUTHWEST VIRGINIA

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Paul S. Trupo

George W. Norton and Dixie Watts-Reaves, Co-chair

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(ABSTRACT)

Agricultural production in Southwest Virginia is characterized by numerous small, geographically disperse farms dedicated to traditional practices of producing tobacco and cattle. Community leaders have expressed the desire to diversify the region's agricultural production base to include potentially more profitable commodities such as horticultural crops. In order for the small growers to penetrate the fresh horticultural market and compete with the larger production regions, they must organize themselves into a farmer cooperative that allows them to pool resources, reduce costs, and share risk.

A successful cooperative will increase farm incomes for the region's producers. The co-op will strive to obtain a higher price for the commodities produced than that price which can be obtained by growers acting independently. The increase in farm incomes should offset forecasted decreases in agricultural incomes resulting from declines in the region's traditional production activities. Increased farm incomes for a large number of small growers should have a substantial impact on agricultural producers, marketers, and equipment suppliers and lead to economic development for the region as a whole.

Several past horticultural cooperative efforts have been publicly financed and eventually failed for a wide variety of reasons. The methodology used in this research include

surveying and interviewing marketing specialists, co-op managers, growers, extension agents, horticulturists, and other experts involved with both successful and failed cooperative efforts. The data gathered from these interviews has been used to identify key factors that have contributed to the success or failure of the other cooperative efforts.

Based on the key factors identified from the research, a specific cooperative structure has been developed for the Southwest Virginia growers. This organizational structure incorporates into its legal documentation (bylaws, business plan, and marketing agreement) the critical factors that must be carried out by members, management, extension, and marketers in order to increase the probability for the cooperative's long-term survival and profitability.

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CHAPTER I: INTRODUCTION

Southwest Virginia is an economically disadvantaged region (Table 2.1) with a shrinking population due largely to the lack of economic and employment opportunities. The region is dependent on cattle and tobacco production for a high percentage of its agricultural income (Table 2.2). Economic forecasts predicting declining markets in both of these commodities (Purcell 1996) have generated concern in the region for developing new sources of future agricultural income.

Horticultural production has often been mentioned as a potential production enterprise that could help raise farm income levels in the region. Historically, horticultural production in the region has proven agriculturally feasible for most traditional crops, and economically feasible for those growers who have been able to supply the local markets. Local markets, which consist of small retail outlets, fruit stands and roadside stands, pick-your-own operations and on-farm retail sales, have become saturated to the point where it is no longer profitable for additional producers to enter these markets. Those producers in the region who wish to increase their farm income through the expansion of, or diversification into, fresh horticultural produce sales face several constraints from the region.

The lack of an adequate marketing infrastructure has most frequently been cited for the failure to expand regional horticultural production to include larger quantities of produce and a greater number of producers. A 1996 study, carried out by Coale et al (hereafter known as Phase One) looked at the feasibility of a shipping-point market to provide the marketing infrastructure necessary to permit the expanded production of horticultural produce in the region. The findings from the study suggested that horticultural

production can be profitable, but that local producers must meet certain industry standards, such as high quality, large volumes, and grading, packing, cooling and delivery requirements. In summary, the demand for local produce was found to exist at levels that can be profitable for the region's growers, assuming the growers can meet the requirements outlined above. The existence of a shipping-point market could provide the infrastructure necessary to allow the local growers to meet these standards. Although a shipping-point market could provide the essential infrastructure, the physical facility alone will not guarantee that all standards are met.

Past attempts to form horticultural production associations in the region have been unsuccessful. The mere presence of a marketing infrastructure is not sufficient to guarantee that local growers will be able to sell their produce. Other less tangible marketing issues have been overlooked, and therefore, have contributed to the downfall of these enterprises. The Phase One study identified a major factor that has contributed to the failure of the region's growers to expand production and break into new markets: the lack of an organized, cohesive unit of producers and marketing specialists working together to address market requirements.

Research Problem Statement

Since the existence of a shipping-point market facility operated by a cohesive association of local producers could help raise on-farm incomes and greatly benefit the region, one must look at the reasons why the facility and organization does not exist. An apparent market failure exists in the region, because such a facility would be unprofitable for an individual producer or private investor, due to the large capital investment needed and the high cost of coordinating growers (Coale et al, 1996). Additionally the transactions costs associated with informing, organizing, and coordinating a large number of small

producers, as well as the initial investment in capital to purchase the required infrastructure, would be higher on a per farmer basis than the returns obtained by any individual using the facility. While the existence of such a facility would provide the local producers with the proper infrastructure needed to compete in the national market, without the assistance of government funding, the costs of initiating the project will prevent the endeavor from moving forward.

The fresh produce industry has very specific requirements: a homogeneous, high quality product; large volumes of produce; the removal of field heat; reliable, well coordinated deliveries; specific variety, grading and packaging requirements; and a year round supply. Given these strict requirements, the industry has come to be dominated by a relatively few, very large producers located in the warmer, more suitable regions of the country (Appendix 1).

The results of the earlier study (Coale et al, 1996) have demonstrated that, due to the requirements of the fresh produce purchasers, no single grower or small group of local producers can break into the market individually. A large number of Southwest Virginia producers would have to organize themselves into a cohesive group, produce in coordination, and process, package and market their product together in order to meet the requirements of produce purchasing agents. In order for local producers to compete with the lower per unit cost of production that the large, well established, out-of-state producers possess, it is necessary to minimize costs and capture a portion of profits paid to brokers and wholesalers. Wholesalers or other “handlers” typically purchase fresh produce directly from shipping-points located in various geographic regions, repackage it, and market it to larger retailers. The most feasible way for the local growers to meet market requirements, minimize costs, and capture higher returns for themselves is to form

a marketing cooperative designed to provide the individual growers with an *at cost* channel to the larger retailers.

In the Southeastern United States, many attempts by small producers to band together into a grower association or producer cooperative have failed for a variety of reasons. Two major efforts to organize local growers into horticultural marketing cooperatives in the state of Virginia have failed since 1985, as did two previous efforts within the study region. Major reasons cited for the failure of horticultural cooperatives include the following: the inability to identify all the key issues of operating a cooperative, the failure to lay out a detailed work-plan that anticipates potential problems and obstacles, the difficulties in coordinating a large number of diverse producers, and the lack of an adequate managerial structure capable of organizing and coordinating all aspects of a producer/marketing cooperative.

Objectives and Hypothesis:

The overall objective of this study is to determine why so many horticultural cooperatives have failed and to present a workable plan for the Southwest Virginia Cooperative that will assure the highest probability of success.

Specific objectives are to:

- 1) determine the role of the government in assisting local producers to overcome the market failure,
- 2) identify all the key issues relevant to successfully establishing a horticultural cooperative in Southwest Virginia,
- 3) design an organizational structure that guarantees that all the critical issues are addressed, and

4) identify all key managerial functions and present specific work responsibilities for all aspects of management that will assure the highest probability of success.

Hypotheses

A specific working hypothesis for this study, which will not be testable within the time-frame of this study, is that the benefit to the local economy resulting from increased agricultural production and family income will be greater than the cost of the government financial assistance awarded to the local grower association for all aspects of starting the horticultural cooperative.

A second working hypothesis, that will also not be specifically tested within the context of this study, is that the increased supply of fresh produce available on a national level will promote increased competition in the industry, which will lead to lower consumer prices, higher quality, technological innovations, and other benefits associated with more competitive markets.

A third hypothesis of this study is that a detailed work-plan that specifically addresses all aspects of organizing and operating a horticultural cooperative will increase the likelihood of a long life span for the co-op and profitable returns for the co-op members.

Organization of Study:

This study will include an analysis of groups of horticultural producers similar to those in Southwest Virginia, in order to learn from their experiences. The goal of these analyses will be to identify critical factors and key issues that have led to the success or failure of each individual case. The key issues relevant to organizing and managing a producer

cooperative will then be applied to the Southwest Virginia group, in order to address the specific objectives mentioned above.

A review of the literature and a historical synopsis of the distinctive characteristics of the Southwest Virginia growers' association is presented in Chapter II. The literature review starts by looking at the socio-economic and agricultural characteristics of the study region, followed by a summary of the Phase One study (Coale et al, 1996) which provides the background for this study. Next the production and consumption trends in the fresh produce industry will be summarized in order to establish a target for marketing produce. Summarizing these trends will involve examining the historical developments of the fresh produce retail industry. Having summarized the background to the study, the concept of market failure in agriculture is considered, and the role of the government in assisting small, agricultural producers is examined. Following the discussion of market failure, the theory of growth due to specialization is reviewed, and a conclusion is drawn regarding the optimal organizational structure for the Southwest Virginia producers. Finally, the history and legality of agricultural bargaining associations is examined. This final review consists of examining why the government has historically awarded preferential treatment to agricultural cooperatives, and the welfare economics of cooperatives.

The findings of extensive surveys and interviews with marketing specialists, produce buyers, local growers, cooperative extension agents, and horticulturists are presented in chapter III. The chapter begins by breaking down the process of producing and marketing fresh produce into its individual components. It systematically outlines every task and corresponding skill that must be undertaken in order to produce a horticultural commodity locally and get it on to the supermarket shelf. An examination of where the system breaks down for Southwest Virginia growers is then provided. Local constraints

that cause the breakdown in the system are identified, and consideration is given to what has prevented local operators from designing a system that addresses all the key issues and tasks. The role of government to help overcome these constraints is indicated and presented as a justification for the use of public funds.

Building on the findings of the previous chapter, the issue of a cooperative as the optimal organizational structure for the local producers is specifically addressed in Chapter IV. In this chapter, each essential task identified in Chapter III is addressed in terms of the cooperative's ability to carry out the task. A work plan is developed, and job descriptions for each participant of the cooperative structure are described, assuring that all key issues and critical tasks are addressed and accounted for.

Finally, a summary of the findings is presented, the relevance of this study is discussed, and the implications of this research for the region are outlined.

Chapter 2. Literature Review and Historical Synopsis of Study Region

Introduction

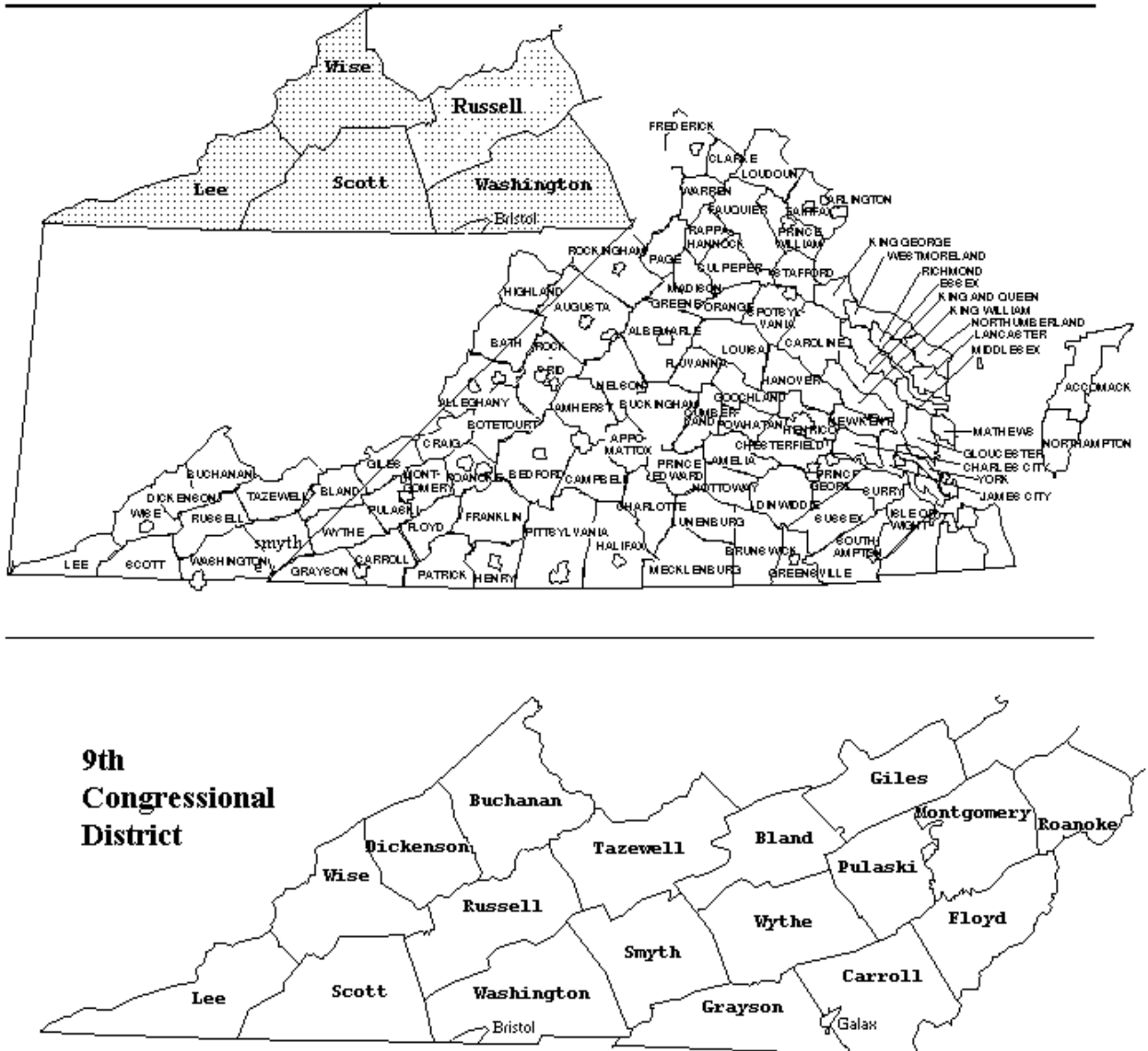
This chapter has been structured to present a historical synopsis of the Southwest Virginia study region, and to take the reader through the entire thought process that forms the base of this study. Background research is presented that has led to the conclusion that a marketing cooperative is the optimal organizational structure that will allow local growers to break into the market as suppliers of fresh vegetable produce to the retail food industry. This chapter begins by examining the socio-economic characteristics of Southwest Virginia and the contribution of agriculture to household incomes. This examination illustrates the reasons which led to the Phase I study, which was conducted between June 1995 and September 1996, and indicates the results and conclusions drawn from the study.

Building on the Phase I study, which shows a potential for profitable horticultural production in the region, fresh produce consumption and production trends are examined which help verify the Phase One study results. Examining industry trends allows one to better specify direct actions that should be taken. Based on the industry's future trends, the fresh produce retail marketing network is considered, and the role of the Southwest Virginia producer is specified. After having identified the marketing network and the role of the local grower, the barriers and constraints that have created the market failure and prohibited the local producers from expanding local horticultural production are explained. The focus of the market failure is explained as the inability of the local producers to divide the necessary assignments required to produce and market vegetables into separate tasks to be handled by specialists. Finally, the historical development of marketing and producer cooperatives are identified, and an explanation why this

organizational structure is best suited for overcoming the barriers faced by the region is provided; specifically, it allows for the efficient division of labor.

Figure 2.1

Virginia State Map and Study Region



2.1 Southwest Virginia - Socio-economic Perspective

Southwest Virginia is an economically disadvantaged region (Table 2.1) of the state with a standard of living considerably below that of the state average. The five county study region¹ includes Scott, Russell, Washington, Wise and Lee Counties (see map, Figure 2.1) which are among the poorest counties in the state. The percentage of families living below the poverty level is two and a third times greater than the state average, the median household income is only 57.8 percent of the state average, the unemployment rate is nearly twice as high, and educational attainment levels are far below those for the rest of Virginia. Even more telling is the fact that government transfer² payments make up 27 percent of the region's total personal income.

The five counties in the study region are located in a sparsely populated, geographically isolated area of the Appalachian mountains. The land area makes up 6.2 percent of the state total (6,257 Km².) while the population (164,447) represents 2.5 percent of the state's total population. Lack of economic opportunities has led to a sizable out-migration from the region. Between 1980 and 1990, a net migration of 15,900 people moved out of the region, which amounts to nine percent of the total population. If new births are factored in, the region has experienced a population decrease of 6.4 percent over the last ten years, while the state's total population grew by over 15 percent during the same period. This out migration has occurred over the same period that median household income has declined by 11.27 percent³ indicating a possible correlation.

¹The term "study region" is used to refer to the five county area relevant to this research thesis.

" 9th congressional district" is used when referring to the larger study region of the Phase One project.

² Transfer payments include medical payments, unemployment insurance, social security, and other income maintenance.

³ In terms of 1985 constant dollars

	Five County Study Region	9th Cong. District	Virginia Average
Percentage families below poverty level	18.0%	14.7%	7.7%
Median household income	\$19,207	\$20,857	\$33,865
Unemployment rate	8.9%	7.1%	4.5%
% > 16 yrs. old in labor force	50.2	60.4	68.9
Median value of housing unit	\$44,700	\$49,100	\$90,400
Percent population high school Graduate	53.5%	57.6%	75.2%

Table 2.1: Socio-economic Characteristics of Southwest Virginia

2.2 Importance of Agriculture

Given the existing conditions and the economic difficulties and barriers present in the region, such as the high unemployment rate, the large percentage of the population dependent on federal income maintenance and other government support programs, the decreasing population size, low educational levels, and high poverty levels, increasing farm production offers an immediate opportunity for augmenting family incomes. There are 6,038 farms in the study region with 627,000 acres of farmland. The total value of all farm produce sold in 1992 was \$100 million, a substantial sum considering the economic conditions of the region.

The region has historically been an agricultural producing region, and while the contribution of agriculture as a share of total earnings has followed the national trend and declined, a considerable share of the population continues to live on farms. Currently, agricultural income from farm sales makes up approximately 3.5 percent of the region's total personal income. While farm production ranks far below the service, retail and manufacturing sectors as a contributor to total income, the additional processing, transporting, marketing and retailing of the farm-produced raw product is responsible for a much higher percentage of total income.

The potential for increasing agricultural production can be seen from the fact that only 40.6 percent of the agricultural producers operate their farm as their primary occupation. The rest are part-time growers who hold other employment and work on the farm when not working at their primary occupation. Many of the extension agents working in the region explain that this part-time farming phenomena is caused by the lack of economic opportunities for expanding production in the region (extension agent survey). Few agricultural opportunities exist for increasing farm incomes in the region. The top two money earners, cattle and tobacco, face constraints that prohibit increasing production: 1996 beef prices were at ten year lows, while the quota system on tobacco prohibits increasing production.

Coale et al identified small farm size as one of the region's major obstacles to increasing horticultural production. Of the 6,038 farms in the five county region, 47.2 percent are smaller than 50 acres, while only 2.6 percent can be considered relatively large with greater than 500 acres. The average farm size is 104 acres, compared to the state average of 196 and the national average of 467 acres (USDC 1992). The typical Southwest Virginia farm contains approximately 45 acres of cropland. To put this into perspective, the 25 largest horticultural producers in the Southeastern United states have an average of 7,662 acres of vegetables each. If a "typical" Southwest Virginia farmer put half of his available cropland into horticultural production, it would take the combined effort of 340 growers to obtain the same acreage as the *average* large Southeastern based vegetable farm.

Not only are the Southwest Virginia farms small, but farm income is extremely low. The average per farm value of product sold is only \$16,500, before allowing for expenses.

Forty-four percent of all farms in the region sell less than \$10,000 worth of agricultural produce each year.

2.3 Summary of Phase One Study

The Phase One study took place between May 1995 and September 1996. The primary objective of the study was two-fold: 1) to determine if expanding the production of horticultural crops is a feasible and profitable venture for Southwest Virginia growers, and 2) to determine if the construction of a shipping-point market would be feasible, and if it could ensure profits for the region's growers. As part of this feasibility study, three major components were identified, and each one had to be separately evaluated in order to assess the overall feasibility of the project. The three categories were: (1) market demand, (2) production feasibility, and (3) local capability and interest.

Determining the market demand consisted of four tasks: (1) interviewing a large number of purchasing agents to determine if there is an interest in buying Southwest Virginia produce, (2) identifying demand side barriers and constraints that have prevented the expansion of horticultural production, (3) conducting a financial profitability analysis to determine potential earnings of producing various crops, and (4) conducting a market window analysis to determine the most profitable dates for harvesting specific crops.

The second component, production feasibility, included gathering information from local producers, horticulturists, and extension agents, in order to determine the agronomic feasibility of cultivating different crops in the region. This objective was accomplished by: (1) surveying local cooperative extension agents, (2) interviewing local producers about production efforts during on-farm visits, (3) interviewing university based horticulturists about crop trials and crop production potential, and (4) reviewing

agricultural literature in Virginia and neighboring states related to crop experiments, yields, costs, and other agricultural aspects of producing horticultural crops.

The third component, to determine local capability and interest, also involved a variety of tasks which included: (1) visiting growers on their farms to discuss local issues and desires, (2) surveying a large number of growers about past trends and future wants and interests, (3) interviewing local extension agents about their clients' needs, (4) interviewing past co-op management to determine historical aspects of past horticultural production efforts, and (5) interviewing community leaders and other interested individuals to determine local interest and support.

The overall objective of the study, to determine the feasibility of expanding horticultural production in the region, was carried out by verifying the compatibility of the three categories that determine project feasibility. In order for horticultural crop production to be feasible and profitable, there must be a desire for retailers to purchase the commodities, these commodities must be feasibly grown in the region at the quality and characteristics demanded, and the local producers must have the ability, capital equipment, land, and desire to grow them. If all of these requirements are met, the goods must be produced, processed and marketed at a low enough cost that make the venture profitable for growers, handlers and retailers to purchase the goods at their respective stages of the marketing network.

A major goal of the study was to determine if there was an interest in buying locally grown produce, and if so, why retailers were not currently purchasing this produce. A survey of all types of produce purchasing agents in the area was conducted. The different purchasing entities included small wholesalers, independent grocers, restaurant servicers, large wholesalers, small supermarkets and large supermarket chains. Approximately four

out of every five buyers were interested in purchasing Southwest Virginia produce, but none were currently doing so. They were asked to express why they were interested in local produce. The two most frequently cited responses were: (1) that it was fresher, and (2) consumer preference (Figure 2.2). When asked to explain why they were not currently purchasing this produce, their most common responses were (1) inconsistent quality, (2) lack of adequate volumes, (3) bad business practices, and (4) improper grading (figure 2.3).

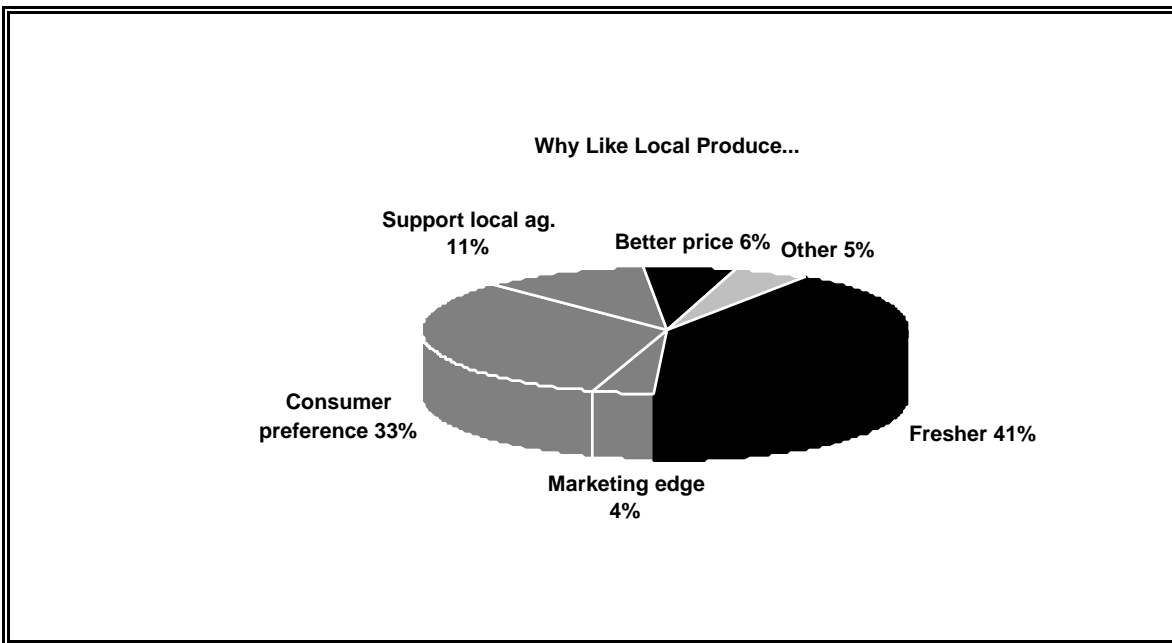


Figure 2.2 Why Purchasers like Local Produce

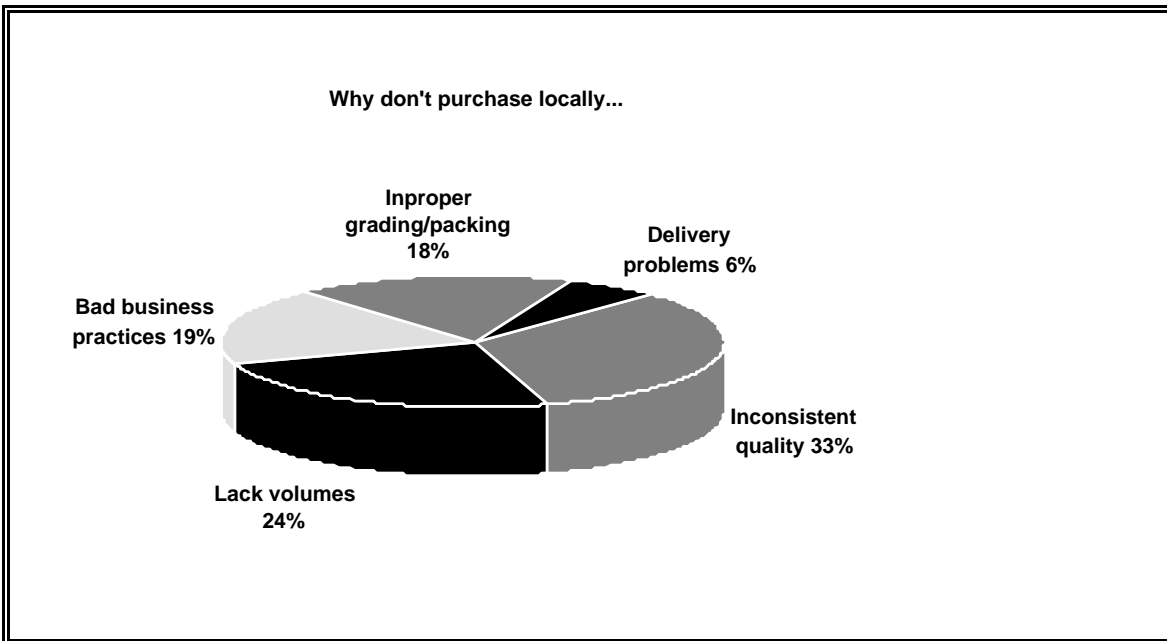


Figure 2.3: Why Produce Buyers are Not Purchasing Southwest Virginia Produce

The findings of the study suggested that if certain requirements are met, expanding horticultural production in the region can be a profitable enterprise. The requirements needed to be met can be classified into three categories: (1) production issues, (2) post harvest handling issues, and (3) marketing issues. Production issues consist of producing specific crops, at specified dates using specified varieties in large volumes and at high quality levels. Various crops were analyzed for feasibility and profitability. A list of the ten most profitable crops is presented in the Phase One study (Coale et al 1996, pg. 60). The post-harvest handling questions consist of issues related to the construction of the shipping-point market facility. The facility will address the concerns of removing the field heat and adequately cooling the produce, proper grading, specified packaging, and meeting other purchaser demands. The marketing concerns include proper deliveries to warehouses, reliability in compliance to contracts, following accepted business practices, and proper advertising.

Summarizing the results of the Phase One study, there is no physical or logistical barrier that definitively excludes the Southwest Virginia region from participating in the fresh produce industry. The barriers that exist, such as small volumes, lack of marketing infrastructure, lack of marketing expertise, substandard quality, etc., can all be overcome by specifically addressing these issues. The problem that has prevented growers and community members from addressing these specific needs has been caused by the high "transaction costs" of organizing all the key components needed to address the various issues. Economics has labeled this phenomenon as a "market failure," the inability of a system of private markets to provide certain goods at all, or at their most optimal level even though the provision of these goods would be profitable for society as a whole (see section 2.6). Horticultural production is a potentially feasible activity for the region, but the start up costs of purchasing the marketing infrastructure, and of organizing the essential participants, are too great for any individual, private firm, or small group of individuals.

Even if the market failure could be overcome through government financial assistance aimed at addressing the transaction cost issue, recent history demonstrates that growers still face other constraints. The mere existence of marketing infrastructure does not guarantee that production and post-harvest handling will meet industry standards. There are several recent cases of Virginia horticultural producer organizations receiving financial grants to stimulate production, but disbanding within a few years because of poor management and poor production methods. The Phase One study concluded that, historically, nearly all the focus was placed on the physical infrastructure issues, and important organizational issues were ignored. An organizational structure must be created that assures a proper flow of information from consumer to producer, and in return, a flow of produce from grower to consumer that meets all market requirements. Most previous attempts at horticultural marketing efforts have broken down because the

critical issues such as production, consumer demand, post-harvest handling, and marketing were not carefully integrated to assure compliance with industry standards.

To ensure the feasibility and success of breaking into the fresh produce industry, the region's producers must have a specific marketing strategy. The large supermarket chains provide the best match for the region's production capabilities. Supermarkets are preferred because: 1) they specifically desire to market Virginia grown produce to local consumers, 2) they want large supplies delivered to single warehouses, 3) they prefer long-term working relationships, 4) they are the largest retailers of fresh produce, 5) they advertise produce and generate brand name loyalty, 6) they are located near the study region, and 7) additional wholesalers and handlers can generally be avoided. Restaurant servicers are also potential buyers, but while they place a premium on high quality, there is not a high consumer preference for locally grown produce in the away-from-home food industry.

One of the key recommendations for future research that came out of the Phase One study was to determine the optimal organizational structure, and to develop a work plan for coordinating producers that assures that all critical issues are addressed. This plan should determine the roles and responsibilities for all participants of the production/marketing process, and provide job descriptions that ensure compliance with the requisite standards (Coale et al, pg. 91). This thesis builds on the conclusions of the Phase One study, and addresses the specific issues related to creating an optimal organizational structure.

2.4 Horticultural Production and Consumption Trends

In determining the optimal structure for a horticultural cooperative to adopt, one must look at current trends in the consumption of fresh horticultural produce, and at current developments in the marketing of fresh produce.

Consumption

Together, fresh fruits and vegetables make up 12.2 percent of consumer expenditures for food eaten at home. Per capita consumption of vegetables has been increasing steadily since the 1970s. From 1967 to 1986, per capita consumption of vegetables rose 18 percent. Many factors have been responsible for this trend of increasing vegetable consumption.

Major reasons cited for increased per capita consumption of vegetables include: increased nutritional awareness by the consumer, increased health and fitness consciencesness (Brooker, 1987), changing demographics, greater labor force participation by women, and growth of the leisure industry (McCracken, 1988). Brooker emphasizes nutrition and health. Nutrition refers to the presence of specific vitamins and vitamin combinations found in fresh vegetables, while health specifically refers to the benefits of food with low fat, low sodium, low cholesterol, and low sugar levels.

The demographic reasons cited for changes in consumption patterns are changes in age, sex and size composition of households, the number of households with multiple wage earners, the racial mix of the population, the increasing percentage of married female workers, increasing per capita incomes, and the geographic shift from north to south and away from urban areas. All of these factors have contributed to some degree to the

increased consumption of vegetables (McCracken, 1988). Researchers debate which factors are the most responsible, but nobody disputes the validity of the trend toward greater quantities of vegetable consumption.

Another noticeable trend in food consumption is the increased expenditures on food consumed away from home. The proportion of disposable income spent on all food items has decreased two percent in the last twenty years, while the share consumed away from home has risen slightly. Of all food expenditures consumed outside the home, consumption has shifted from full service restaurants to fast-food⁴ establishments. The percentage of dollars spent outside the home at fast-food establishments rose from less than 10 percent in the early 1960s to 46 percent in 1993 (Manchester, 1987; USDA 1994). Within the fast food sector, there is also a trend toward an increased consumption of fresh vegetables. Where hamburgers used to dominate the fast food industry, there has been a rapid diversification of foods offered and the expansion of new entrants that serve salad bars, ethnic food, sandwiches, buffets, etc. which have all contributed to an increase in the consumption of fresh vegetable produce.

This shift toward away-from-home consumption and fast-food, with its increased need for food services, has directly affected the marketing channels and the number and size of food handlers. Food supplied to eating-establishments is generally handled by more parties than food consumed at home. A representation of the marketing channel that fast-food products may follow is as follows: from producer to large wholesaler, to small wholesaler, through broker, to food processing plant, to franchise warehouse, to individual restaurants. At each stage value is added to the product, thus reducing the percentage of price paid to growers as a portion of final retail price (farmers' share).

⁴Includes hamburgers, chicken, pizza, fast-Mexican, etc.

Vegetables make up a large portion of all food items consumed at home. Of the vegetables consumed at home, "convenience vegetables" such as pre-cut vegetables, pre-packaged salads, microwavable dishes, and ready to eat delicatessen dishes make up between 50-65 percent. Personal communications with supermarket purchasing agents and grocery store produce wholesalers in Southwest Virginia showed that fifty percent of all produce dollars sold are considered "convenience" or "pre-prepared" vegetables. One major supermarket chain produce purchaser stated that his firm is forecasting the share of "pre-prepared" produce sales to increase to 80 percent of store sales within 15 years (Coale, Trupo, et al, 1996).

The total per capita consumption of fresh and processed vegetables has increased to about 190 pounds per year in 1985. Between 1973 and 1988, the mix of fresh, frozen and canned vegetables changed. Over this time period, fresh and frozen consumption increased by 21 percent, while the consumption of canned goods decreased by eight percent (McCracken, 1988). This indicates a trend toward fresh and frozen produce and away from canned goods. The current consumption of fresh produce accounts for 48 percent of all vegetables consumed, while canned and frozen goods account for 43 and 9 percent, respectively.

While vegetable consumption is following a definite trend, this trend is not constant for all vegetables. Consumption of certain vegetables has increased dramatically, while many of the traditional canned vegetables have remained steady or decreased slightly. Per capita consumption of broccoli increased 175 percent between 1974-86, and cauliflower consumption increased 123 percent between 1973-85. The consumption of both continued to increase during the 1980s and increased over 20 percent from 1985 to 1986. The dramatic increases in broccoli and cauliflower consumption is attributed to intensive marketing campaigns promoted and managed by large California producers.

Potatoes continue to be America's most consumed vegetable. The average American continues to consume 120 pounds of potatoes yearly, just as they did thirty years earlier, but the mix of fresh to frozen has changed greatly toward greater consumption of frozen potatoes. In 1965, Americans consumed 15 pounds of frozen potatoes yearly, and in 1987 that number increased to 40 pounds. Tomatoes have continued to be the second most popular vegetable with per capita consumption rising during the 1950s and 1960s and peaking in the mid 1970s. In the 1980s, tomato consumption again increased, caused by the increased popularity of tomatoes in restaurant based foods, and the consumption of salads, both of which rose during the mid 1980s.

The traditional canned vegetables have suffered because of the increase in frozen vegetable consumption. Traditional canned vegetables include green peas, green beans, and sweet corn, which in large part have traditionally been produced in the northern and mid-western United States. Within the U.S. vegetable market, the existing trends toward greater consumption of fresh produce and frozen produce will continue to increase relative to the consumption of canned goods. Consumption of frozen vegetables is expected to rise 1 to 2 percent per year between 1995 and 2005 while canned food consumption is expected to remain flat (USDA 1996). There is also a growing emphasis on "clean food." Clean food refers to produce that is free of all pesticide residues. During the last decade, consumer preference has been increasing for produce of this nature. Vegetable produce that can be certified as pesticide residue free, and/or organically grown, will have an increasing market value during coming years (Zepp, 1994). Finally, within the fresh produce market, the consumption trend will continue toward more convenience vegetables.

Production Trends

Even though vegetable consumption as a portion of the total food products consumed is starting to level off, the forecast for vegetables continues to be a steady increase in production. The USDA forecasts a 3-4 percent annual growth rate in the U.S. horticultural industry through the year 2005 (Love, 1995). Horticultural production is forecasted to produce \$39 billion of output in the year 2,000, up from \$32 billion in 1995. The changing demographics and increased nutritional awareness which spurred the increase in vegetable consumption will continue to remain strong and assure a consistent market for the sale of vegetable produce. Production is expected to increase faster than the national population, and exports are expected to increase at a faster rate than imports, thus creating a 1-2 percent increase in the real price of horticultural commodities (USDA, 1995).

With consumption leveling off and production expanding, an increasing emphasis on high quality and product recognition will redefine the sources of supply to the various regional markets. The fruit and vegetable industry has responded to this flattening out of national consumption by looking for increased opportunities in international markets. Exports of fresh fruits and vegetables increased 7 percent per year between 1990 and 1994 (USDA 1995). Vegetable exports very closely follow changes in currency valuations, with exports flowing to Asian countries with currencies strengthening against the dollar, and imports coming from Latin American countries with currencies devaluating against the dollar. Being able to forecast currency trends will be important in order to be able to supply countries with strong currencies with the mix of products that they demand.

Long Run Factors

On the demand side, the performance of the domestic and foreign economies is an important factor in determining the demand for horticultural produce. When the economy experiences high growth rates, such as in the late 1980s, there is a rapid increase in the consumption of horticultural products. During the recessions of the early 1980s and 1991, the consumption of horticultural goods tended to slow down and the trend has currently flattened out (Love, 1995). Therefore, future economic growth will be a major factor in determining the future demand for horticultural goods.

The United States' economy, as well as the economies of two of their major export recipients, Japan and Western Europe, are expected to continue to grow, thereby assuring a strong demand for American cultivated horticultural products. The U.S. Department of Agriculture projects a 2-3 percent annual growth rate for the U.S. economy over the next ten years, thereby indicating a continued domestic demand for horticultural produce. As the baby boomer generation grows older, the national age distribution will become increasingly skewed toward older age groups. Older people tend to place greater importance on healthy eating, and therefore they increase their consumption of vegetables and fruits relative to other goods. An additional demographic characteristic that should also increase the demand for horticultural goods is the continuing immigration from Asian and Latin American countries. These ethnic and immigrant populations tend to consume more vegetables than the average American consumer (USDA 1995). Export projections are also favorable. The removal of export barriers with many Asian countries should continue to increase the exportation of goods in that direction.

On the supply side, new production technologies have continued to raise yields throughout the country (Figure 2.4). Producers are expected to increase yields at a long

run rate of 1-2 percent per year (USDA 1995). Production technologies that have contributed to increased yields include improved varieties, advances in biotechnology, improved cultivation methods, and increases in pest resistance. New marketing technologies and improvements should also increase the supply that is available on a global basis. Traditional marketing improvements have included improved storage and cooling techniques, new canning and freezing methods, and improved and faster transportation.

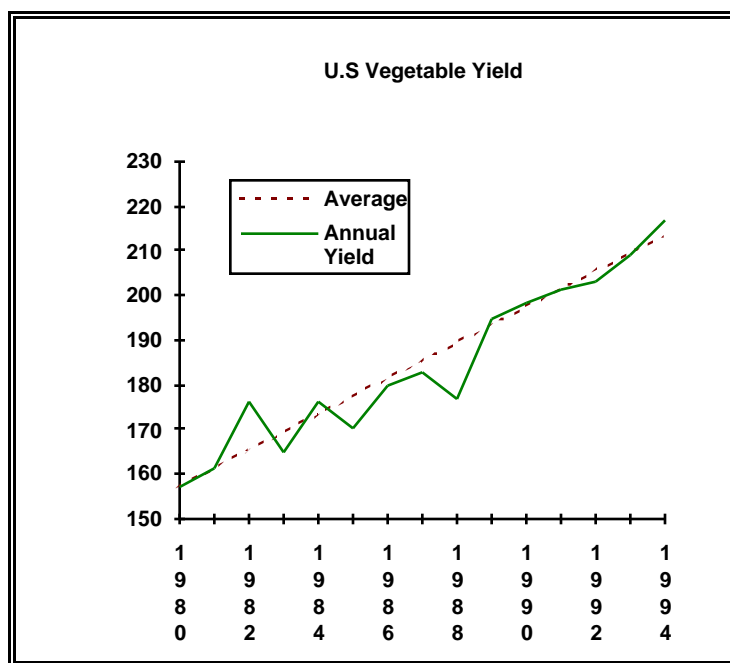


Figure 2.4 U.S. Aggregate Vegetable Yield

The biggest value-added marketing strategy to come about in the last decade is "light processing." Light processing is the preparation of convenience goods, and adds value to fresh produce. Packaging and brand identification are also relatively new marketing technologies, which are now widely used in the United States, but present a potential for expansion in foreign markets. According to Love (1995 p. 125), "Innovators who

develop technologies and new sources to meet this demand [for convenience goods] will profit the greatest in the next ten years."

2.5 Overview of Retail Marketing Network

The food retailing industry has continuously been modified since the beginning of time, but has undergone its most drastic changes since World War II. The major factors contributing to these changes have been technological innovations, such as transportation and cooling, increasing consumer incomes, demographic changes in the make-up of the household, and increasing health and nutrition awareness.

The most evident change in the food retailing industry has been the somewhat recent rise to dominance of the supermarket retailers. This transition to supermarkets began in the 1930's with the increased availability of automobiles (Manchester 1992). Cars were a technological innovation that allowed the household to overcome some of the barriers of time and space. Where previously consumers demanded large numbers of small stores located within a short walk of any home and intermixed within residential neighborhoods, cars made it economical to visit larger, centrally located retail outlets located outside the immediate residential zone. The ability to purchase a wide variety of items in a single place made it less expensive to drive to the supermarket than to visit a large number of specialized retailers.

Throughout the mid-1960's supermarkets increased in popularity. Real food sales in supermarkets increased annually at a 13-15 percent rate (Manchester 1992). Much of this food sales growth was caused by the increased popularity of the newer, larger, more diversified stores. This increased popularity is evident from the fact that sales of non-food goods at supermarkets rose at an even greater rate than food items. By the late 1960's, the

supermarket industry matured, and food growth slowed to an average annual rate of 4-5 percent. New competitors had entered the industry until most excess profits were depleted and the industry had become saturated.

In the 1970's, as inflation rose and low prices became a greater concern, supermarkets focused their strategies on providing the lowest cost product to the consumer. Inflation, and lower real prices throughout the 1970's, slowed real growth to less than one percent per year, bringing an end to the supermarket boom. In this mature industry, the retail supermarket infrastructure was in place, and competitive strategies to gain increased shares of the market changed from pure physical expansion and low pricing to providing a wider variety of products and services that provide greater convenience to the consumers. Since the middle of the 1970's, supermarkets have continued to increase in size, attempting to draw more customers through the attractiveness of greater product diversification.

Supermarkets have currently evolved into what the industry has categorized as, "superstores," "super-warehouses," and "hyper-markets." The conventional supermarket typically offers around 9,000 items, has annual sales of at least two million dollars, and earns 93 percent of its revenue from food sales, with the remainder coming from general merchandise. These newly classified stores began with the conventional supermarket and grew into hyper-markets as stores diversified to include deli's, bakeries, seafood departments, pharmacies, greater volumes of general merchandise, and larger floor space. The hyper-market, for example, has a minimum of 100,000 square feet, and makes sixty percent of their sale revenue from general merchandise (Manchester 1992).

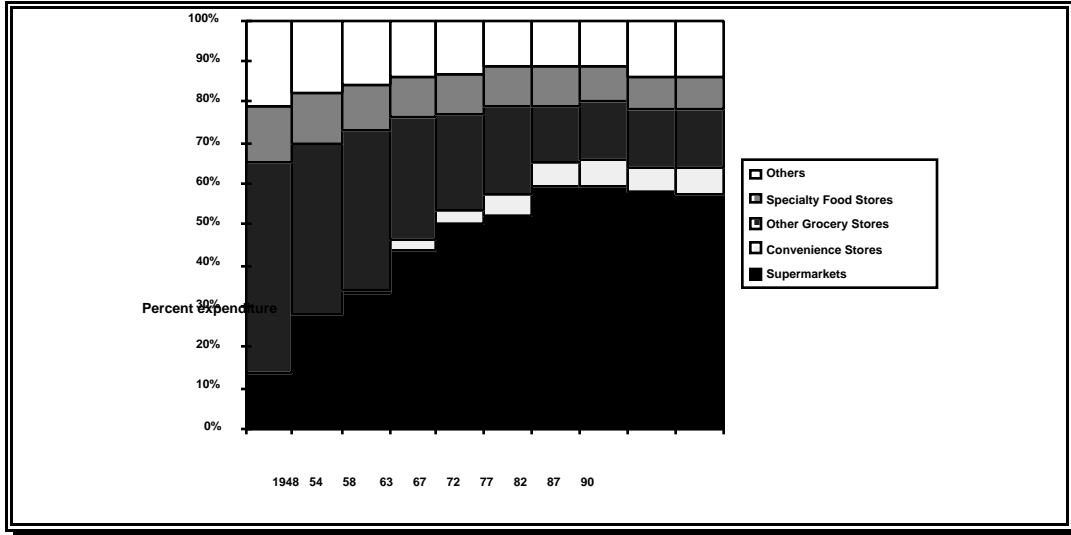


Figure 2.5 Consumer Expenditures for Food at Home by Food Store Group

Supermarkets, which include the other classifications of superstores, have evolved into the major retailer of fresh produce, with a 82 percent share of total produce sales. After having successfully revolutionized the produce retail industry during the 1950s - 1970s through the low price strategy that they followed, supermarkets have steadily increased their gross margins from produce sales. Gross margins increased from 18 percent in 1960s to 32.4 percent in 1987 (Linson 1988). Produce has also become a more important department within the supermarket. In the early 1970s produce sales accounted for five percent of overall store sales, compared to 8.4 percent produce sales in 1988, and frequently as high as 12-15 percent for many stores (Progressive Grocer 1988). Even more importantly, produce contributes approximately 21 percent of a supermarkets' overall profits, making it the most profitable department in most supermarkets (Scheringer).

While supermarkets continued to capture a larger percentage of the fresh produce market, grocery store *chains* grabbed a larger market share of total grocery store sales.

Supermarket chains are a centrally run food distribution center which own a number of retail outlets located in different geographic areas. Grocery store chains sales rose from 34 percent to 62 percent of total grocery store sales, between 1948 and 1989. The growing importance of grocery store chains demonstrates how the industry has been expanding and becoming more concentrated at the same time. An even more evident indicator of the selling power of the supermarket chains and growing concentration of the produce industry can be seen by examining the average share of total grocery store sales made by the leading four chains in any given metropolitan statistical area. For the major markets in the United States, in population centers over one million residents, the four leading supermarket chains make up 55 percent of the area's total grocery store sales (US Department of Commerce).

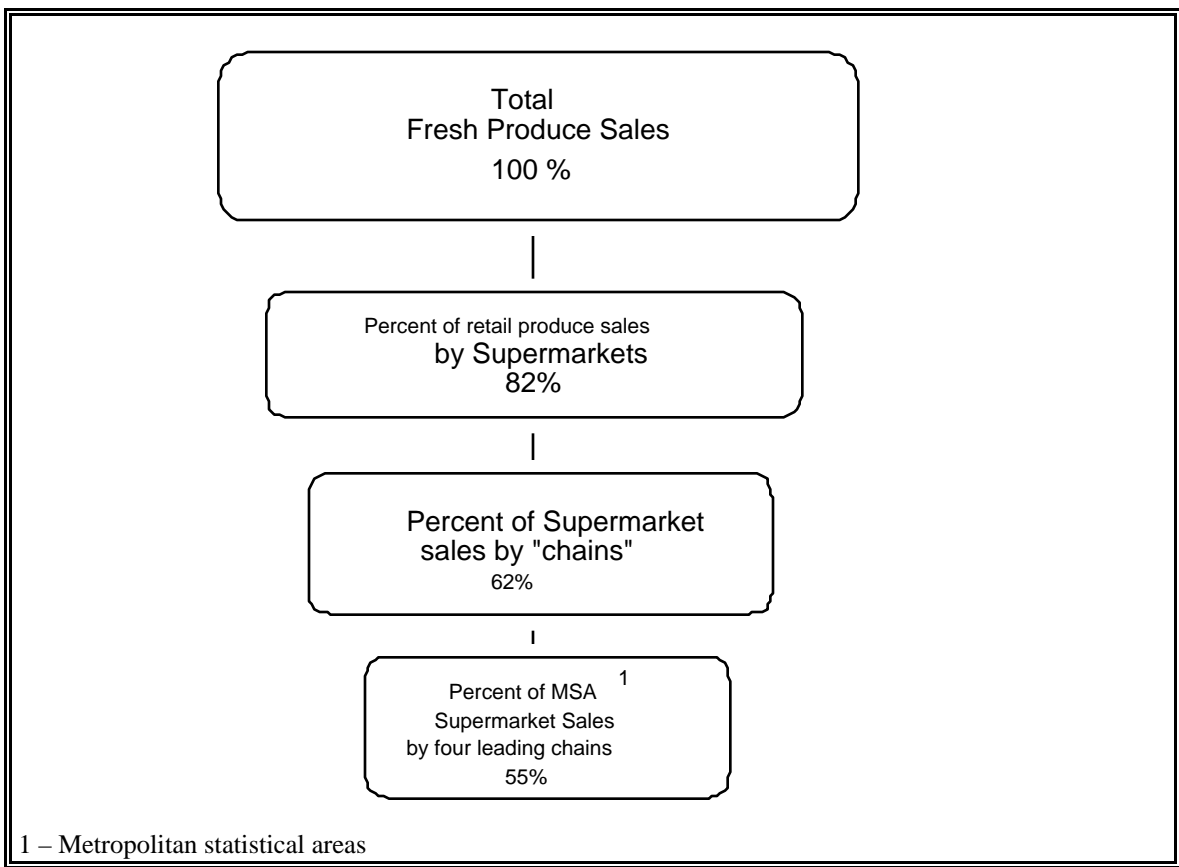


Figure 2.6 Concentration of the Fresh Produce Retail Industry

As supermarket chains have gained a larger share of the total grocery store market, the distribution of the types of supermarket chains possessing these shares has varied over the years. National supermarket chains have declined in importance since the late 1940s, while local and regional chains have increased their share of the grocery store market. As of 1987, local grocery store chains owned 23.5 percent of total grocery store sales (see Table 2.2).

Table 2.2 - Share of sales of grocery store chains by type of chain

Year	All Chains	Type of chain ¹					
		National	Regional	Sectional	Local	Wholesalers	Other
Percent							
1948	34.5	18.7	3.9	3.1	5.6	2	3.2
1954	38.8	19.1	6.3	2.9	7.6	2	2.9
1958	46.7	20.9	8.7	4.5	11.1	2	1.5
1963	49.4	18.8	9.6	6.6	11.4	1.4	1.6
1967	51.4	16.2	8.5	6.6	13.4	1.6	5.1
1972	55.9	15.4	9.2	11.7	11.2	1.5	6.9
1977	58.7	15.4	10.1	11.1	14.5	1.3	6.3
1982	61.5	12.2	11.1	10.8	20.2	3.5	3.7
1987	63.5	13.3	12.7	6.8	23.5	2.7	4.5

¹National: Stores in 3 or more geographical divisions. Regional: Stores in 2 or more geographical divisions. Sectional: multimarket stores in one or more geographical divisions. Local: Single Market. Wholesalers: Chains owned by grocery wholesalers. Other: chains of convenience stores or other grocery stores smaller than supermarkets.

Source: USDA Economic Report #660

As more chains have come to dominate the industry, the produce distribution system has been modified to reflect the changing needs of the chains. The largest chains typically have their own purchasing staffs who buy most of the chain's products, including perishable produce. This fresh produce is purchased by the chain's purchasing staff, and shipped directly to their central warehouses, where it is broken-down, repacked, and

shipped out to individual supermarket stores. The fresh produce marketing network reflecting the supermarket warehouse system which dominates the current situation in Southwest Virginia is depicted in Figure 2.7. The changes in the regional network caused by the existence of the proposed cooperative are illustrated in Figure 2.8.

Many of the largest chains also pre-prepare and process their own produce. In these cases their purchasing staff will purchase the necessary produce and have it sent to the processing plant, where it will be processed and sent to a central warehouse, from which it will be distributed to individual stores. The national share of supermarkets that operate their own warehouse rose from 30 percent to 47 between 1948 and 1977. Since 1977 the share of supermarkets operating warehouses has fluctuated both up and down without a definite trend (Manchester).

The one definite trend in the grocery store retailing industry is that stores have continued to grow larger, with greater variety of durable, food, and fresh produce goods offered, capturing a greater share of the food retail market. Coupling the facts that large supermarkets are capturing a greater share of the fresh produce market, and that these stores maintain central warehouses with a company purchasing staff, it becomes evident that there are fewer but larger purchasers of fresh produce, and these purchasers are becoming more dominant within the industry. Procurement of fresh produce is becoming more concentrated in the hands of the largest chain's purchasing staffs.

Fresh Produce Marketing Network

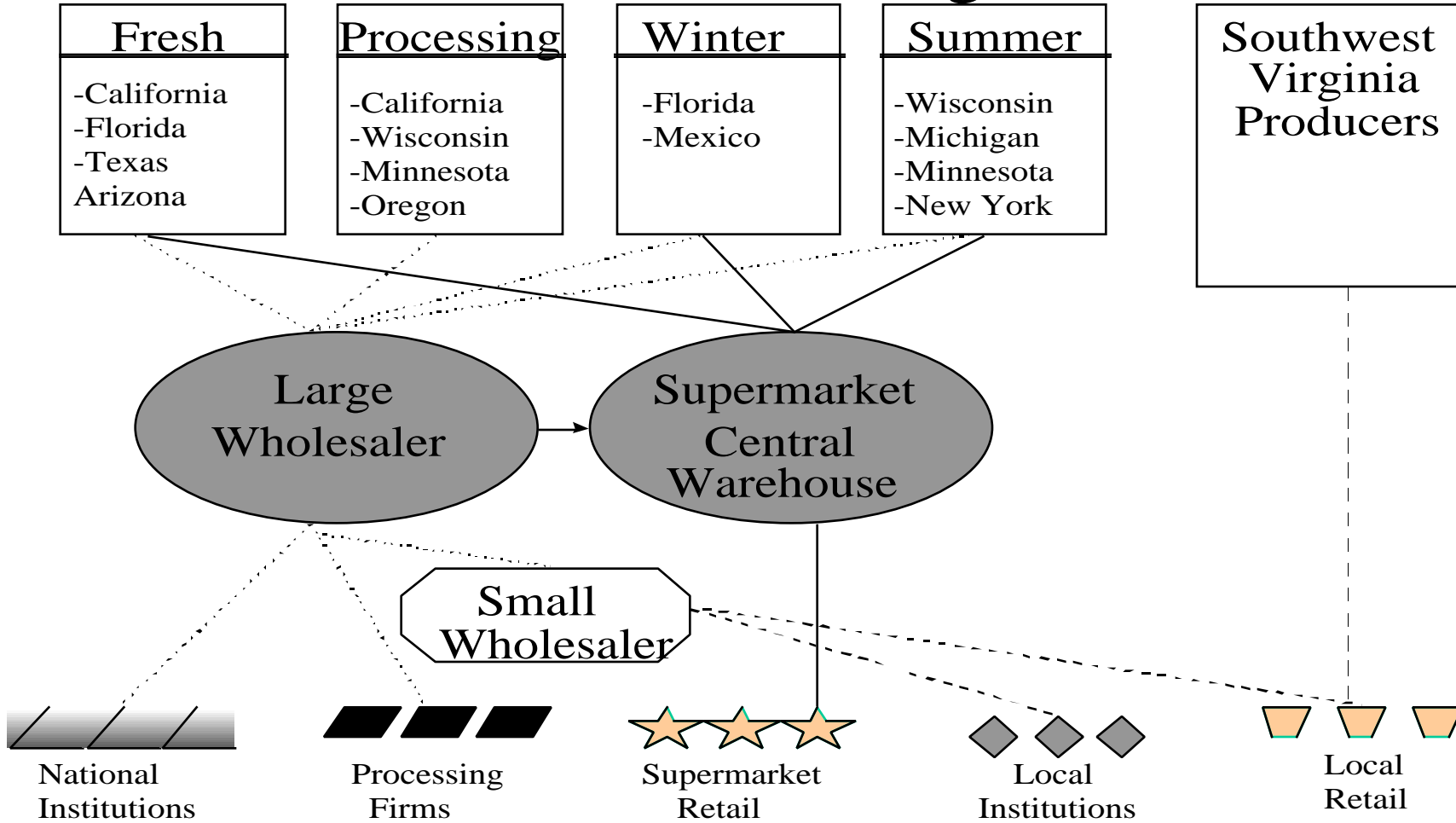


Figure 2.7 Supermarket Chain Distribution Systems

Proposed Cooperative

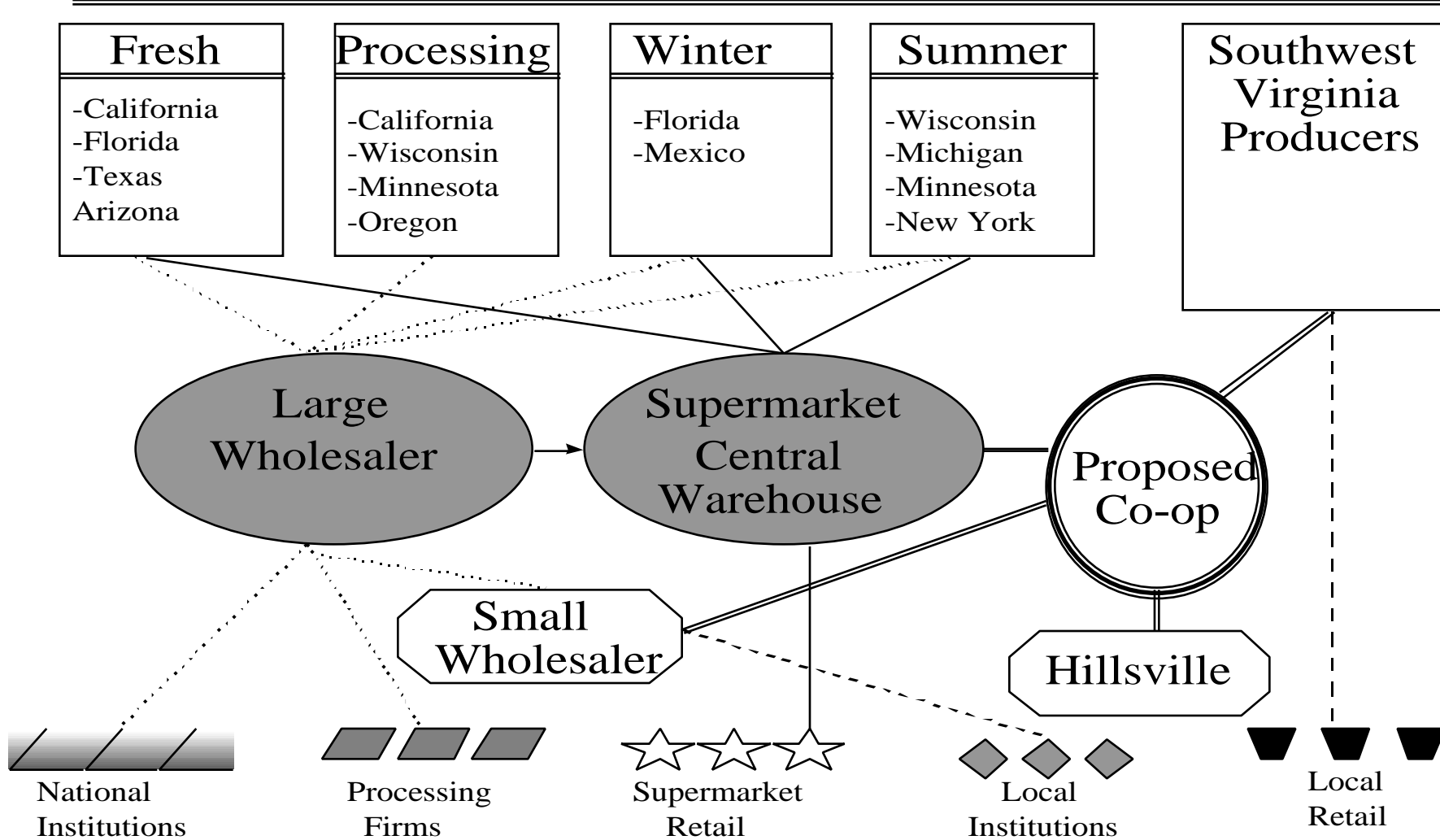


Figure 2.8 Food Distribution System Including Proposed Cooperative

With the new transportation and cooling technologies of the 1920s, more large chains started to purchase their produce directly from the shipping-point. Transnational shipping only became feasible with the purchase of very large quantities of produce, which provided a cost savings for the larger supermarkets that operate and manage their own central warehouses. The amount of direct purchasing by chains at the shipping-point leveled off in the 1980s. While the large chains could achieve a cost savings by avoiding the large wholesale market costs, many chains reverted to buying more produce from wholesalers because of the complementary services that they provided. Wholesalers provide a reliable supply of fresh produce, and often provide the services of packing, wrapping, and labeling the produce that they ship to the buyers' specifications. Due to the increasing number of products offered by supermarkets, it became easier to pay the wholesaler more money for produce that did not require any additional work for the central warehouse.

Trends of the 1980s proved that, while top-quality was a priority for the consumer, a constant, reliable supply of good quality produce proved the most important factor in the chain's procurement efforts (Progressive Grocer, 1996). A reliable source of acceptable produce was valued more than a somewhat erratic supply of less expensive, best-quality produce. Evidently, there is an acceptable level of quality that the consumer will continue to purchase, and therefore, a reliable supply of this "acceptable" produce became top priority and led to a greater volume of purchases through large wholesalers.

Wholesalers

With the increased demand for fruits and vegetables, the importance of the wholesaler in the distribution system also increased. Several different types of firms purchase fresh

produce as an input, modify it in some capacity, and resell it as a final good to the eventual consumer. Not all of these purchasers of fresh produce need the same quantities, varieties, sizes, and colors of produce. Therefore, many of them rely on wholesalers to make the initial purchases of fresh produce from the growers and to provide them with the specified product.

The process of physically moving fresh produce from the manufacturer to the retailer may involve between one and several wholesalers or shippers. The role of the wholesaler is to provide the specified produce to all branches of the food service industry that choose not to purchase directly from the producers. Because of the difficulties of dealing directly with producers, and the need for a year round supply, it is more convenient and economical for food service firms to purchase from wholesalers than from growers. The use of wholesalers is more prevalent in sectors of the food industry that provide some value-added service to the primary product. Members of the food service industry that purchase fresh horticultural produce and resell it in some modified form with value-added to the product include restaurants, fast food outlets, convenience stores, food preparation firms, and food processors.

As consumer preferences have changed over the years, the wholesaling industry has been transformed from a large number of simple service providers to a large market segment dominated by 32 large firms (Manchester). Within the class of wholesalers, there are two distinct types of wholesalers that operate quite differently. First, there are the merchant wholesalers who physically handle and take legal title to the produce. At a minimum, they provide a transportation service. At a greater level, they breakdown large shipments and reassemble them into smaller shipments for further distribution. Merchant wholesalers can be distinguished from the supermarket chain's produce purchasing branch, and from manufacturer's sales branches, because they are not owned by either

and act independently. The other type of wholesaler is the broker. Brokers provide the service of purchasing produce and having it shipped to designated locations without actually taking legal possession of the product.

Up until the 1950s, produce wholesalers were small, regional enterprises, specializing in one or a few crops. During the 1960s and 1970s, many of these small companies merged and diversified their services and have since grown into giant, national institutions. In 1987, the 32 largest wholesalers accounted for 65 percent of all sales of general-line wholesale establishments.

The primary users of these large wholesalers are the supermarket chains, who complement their shipping-point procurement efforts with additional wholesale purchases. Other primary users of large wholesalers are large restaurant and institutional suppliers, large food manufacturers and processors, smaller wholesalers, large fast-food chains and large convenient store chains. Smaller wholesalers also exist and provide produce to smaller, regional and local operations. Small wholesalers, such as those located at the Southwest Farmer's Market in Hillsville, Virginia, purchase large quantities of produce from the large wholesalers, break it down into smaller quantities, and reship it to local institutions, independent grocery stores, small supermarket chains, local food processors, and restaurant suppliers. These small wholesalers often act both as merchant wholesalers and as brokers.

2.6 Market Failure

The Phase One study indicated that horticultural production can be a profitable enterprise, there is a demand for local produce, and there is a desire to produce horticultural commodities locally, yet some obstacles seem to be restraining the

expansion into bigger markets. Certain horticultural goods are potentially far more profitable than the traditional crops that are being produced in the region. Farmers who have attempted to produce these horticultural crops at a level destined for markets outside the region have encountered barriers and constraints that have prevented them from achieving the levels of profitability that are being obtained by growers from the major producing regions. The major factor that prevents growers from obtaining high profits stems from the inability to break into the large national wholesale and retail markets dominated by supermarket chains. The inability to compete in these potentially profitable wholesale and retail markets that is caused by certain constraints which inhibit the region's producers ability to generate earnings. This inability to generate sufficient earnings despite the fact that increased regional production would be socially profitable, is termed a market failure.

A robust definition of market failure, which may be applicable to the Southwest Virginia case, is David Pearce's definition: "The inability of a system of private markets to provide certain goods either at all or the most desirable or 'optimal' level." Francis Bator (1958 p.351) defined market failure as "the failure of a more or less idealized system of price-market institutions to sustain 'desirable' activities, or to stop 'undesirable' activities." The main issue is the inability of private markets to produce the "optimal" or "desirable" level for society as a whole.

The literature pertaining to market failure usually falls into two broad categories, the externalities literature and the public goods literature. The origin of the modern externality theory comes from Mill, Marshall, and Pigou. Marshall and Pigou sought, by means of the externality concept, to expand the competitive model to include increasing and decreasing cost industries into the model for perfect competition (Davis and Hulett, 1977 p.4). In essence, externalities exist whenever the actions of one person affect the

utility of another individual for which no compensation, positive or negative, occurs. The public goods literature looks at potential obstacles that prohibit the attainment of allocative efficiency. Public goods are characterized by jointness, which is defined as simultaneous or non competing consumption. In general, allocative inefficiencies arise because of non-excludability and/or non-rival consumption which prevent the private market from functioning efficiently.

In the case of the Southwest Virginia region, the problems caused by the market failure include the lack of availability of local produce, higher retail prices, lower prices paid to farmers, and lower quality. If the region is able to overcome its barriers and break in as a supplier of local produce, the consequences should include higher quality produce and lower prices caused by increased competition, as well as economic development in a stagnate region. The apparent barrier to expanding production is the transactions costs of gathering information and organizing the growers.

There are a wide number of definitions in the literature for transaction costs (see Coase 1960 and Dahlman 1979). In general, transaction costs are any expenses that act as obstacles which prevent or interfere with the process of exchanging goods and services. The most commonly cited examples of transaction costs are the costs of writing contracts, the costs of locating parties with whom to trade, the costs of enforcing contracts, and the costs of bargaining (Cowen 1988). Cowen also points out that many transaction costs are informational in nature. The cost of gathering information that will lead to reducing risk to acceptable levels may be too high, thereby preventing the advancement of a feasible enterprise.

As Cowen states in the introduction to his book (p. 1) " The assertion of market failure is probably the most important argument for government intervention. At one time or

another nearly every sector of the American economy has been branded as a market failure. Such assertions are usually based on the theory of public goods and externalities." More recent developments in the theory of market failure appear to be more applicable to the Southwest Virginia case. Some of these developments deal with the idea that all goods are not 100 percent private, nor 100% public. Two such theories are James Buchanan's, "An Economic Theory of Clubs," and Robert Axelrod's, "The Problem of Cooperation."

The focus of these two theories is that, under the right circumstances, individuals acting in their own best interest can increase their expected returns by cooperating with other individuals, also working in their own best interest. This theory of cooperation largely arose as a response to Thomas Hobbes' pessimistic view of cooperation over 300 years ago. Hobbes argued that cooperation could not develop without a strong authority, and that government intervention is needed. The basic problem impeding cooperation occurs when the behavior of the other individual(s) is unknown. When cooperation depends on the behavior of another individual, and his behavior is unknown, a situation may be created whereby each person maximizing their individual expected returns achieves a sub-optimal outcome. This point can best be illustrated by examining the famous *Prisoners Dilemma*⁵ (for more detail, see Axelrod).

In the Prisoners' dilemma there are two prisoners, acting individually, without knowledge of the other's decisions, who must each choose to either cooperate or defect. Each can obtain a reward, or monetary payoff, based on their decision, taking into account the simultaneous decision of the other prisoner. The following matrix describes the range of potential payoffs.

⁵The prisoner's Dilemma game was invented by Merrill Flood and M. Dresher in 1950 and formalized by A. W. Tucker

		Prisoner B	
		Cooperate	Defect
Prisoner A	Cooperate	A=3, B=3 reward for mutual cooperation	A=0, B=5 sucker's payoff in favor of defector B
	Defect	A=5, B=0 sucker's payoff in favor of defector A	A=1, B=1 Punishment for mutual defection

As evident by the matrix, the maximum reward that can be achieved for any individual is five. This payoff can only be obtained by defecting while the other prisoner cooperates. On the other hand, if one cooperates and the other prisoner defects, the cooperator's reward will be zero, while the defector obtains the maximum payoff. If both prisoners cooperate, the payoff to each is three, while if both defect, the payoff to each is only one.

The dilemma is created because the behavior of the opponent is unknown. If one expects their opponent to defect, their only option that provides a payoff is to also defect. Each player will receive one point. If a prisoner expects their opponent to cooperate, he would maximize his return again by defecting. This will provide him with a maximum payoff of five. Therefore, maximizing one's individual expected returns, given his opponent's decision is unknown, will lead both sides to defect. This will provide a payoff of one for each player, which is below the payoff of three for mutual cooperation.

If these same principles are applied to the Southwest Virginia case, some insights can be gained into why cooperation is necessary, and why it hasn't evolved without outside intervention. If one equates horticultural production to cooperating in the prisoner's game, and the current alternative, corn or hay production, to defecting, it can be seen what is occurring. Horticultural production is a more profitable use of land (a higher payoff in prisoner's game) than corn production, but requires the cooperation of other

growers⁶. It is the uncertainty of other grower's cooperation that leads to the sub-optimal outcome. If producer "A" chooses to plant vegetables, while his neighbors choose to plant corn, producer "A's" vegetables will not provide him with the payoff he was expecting. Under the conditions of uncertainty, the less risky decision of maintaining current agricultural practices seems to be the best for each individually. The decision that is best for each individual has lead to a sub-optimal outcome in the region.

The element that is needed to overcome the prisoner's dilemma is communication. The flow of information between the two prisoners will assure that both cooperate and receive a payoff of three each. Given the chance to exchange information, the two parties will arrive at the decision that is mutually optimal. The same is true in the Southwest Virginia case. A more profitable alternative exists, but the exchange of information must take place, and the commitment to cooperate must be widespread.

The obstacle that has prevented the exchange of information in the region has been the high transaction costs of communicating and organizing. The equivalent in the Prisoner's Dilemma game might be that the prisoners are permitted to communicate with each other, but each must pay three units to a prison guard in order to do so. In this case the costs of transacting are too high and thus prohibit the necessary flow of information from taking place. In the Virginia case, the costs of organizing, communicating, and enforcing are high, while the outcome remains uncertain. This has prevented the growers from organizing and cooperating in order to take advantage of the higher profit potential.

In the prisoner's game with free communication allowed, two additional factors may lead to sub-optimal results. First, there is the transaction cost of enforcement. If the two

⁶The Phase One study describes how the market requirements can only be obtained through mutual cooperation to produce large volumes and share costs.

parties agree to mutually cooperate, then return to their cells, and independently take action, each continues to have the incentive to increase their payoff by shirking their agreement to cooperate, and defecting. If a player believes the other party will hold their end of the bargain and cooperate, he can maximize his returns by defecting. If the agreement is impossible to enforce, uncertainty continues to play a role and will lead to a sub-optimal payoff. Without proper enforcement, which is not costless, uncertainty will continue to exist, and the dilemma will remain unresolved.

The second issue is longevity, or the assurance of repeated trials. This factor may ensure an optimal outcome. If the two prisoners are sure to confront each other an indefinite number of times in the future, defecting may lead to retaliated defecting, which will cause a loss of income for both parties. Ensuring repeated confrontations should induce both prisoners into mutually cooperating. While this may appear a logical conclusion, longevity or continuity of the project may be an important issue impeding progress in Southwest Virginia.

Previous cooperative efforts have failed in less than four years time. The uncertainty of a long term payoff affects the behavior of the growers. A substantial commitment of resources is required to start up horticultural production. New machinery, living quarters for migrant workers, and irrigation equipment are all necessary investments. These investments are costly, and can only be paid for over a number of years of production. If uncertainty exists to the number of years that the cooperative effort will take place, an individual may maximize his expected return by not investing in the necessary equipment and continuing to plant the current crops with a lower, but certain, payoff. The reluctance of the Smyth County pepper cooperative's members to invest in irrigation equipment may be attributed to this kind of uncertainty.

In summary, obstacles exist that prevent growers from cooperating and taking advantage of cultivating the more profitable horticultural crops. The obstacles are the high transaction costs of communicating, organizing, and enforcing contracts, which if implemented will lead to eliminating any existing uncertainty. If costs can be shared, cooperation enforced, and uncertainty eliminated, the conversion to raising more profitable crops, and the corresponding higher payoff for all parties, can be achieved.

2.7 Theory of Economic Growth from the Division of Labor

Having examined the complexity of the fresh produce marketing network, one can see the wide range of diverse tasks needed to meet consumer demand. The process begins with the difficult task of determining consumer demand, and this task requires the expertise or skills of a market analyst. This information on consumer demand must then be relayed to growers, who need to acquire the appropriate technology and equipment to produce the desired commodity. The ability to take the knowledge about consumer preferences and use this knowledge to produce a quality product that meets these preferences involves the skills of horticulturists, cooperative extension agents, farm machinery manufactures, and the agricultural producer. Upon producing an acceptable product, it must be transported, cooled, graded, packaged, and stored. These post-harvest handling tasks require the skills of truckers, agricultural engineers, firm managers, and post-harvest handling experts. Finally, a market must be found and the produce must be sent to the appropriate warehouses. These marketing functions involve a broker, salesman, and other marketers. If the legal issues are included, a lawyer is needed, and an accountant's skills are needed to keep the books. One must be able to organize a series of sequential tasks, manage labor, purchase supplies, and monitor sales activities.

The entire process involved in producing and marketing fresh horticultural produce is summarized in Table 3.2 and categorized into its individual components. Each component of the process requires a particular skill to perform. The basic skills can be categorized into six descriptors by the professional expertise usually associated with the particular function. The six types of expertise needed at some point in the process include the following: farmer, business administrator, manager, horticulturist, marketing specialist, and agricultural engineer. Each of these types of expertise are defined in Chapter Three.

Long term economic growth can only be sustained by increasing output per unit of input used. There are three ways to increase productivity per unit of input: (1) increase in scale or specialization, (2) increases in efficiency, and (3) technological progress (Norton and Alwang, 1993). Southwest Virginia could achieve agricultural growth from all three of the areas mentioned above. The three growth potential areas often share common characteristics, and the discussion that follows will focus on the first area: scale and specialization. It will be argued that large scale production is needed to achieve specialization. Then, a firm with an organizational structure consisting of more specialized labor tasks is necessary in order to be able to adopt the other changes that will lead to efficiency improvements and technological progress. Increasing production and allowing for the division of labor into specialized tasks is an essential first step for many industries wishing to compete against larger, well established producers.

Looking at all the tasks necessary for producing and marketing fresh produce gives some insight into how specialization can lead to increased productivity. An individual grower would have to be proficient in all the professions mentioned above in order to successfully produce and market his product on a large scale. Typical corporate producers located in the major production regions have very distinct departments that are

specialized in each of the six categories. A typical large firm has a marketing and sales division, a labor procurement division, a full staff of marketing analysts, accountants and lawyers, horticulturists, a research and development team, several engineers and biotechnicians, foremen, truckers, mechanics, and packers. Each one of these jobs is held by a fully trained professional. This degree of specialization, or division of labor, gives the large producers an advantage in the operation of their firm over that of the small "jack-of-all-trades" farmer.

One of the oldest of all modern economic growth theories is the division of labor. Adam Smith, in *The Wealth of Nations*, dedicates the first three chapters of this historic publication to the concept of the division of labor. Even before Adam Smith, the famous Greek philosopher Plato (c.358 BC.), emphasizes the point that the division and specialization of all societal tasks is a requirement needed to reach the "ideal" state.

In Plato's Republic, he describes a practical or ideal city as a simple progressive city with farmers, builders, and craftsmen, whose simplicity has been derived, as if mathematically (Pappas 1996), from two principles:

- 1) humans taken individually, are not self-sufficient (Plato p. 369), and
- 2) people are naturally disposed to perform different tasks (Plato p. 370).

Plato elaborates on how to make this city more efficient, and introduces the principle of "the division of labor," whereby a social arrangement exists that guarantees efficiency by ensuring that the work is done by those best suited to do it. The most important component of Plato's ideal city is the assignment [specialization] of each citizen to the right task. Plato places great emphasis on this division of labor by stating,

injustice is a force, with the power of promoting disunion, that can exist within an individual or society (Plato p. 351)...injustice divides the group's members...the superiority of justice over injustice will not lie in the profitability

of particular actions, but in the profitability of being organized into a certain social pattern....where each inhabitant will perform a single task (Plato p. 370).

If allowed to interpret Plato's philosophical reasoning into modern economic jargon, one can see the incredible intuition he possessed. Plato bases his interpretation of justice on the two definitions stated above. Plato states that people performing different tasks must cooperate, and justice must ensure the cooperation among social groups with different functions. In other words, a well functioning "market" must exist that allows the orderly exchange of goods and services among individuals with different jobs. For Plato, injustice is disunion, or a "market failure," which he interprets as any force that prohibits specialization of labor and the cooperation among social groups with different functions. Many centuries before Coase or Pareto, Plato eludes to a role for the government to intervene and take action when the outcome they propose will benefit society as a whole (increase consumer welfare), even if it takes precedence over what a particular social group prefers (i.e. being taxed).

To conclude Plato's insights into the problem, one can examine a final quote from *The Republic*: "the greatest social disease, is people who live off of liquidated assets, who most flamboyantly breaks the rule of distributed labor" (Plato, p. 552, 564). What Plato calls the greatest social disease is prevalent in Southwest Virginia. There are below average educational attainment levels and a high rate of out-migration which contribute to the lack of specialized labor in many professions. The lack of certain highly skilled professional workers has lead to an inordinate number of unskilled, unemployed workers dependent on government assistance as a source of income. What factors prevalent or missing in the local economy have caused the region to be less productive than most regions of the country?

Adam Smith, with no reference to Plato's work, focuses much more on the economic aspects of the division of labor. Where Plato simply stated that specialization was necessary to create an ideal city, Smith explains economic growth through the efficiency gains created from specialization. Smith begins chapter one by proclaiming "the greatest improvement in the productive powers of labour, and the greatest part of the skill, dexterity and judgment, with which it is any where directed, or applied, seems to have been the effect of the division of labour" (p.3). Smith explains how dividing a single production process into specified labor tasks will lead to greater productivity, and hence, greater output. Smith elaborates on three major reasons why the division of labor will lead to increased productivity, which can be paraphrased as follows: 1) the effect of improvement from practice, 2) the savings in set-up-costs of moving from one task to another, and 3) development of improved production methods by specialized workers.

Kenneth Arrow (1979), elaborating on the work of Smith, shows how specialization needs to generate large increases in quantities produced in order to cover the costs of becoming more specialized. Division of labor leads to the specialization in certain tasks and learning each of these tasks at a proficient level requires an investment of time, effort and money. A farmer could invest four years in acquiring a marketing degree, but marketing his seven acres of cucumbers would probably not pay for the costs of this degree. The farmer would most likely have to abandon farming, concentrate on marketing, and charge a large number of individual farmers for the service of marketing their crops in order to pay off his investment. Similarly, a farmer who foregoes production in order to study tractor mechanics will most likely not recover his investment by only repairing his own tractor. He would need to sell his services to other tractor owners in order to earn a return from his investment.

In chapter three of the *Wealth of Nations*, Smith develops the hypothesis that the division of labor and the specialization of tasks is sustained by the growth of a market system. As one individual specializes in seedling production, another in plowing, and a third on grading, they will eventually have to trade with each other or sell their services to a common employer. The ability to trade or sell services depends on the complexity of the market. The more efficient market will allow for less costly buying and selling of goods and services, which will lead to increased specialization, which leads to increased productivity. The hypothesis of Smith leads one to examine the question: do factors exist that have prevented the market from developing in Southwest Virginia on the scale of development in other regions?

In the Ricardian or Platonic sense, each individual possesses some comparative advantages in the undertaking of different work tasks. Some individuals may possess a comparative advantage in physical strength while others have an advantage in adding numbers. The consequences of fully developing the skills in the area where one possess an advantage implies an investment of time and effort. The devotion of sufficient time and effort to developing these skills will prevent the development of other skills. This leads to the question: does some reason exist locally that has prevented growers from foregoing learning some task and specializing in others? Do barriers exist locally that have prohibited the market for goods and services to develop, which have had the consequences of prohibiting specialization and the increase in efficiency associated with it? Has some *failure* existed locally that has prevented the market from developing? These are all questions that are examined in Chapter Three.

Adam Smith continues his discussion on the division of labor by looking at some of the complications it brings about. While specialization can increase the value of cooperation, there is a real cost to cooperating, and this may lead to conflicts. Smith points out that, in

order to take advantage of cooperation, there must first be an exchange of information. Exchanging information, or communicating, is not costless, for it involves time, effort and resources to communicate effectively. An advantage in communication technology can lead to a comparative advantage in productive technology.

By expanding on Smith's idea of the cost of communication and the value of specialization, it is easy to imagine how a barrier to efficient communications could prevent the expansion of productive resources. Often, excess profits are generated by the early entrants into a particular productive sector. These profits are eventually competed down to normal profits as more and more firms enter the industry and take a share of the excess profits. Quite often, it is those with the information resulting from good communication that are able to enter the industry first, earn excess profits, develop economies of scale, improve technologies, and build up a base of loyal consumers, while other firms with substandard communication resources are often late to enter the market, or are unable to compete with the established industry leaders.

The costs of acquiring information created by specialization may consist of many different aspects. Some examples of communication activities and costs are discovering what currently exists, forecasting future trends, analyzing and deciding among alternatives, surveying large groups, bargaining, evaluating new technologies, searching for low costs, determining abilities of different sources, and learning where to look for information. Specialization has made the average person dependent on others for cooperation. No longer can a single individual carry out all the tasks involved in running and operating even the most primitive of family businesses. The days of the family wine label has been largely replaced with that of the large corporate vineyards.

Summarizing Adam Smith's work on the division of labor, it can be seen that specialization leads to greater efficiency and thus greater output per unit of input. While a competitive market should give the proper signals that guide people into specializing in different tasks, one must be able to sell his specialized skill to a large number of purchasers in order to recuperate their cost of specializing. Additionally, once the labor force is divided and specialized, there are new costs of cooperation, created by the need to communicate. An efficient system of communication that allows an effective exchange of information is necessary in order for specialization to work. It is easy to see the disadvantage faced by rural areas, where populations are less dense and communication technology generally lags behind the urban areas. Rural producers must face these two facts directly when considering any new production alternatives.

2.8 History of Cooperation

Cooperation means the voluntary act or operation of joining resources--physical, mental, and material--to achieve an end (USDA 1979, p. 1). Cooperation occurs when joining resources and working together allows individuals to accomplish something that they could probably not achieve alone. In agriculture cooperation generally refers to small producers pooling resources to lower expenses, share risk, and assemble large volumes in order to market goods that they otherwise would not be able to sell.

Cooperation, as known today, is the result of 200 years of evolution by economically disadvantaged populations, working together in an effort to increase their productivity and raise their standard of living. Cooperation has passed through many stages, including some that resembled pure communistic societies, to others more closely resembling modern profit maximizing firms.

Much of the early history and philosophical development of the cooperative movement can be traced back to England between the years 1760 to 1830. The Virginia Council of farmer cooperatives credits the start of agricultural cooperatives to 1844 by the Rochdale pioneers. The first cooperative societies are credited with arising out of class struggles by the impoverished proletariat, as an attempt to survive against the new dominating capitalist class in England. During the industrial revolution, not only were great economic changes taking place, but equally large social movements were accompanying the economic transformation. Feudalism had given way to capitalism, which opened the way for the rise of the capitalist class. Technical changes in industry and increasing international trade led to an emphasis on the mass production of export goods, and the need for cheap labor to maximize profits for the investors. Technical innovations led to an increasing substitution of machinery for human labor, increased efficiency, and benefits from economies of scale, all of which contributed to displacing a large number of artisans and craftsman from their means of production. This separation of laborer from the means of production created a large proletariat, or labor force, at the mercy of the capitalist owners.

With increased foreign trade, the British capitalists strove to maximize profits through increased production and cost minimization. The poor and desperate proletariat class was caught in a situation where they were being paid at little more than subsistence levels. In order to survive, this abused working class, with the help of better off philanthropists, formed consumer societies designed to purchase bulk quantities of bread and flour for their daily sustenance. These desperate attempts at survival are the first known cases of cooperative enterprises. A group of impoverished laborers pooled their resources in order to make common purchases. Pooling resources allowed the workers to reduce their

expenses by eliminating a portion of the good's retail price that would have otherwise been paid to the retailer.

The craftsman and artisans who previously produced for local markets were being replaced by the larger factories who were able to take advantage of increased efficiency through mechanization, specialization, and economies of scale and market higher quality goods at a lower price. In order to compete with the larger factories, associations of small producers began to pool their individual resources in order to purchase materials and machinery to be used in common, where otherwise they would not be able to afford to do so. The distinction of the first producer cooperative association is generally attributed to a group of unemployed Scottish weavers who merged their meager resources together in 1761 to economically cooperate by selling and buying to one another the few necessities of life. These weavers thus formed the Fenwick Weavers Society of Life (Reaves, 1944, p. 18).

Building on the experiences of the consumer cooperatives and the small producers' input buying cooperative efforts, two of the cooperative movement's leading pioneers, Robert Owen and Dr. William King of Brighton, identified themselves with the struggles of the working class and implemented some practical means of a cooperative way of life. Owen's teachings and cooperative living villages became famous, and by the year 1832, there were more than 500 societies organized to advocate the owenite philosophy. Owen encouraged self-supporting home communities, and strove to alleviate the destitute conditions of the impoverished workers. Owen's most famous project was the self-sustaining village at New Lanark, where Owen's practical attempts at cooperation strongly resembled today's communism. The world was not yet ready for this system, and his efforts eventually failed, but in doing so greatly contributed to both the evolution of communism and the cooperative movement.

Dr. King was more successful than Owen, many believe, because of his more rational understanding of economic principles. The system King advocated reflected much more the modern day cooperative movement, and incorporated the idea of accumulating individual profits derived from the collective sale of goods. King's system gave rise to the Rochdale cooperative movement. The Rochdale movement resembled the system of free competition, therefore it was able to avoid the hostile attacks of the capitalist class. The movement was founded on the principle of cooperation among of its members in order to obtain maximum profits for each individual. This cooperation led to the previously exploited workers being able to capture a portion of the retail profit that the capitalist owners were earning. The savings acquired through cooperation allowed the workers to reinvest in their own means of production. The Rochdale movement gave rise to the legal protection of Cooperative Societies for the first time in 1846.

Agricultural Co-ops

The industrial revolution had an impact on the rural social transformation that was similar to what it had on the lives of the urban proletariat. A combination of the demand for labor in the cities and the replacement of agricultural laborers with mechanized means created the conditions for a large migrational movement from the rural country-side to the urban areas. The increased proletariat workforce was what Marx came to term the home-market. A large number of wage laborers, who no longer owned the means to produce their own subsistence, were forced to rely on the market place as a source to purchase their food and goods needed for sustenance. Large investors took advantage of this opportunity to unite capital and exploit the technological changes in agricultural production techniques. This led to the transition from small peasant producers to larger,

more modern capitalist entities as the primary producers of agricultural goods in both Europe and the United States.

Large investors were able to accumulate capital which they used to purchase the best farmland, and that closest to the large urban areas. They used this advantage, or economic rent, in the production of cheap agricultural produce which they sold to the newly formed home-market in the urban centers. These large farming entities were able to capture a rent not available to the smaller, geographically isolated and disperse small producers, who were left scattered throughout the country side. Due to the greater distances, higher transportation expenses, inaccessibility of biological inputs, lack of modern technologies, and the inability to afford modern machinery, the small rural producers could no longer compete with the new modern capitalist farmers and thus failed to develop at an equal pace with the rest of the country.

As a response to the geographic distances and higher transportation costs, the small producers formed supply cooperatives, whereby they purchased large quantities of inputs together and shared the costs. This allowed them to purchase at a price below that of the retail price which they were previously paying individually. This cooperation eventually led to production cooperatives, where producers raised capital and purchased machinery together, such as tractors and irrigation equipment, and shared the cost and use of this equipment. This cooperation contributed to make modern equipment affordable to the individual, when otherwise it was only economical for the larger producers. Building even further on cooperative efforts, producers united together to market their produce by assembling large quantities for shipment and sharing transportation, management, marketing and packaging costs. These cooperative efforts were the only means the small producers had to compete with the larger mechanized capitalist, thus building the foundation for today's modern supply and marketing cooperatives.

Up until this point in history, cooperatives were a response by small producers to unite resources in an effort to achieve a cost savings. More recently, cooperatives have arisen to combat unfair market power by large suppliers or buyers. In the United States, retailing and thus produce purchasing, has become increasingly concentrated in the hands of fewer, larger firms. This market concentration has occurred at the same time that, in several regions of the country, family farm size has continued to decrease. This disparity between a few large buyers and numerous small producers of a perishable commodity has created an environment in which large purchasers can potentially exert unfair market power on the small producers.

Many feel that, due to the oligopsonistic nature of the agricultural production and marketing systems with its vertical linkages from producers of raw material to the final product sold on a supermarket shelf, the largest producers, processors and retailers are able to exhibit market power and obtain excess profits at the expense of the small producers of raw material. Small producers do not have the resources to purchase the capital equipment necessary to compete effectively with the industry's large agricultural producers.

Most of the increased attention on agricultural bargaining has taken place since World War Two, provoked by changes that took place in the food distribution system. A deviation existed between the small number of large buyers who possess considerable economic power, and the large number of small producers who possessed very little economic power. This disparity has caused the small farmers to search for ways to increase their bargaining power. In response to this need, bargaining associations have arisen. In the United States, three major federal laws were passed that gave legal authority to bargaining association. They were:

- 1) Capper-Volstead Act of 1922,
- 2) Agricultural Marketing Agreement Act of 1937, and
- 3) Agricultural Fair Practices Act of 1967.

Bargaining associations tend to arise when the prices paid to growers for a specific commodity are below the cost of producing that commodity. The loss of bargaining power is most frequently considered either an informational or technological problem. One side tends to obtain market power, and thus gain the advantage in bargaining, when they possess either information unavailable to the other party, or a technological production means superior to those of the other party. William Swank (1975) has classified certain informational and technological keys for combating market power through increasing bargaining power. They can be summarized as follows:

- 1) know alternatives by maintaining communications with a wide number of sources,
- 2) flexibility to supply alternative buyers by having adequate transportation and distribution systems in place,
- 3) acquire information on processing costs,
- 4) acquire information on retail prices,
- 5) know market requirements,
- 6) anticipate and react quickly to market trends,
- 7) overcome perishability issue by maintaining proper storage and cooling facilities, and long-life varieties, and
- 8) differentiate your product by creating consumer demand for your product.

In order for producers to possess bargaining power when dealing with handlers, processors or retailers, they must obtain the information presented above. Possessing all of the above information should allow a producer to obtain a fair market price, and eliminate any market power that the large retailers may possess. Obtaining the necessary information probably requires some physical structure such as a warehouse with office space, a modern communications system, and a fully staffed team including a broker, secretarial staff and lawyer.

As one might imagine, the financial investment required to obtain all of the relevant information is extremely high. Forming a bargaining association helps a number of small producers to share the costs of obtaining this information. Sharing the costs as a group can help make it affordable to acquire the necessary information, and make it profitable for producers to organize themselves so they can obtain higher prices for their produce. The bargaining organization can also provide leadership, carry out planning, and implement a program of market development on behalf of its members.

Agricultural cooperatives have five basic distinctive features (Kirkman 1979). The first distinctive feature is that cooperatives are democratically controlled by the member-users. Each member has one vote, no matter how large their use of the co-op. The second feature is service-at-cost. Cooperatives are not profit making entities in themselves, but rather they exist to maximize profits for their users. Cooperatives thus provide services at-cost in order to minimize expenses for their members. The third feature is there are limited returns on money members invest in their co-ops. Many co-ops build up their equity capital for operating funds from capital supplied by members. Most state laws fix the maximum return on this investment at eight percent. The fourth distinctive feature is that cooperatives are member-owned and financed. Unlike corporations which are owned by investors, cooperatives are owned by their user/members. The fifth distinctive feature is that operations are limited. Since cooperatives are awarded an antitrust exemption, they face certain limitations that prevent them from exploiting the ability to collectively produce and market goods.

Legal justification for agricultural cooperatives

Striving to create the conditions for increased competition and, therefore, a more competitive market are basic goals of a capitalistic, free market economy. The designation "market" implies a situation of buying and selling characterized by an agreeable exchange of goods, competitively determined prices, and the forces of supply and demand. There need not be a physical entity corresponding to a market – it may, for example, consist of the network of telecommunications across the world.

There are various types of legislative acts related to markets that are intended to achieve diverse outcomes. These legislative acts are primarily intended to aid producers and stabilize marketing conditions in the interest of the national economy⁷ (American Jurisprudence). The goals of the various federal enactment's discussed here are to create an environment designed to maintain the orderly market conditions for agricultural commodities through governmental regulation, controlling the shipment and distribution of such commodities. Specifically, these legislative acts coordinate parts of a single plan for raising farm prices to parity levels and seek to establish and maintain orderly exchange of commodities in interstate commerce in order to protect both the interest of the consumer and the purchasing power of the farmer.

The Sherman Antitrust Act (1890) was passed in the United States before the concept of agricultural cooperation had become well known. The Sherman Act had as a principle objective to declare as illegal any effort to contract or combine in the form of trust that leads to the restraint of free trade. At the time that this Act was being considered, an amendment was proposed to exclude agricultural producers from being included in the Act, but the amendment was defeated. In spite of the Sherman Antitrust Act, over the

⁷American Jurisprudence, 52 Am Jur 2d

next twenty years cooperative associations grew, and their impact on trade could be observed as positive and not as a restraint. Due to this positive impact, more courts rendered decisions favoring farmer cooperatives, and public policy as to the desirability of cooperatives became clear (Roy 1976, p. 99).

The Clayton Act of 1914 was a response to public opinion, and set the groundwork for future legislation which would be passed. The Clayton Act provided limited exemption to agricultural and horticultural organizations that were created for the purpose of assisting producers to market their products from being deemed illegal under the Sherman Antitrust Act. This Act protected the continued growth of agricultural cooperative associations for the time being, but legislation legitimizing and legalizing these new types of organizational structures was still needed to further clarify the legal status of agricultural marketing cooperatives. This led to the Capper-Volstead Act.

The Capper-Volstead Act of 1922 was primarily written and advocated by Andrew J. Volstead, a U.S. representative from Minnesota. The act was designed to provide farmers further exemption from the Sherman Antitrust Act. At the time, farmers were treated as individual firms and separate business entities and were prohibited by the Sherman Act from combining with their neighbors for the purpose of securing better treatment in the disposal of their crops⁸. Volstead argued that the law should be modified in order to allow farmers to take advantage of a form of organization that is often used by businesses. He argued that farmers combining in a cooperative association in order to reduce costs and increase supply is no different than corporations using or purchasing from the same plant in order to obtain the same objectives (Roy 1976 p. 72).

⁸Congressional Record, 1919; remarks by Volstead.

The Capper-Volstead Act was eventually passed in 1922 and repealed the Sherman Antitrust Act as related to farmers. The Act

authorizes producers of agricultural commodities to act together in collectively processing, preparing for market, handling and marketing their products, to have marketing agencies in common, and to make the necessary contracts and agreements to effect such purposes, and committing to the Secretary of Agriculture the power of regulation to assure that no organization monopolizes or restrains interstate trade to such an extent that the price of any agricultural product is unduly enhanced⁹

The Capper-Volstead Act (7 USC 291,292) covers only actual producers of agricultural products, but in enacting it, Congress recognized that agricultural producers who desire to organize for collective marketing may not have, at the outset, the necessary finances to do so, and may therefore seek capital from non-producers.

The legal issue of debate involved in agricultural cooperatives revolves around the antitrust exemption awarded to them. The Clayton Act includes a provision, codified in 15 USC 17, that the antitrust laws are not to be construed to forbid the existence and operation of labor, agricultural, or horticultural organizations, instituted for the purposes of mutual help, which are not conducted for profit. These nonprofit organizations or their members whom jointly use shared resources shall not be held to be illegal, combinations or conspiracies in restraint of trade¹⁰. The principle defect of the above cited legislation is that it only applied to non-stock organizations. The Capper-Volstead Act was intended to clarify the act for agricultural organizations and to extend it to cooperatives having capital stock¹¹. The general philosophy of these provisions is that individual farmers should be given, through agricultural cooperatives acting as entities, the same competitive advantage and responsibility available to businessmen acting through corporations as entities¹². Thus farmer producers may organize together, set association

⁹United States vs. Bordon Co. 308 US 188, 84 L Ed 181, 60 S Ct 182

¹⁰ Asso v United States, 362 US 458, 4 L Ed 2d 880, 80 S Ct 847

¹¹ Case-Swayne Co. v Sunkist Growers, Inc., 389 US 384, 19 L Ed 2d 621, 88 S Ct 846.

¹² Maryland and Virginia milk producers, Asso v United States, Supra

policy, fix prices at which their cooperative will sell their produce, and otherwise carry on like a business corporation without violating the antitrust laws¹³.

The Capper-Volstead Act authorizes the legal existence of associations of agricultural producers, provided that such associations are operated for the mutual benefit of the members who conform to the following requirements. First, no member of the association is allowed more than one vote. Second, the association does not pay dividends in excess of eight percent per annum. Third, the association shall not deal with non-members to an extent greater than for its own members.

By this time, the desirability of agricultural marketing cooperatives was so well accepted that five major marketing acts became official legislation during the next ten years, 1926 to 1936. The first was the Cooperative Marketing Act of 1926, which authorized the establishment of a specific division within the U.S. Department of Agriculture to promote cooperatives. This cooperation would occur through educational efforts to spread the knowledge of cooperative principles, practices, and beneficial impacts on society to the general public. The government agency responsible to carry out this function has changed over the last 70 years and is currently being carried out by the Rural Business and Cooperative Service of the U.S. Department of Agriculture.

Over the next ten years, 1936-1946, additional legislation was enacted in favor of marketing cooperatives including the Agricultural Marketing Agreement Act of 1937. This Act went further than permitting agricultural producers to organize into cooperative associations allowing them to enter into agreements with processors, handlers and other entities, including the U.S. Dept. of Agriculture, in the mutual marketing of specified agricultural produce including milk, vegetables and some fruits.

¹³Maryland and Virginia milk producers, *Asso v United States*, *Supra*

The Act also declared that the disruption of the orderly exchange of commodities in interstate commerce impairs the purchasing power of farmers and destroys the value of agricultural assets which support the national credit structure. The Act states that these conditions affect transactions in agricultural commodities with a national public interest and burden and obstruct the normal channels of interstate commerce¹⁴.

The Agricultural Marketing Agreement Act of 1937, contains most of the important legislation relevant to the Southwest Virginia case. The Act¹⁵ can be summarized into five major points:

It is declared to be the policy of Congress-

(1) Through the exercise of the powers conferred upon the Secretary of Agriculture under this chapter, to establish and maintain such orderly marketing conditions for agricultural commodities in interstate commerce and will establish, as prices to farmers, parity prices as defined by section 1301(a)(1) of this title.

(2) To protect the interest of the consumer by (a) approaching the level of prices which is declared to be the policy of Congress to establish in subsection (1) of this section b; gradual correction of the current level at a rapid a rate as the Secretary of Agriculture deems to be in the public interest and feasible in view of the current consumptive demand in domestic and foreign markets, and (b) authorizing no action under this chapter which has for its purpose the maintenance of prices to farmers above the level which it is declared to be the policy of Congress...

(3) ...to establish and maintain such production research, marketing research, and development project provided in section 608c(6)(I) of this title...

(4) ...to establish and maintain the orderly marketing conditions for any commodity ... in the interest of producers and consumers, an orderly flow of the supply thereof to market throughout its normal marketing season to avoid unreasonable fluctuations in supplies and prices.

(5) ... such regulation pursuant to any order as will tend to avoid a disruption of the orderly marketing of any commodity and be in the public interest...

¹⁴ May 12, 1933, ch. 25, title I, 1, 48 Stat., 31; June 3, 1937, ch., ch. 296, 1, 2(a), 50 Stat. 246

¹⁵ 602. Declaration of policy; establishment of price basing period; marketing standards; orderly supply flow; circumstances for continued regulation

Additional legislation dealing with agricultural cooperatives includes the Agricultural Fair Practices Act, which prevents processors from exerting market power on the producers by threatening to pull out of the region in the case that the producers organize themselves into a bargaining organization. This statute strengthens the farmers' ability to bargain and market effectively by reaffirming their right to join together and operate cooperatives without interference¹⁶.

The Agricultural Fair Practices Act deals with the relations between growers and produce purchasers at any level of the marketing network. Briefly summarized below, the act protects the producers by forbidding any "handler" to engage in any of the following six practices:

- (a) to refuse to deal with an individual producer because the producer belongs to an association of producers.
- (b) to discriminate against any producer with respect to price, quantity, quality, or other terms of purchase because of a producers membership with a bargaining association.
- (c) to coerce or intimidate any producer to enter into or maintain breach, cancel or terminate a membership agreement with an association of producers or a contract with a handler.
- (d) to offer any inducement for ceasing to belong to a producer association.
- (e) to make false reports about finances, management or activities of an association of producers.
- (f) to conspire with another individual to violate one of the above mentioned statutes.

Another important Act designed to protect the producers of perishable produce is the Perishable Agricultural Commodities Act (7 499a-499s). This act is designed to protect the producers of perishable produce, who must often entrust their produce to purchasers thousands of miles away, from unfair and unlawful dealings with purchasing entities. The Act declares unlawful any discriminatory, unreasonable, or deceptive

¹⁶ 1968 US Code Cong & Adm News 1875

practice in connection with the weighing, counting, or determining of quantity of agricultural shipment received. It also protects the producer from unnecessary delays in payment, destruction or dumping of produce without just cause, misleading statements, misrepresentation of verbal contracts, fraudulent altering or tampering of identification labels, unfair commissions, or illegal substitution of produce.

In summary, federal legislation that permits and protects agricultural cooperative marketing associations have as their purpose to secure for its members the advantages of cooperative bargaining in selling their produce, and to allow them to perform certain functions at a lower per unit cost than could be achieved by acting individually. The cooperative marketing system is designed to guarantee fair prices to the producer, a fair wage to labor, and to prevent extortion upon the consumer. In addition, the cooperative eliminates unnecessary expenses and costs, as well as the enormous speculative profits realized by combinations that had taken control of the entire process between the producer and consumer (18 Am Jur 2d, 4.)

Various federal enactments and state statutes contain provisions designed to establish and maintain orderly marketing conditions for agricultural commodities by the control and regulation through government agencies. The establishment of marketing cooperatives creates an environment of increased competition, which prevents the exertion of market power by the larger producers and distributors. Economic theory provides the basis for the preferential treatment awarded to agricultural marketing cooperatives. By allowing the small producers to cooperatively market their produce when otherwise they could not afford to do so, increased competition is created which prevents large producers from exercising monopolistic power, bringing the price of the produce and the quantity

produced closer to competitive equilibrium levels. Through increased competition, consumer surplus plus producer surplus is being maximized which creates optimal economic conditions on a national level.

2.9 Chapter Summary

This chapter was designed to review historic developments in the region, summarize production and consumption trends, outline economic concepts relevant to Southwest Virginia, and summarize the history of agricultural cooperatives in order to establish the background for the research of this thesis. The fresh produce industry continues to both grow and become more concentrated in the hands of fewer firms. There is potential for capturing a part of the produce industry by supplying large, Virginia-based supermarket chains with Virginia grown produce. An extensive marketing analysis shows that there is consumer demand for fresh, locally grown produce for supermarkets.

The chapter began by examining why this research is important. The regional characteristics were outlined, the importance of agriculture to the region was demonstrated, and the Phase One study was reviewed. Next, the concept of market failure was explored, and reasons why this potentially profitable enterprise has not come into existence. The question of market failure was answered by looking at the constraints to breaking into the industry: high transaction costs of organizing, and the inability to diversify and specialize into all the labor functions needed to produce and market a quality product. Both of these contributors to the market failure stem from the fact that local growers are small and disperse.

The response that was proposed to this dilemma is the formation of a farmers' cooperative, whereby local growers can pool resources, share costs and jointly work to

meet market requirements. While a cooperative can potentially address all the restrictive barriers and constraints, it is somewhat controversial. Several failed cooperatives have contributed to a local, pessimistic view of cooperative organizations. It is the contention of this author that the past failures have occurred because of an inadequate internal organizational structure that neglected to address key factors in running and operating an enterprise of this nature. The analysis in Chapter Two leads to the conclusion that identifying the details needed to run the operation, and creating an internal managerial structure that accounts for all these identified factors, can greatly increase the cooperative's probability for success.

The production and marketing components will be broken down into specific tasks in Chapter III. Specifying all required tasks is the first step needed in order to design the optimal organizational structure that addresses the needs of the organization. By identifying all production and marketing requirements, and addressing each task individually, a proper flow of information can be assured within the organization. The proper flow of information from consumer preferences to production technologies will greatly increase the project's chances for long-term profitability.

Chapter 3: Critical Factors and Key Issues

Introduction

The production and marketing of fresh produce is a diversified and complex process. It involves not only the physical production, handling, and transport of produce, but it also involves a two-way flow of information along a complicated communication network. In a well functioning process the information flow starts with consumer preferences, which are translated into retail industry trends. These trends, or market requirements, are communicated to wholesalers, shipping-points and finally to producers. In the region associated with the current study, a problem in the system occurs because of a breakdown in the communication between consumer demand and production.

A complete list of all the tasks involved in producing and marketing fresh produce is presented in this chapter. Along with the specific tasks, the corresponding abilities or skills needed to effectively carry out the tasks are emphasized. Each task is examined in detail, to determine if an adequate division of labor has occurred in the region. The issue of market failure in the region is examined to determine if some barriers or constraints exist that prohibit the proper execution of all specific tasks. If barriers do exist, an analysis is conducted to identify what needs to be done to overcome these barriers, and to examine the role of government in assisting the local producers. In addition to looking at the role of government in overcoming the market failure, the issue of justifying government intervention and the use public funds for private causes is analyzed.

3.1 Specialized Tasks Needed to Compete in the Fresh Produce Industry

The physical production and marketing of fresh produce starts at the farm and ends at the supermarket register. Even though the transaction concludes at the retailer's register, consumer preferences and changing trends must flow back to the producer. The flow of physical produce is linear, traveling from farm to shelf, while the flow of information needed to satisfy consumer preferences is circular between grower and retailer. The flow of information is much more difficult to monitor and control than the flow of produce, but is an equally essential component of the production and marketing process. If physical product does not arrive at a destination, it is missed, but if information fails to travel the length of the marketing network, no one may know.

The specific tasks needed to produce and market horticultural commodities can vary, depending on the nature of the production unit and the specific market of the retailer. A large corporate producer and a small family farm need to address the same major issues to participate in the market, but may approach these issues with a series of different tasks. In the Southwest Virginia case, small producers must unite, form a cooperative, pool resources, and market produce to large retailers. A list of all major functions needed to carry out this production and marketing process is provided in Table 3.1, followed by flow-charts that graphically depict the same process in Figure 3.1.

Table 3.1 Physical Production/Marketing Tasks

- * represents communication tasks or information flow
- represents physical tasks

Function	Responsible for Execution
<u>1) Pre-planting preparation</u>	
* determine crop and variety	- Board/extension/broker
* determine planting and harvesting dates	- Extension/Broker
* sign marketing agreement with cooperative	- growers/manager
* order migrant labor through co-op	- growers/manager
• determine production technology	- extension/manager
• purchase machinery	- growers
• purchase inputs	- growers/manager
• prepare land	- growers
• arrange for labor housing	- growers/manager
<u>2) Grow or purchase seedlings</u>	- grower/manager
<u>3) Transplant seedlings</u>	- grower
<u>4) Regular care</u>	
* coordinate technical visits by extension agents	- extension/manager/grower
• manage labor	
• irrigate	- grower
• fertilize	- grower
• weed	- grower
• control pests	- grower
* inform co-op of quantities & quality	- grower
<u>5) Harvest</u>	
* inform co-op of delivery times and volume	- grower
• assure sufficient labor	- grower
• assure removal of field heat	- grower
• initial in-field-grading	- grower
• transport from field to truck	- grower
<u>6) Transport to Shipping-point</u>	
* arrange delivery with co-op	- grower/manager
• load truck	- grower
<u>7) Produce arrives to Shipping-point</u>	
* inform produce purchasers of quality/quantity	-grower/manager
• unload truck at co-op	- manager
• temporarily store produce	- manager
<u>8) Grading</u>	
* know market requirements	- broker/manager
* know packaging requirements	- broker/manager
* arrange transportation	- manager
• accounting of produce received	- manager
• run produce through grader	- manager
• wash produce	- manager
• pack produce	- manager
• label, advertise, "extras"	- broker/manager
• store and cool	- manager

9) <u>Shipping</u>	
* establish delivery destination	- broker
• load produce on truck	- manager
• accounting of produce leaving, sales	- manager
• accounting of money owed to farmers	- manager/broker
• ship produce	- manager
10) <u>Accounting</u>	
• collect accounts receivable	- broker
• pay growers and accounts payable	- manager
11) <u>Pre-planting planning</u>	
• annual review	- all parties
* contact potential buyers	- broker
* establish relationships with buyers	- broker
* determine market trends and requirements	- broker
* determine product mix	- all parties
• sign marketing agreements	- growers/manager

All tasks in Table 3.1 are identified as either physical tasks or informational tasks. Physical tasks include such activities as harvesting, grading, packaging, transporting, accounting, meeting, etc. Informational tasks include communicating with growers, defining market standards, establishing relationships with buyers, determining product mix, arranging transportation, and other activities related to communicating, informing, educating and building relationships.

All tasks outlined in Table 3.1 are essential to the process of producing and marketing produce. Each task must be addressed to ensure that both information and product flows efficiently between the extremes of the marketing network. In order to successfully carry out each of these tasks, a number of different professions must participate in the process. The key occupations needed to fulfill all functions are grower, broker, manager, and horticulturist.

The essential production and marketing tasks are represented graphically in Figure 3.1. Each of the specific tasks listed in Table 3.1 must be addressed at some point along the marketing network shown in Figure 3.1. A breakdown at any point in the network may be enough to cause serious damage to the region's cooperative effort.

The eleven major functions outlined in Table 3.1, and the subsequent tasks listed beneath them, are not all inclusive. They are intended to bring to the forefront the general functions that must be carried out. This list is not intended to include every specific task that may be required to carry out each function. Each of the eleven major functions may include hundreds of separate tasks. For example, listed under Function #1, "Pre-planting Preparation" is listed the task "purchase inputs," which depicts the manager and grower as parties responsible. Much more is involved than the simple physical act of going to the store to buy fertilizer. First, it must be determined what inputs the co-op will purchase collectively for the growers, and which inputs the growers will buy separately. Secondly, the production technology must be chosen, and the technical "package" must be prepared. Thirdly, growers must sign a contract ensuring that they will comply with the specific instructions set out in the production "package."

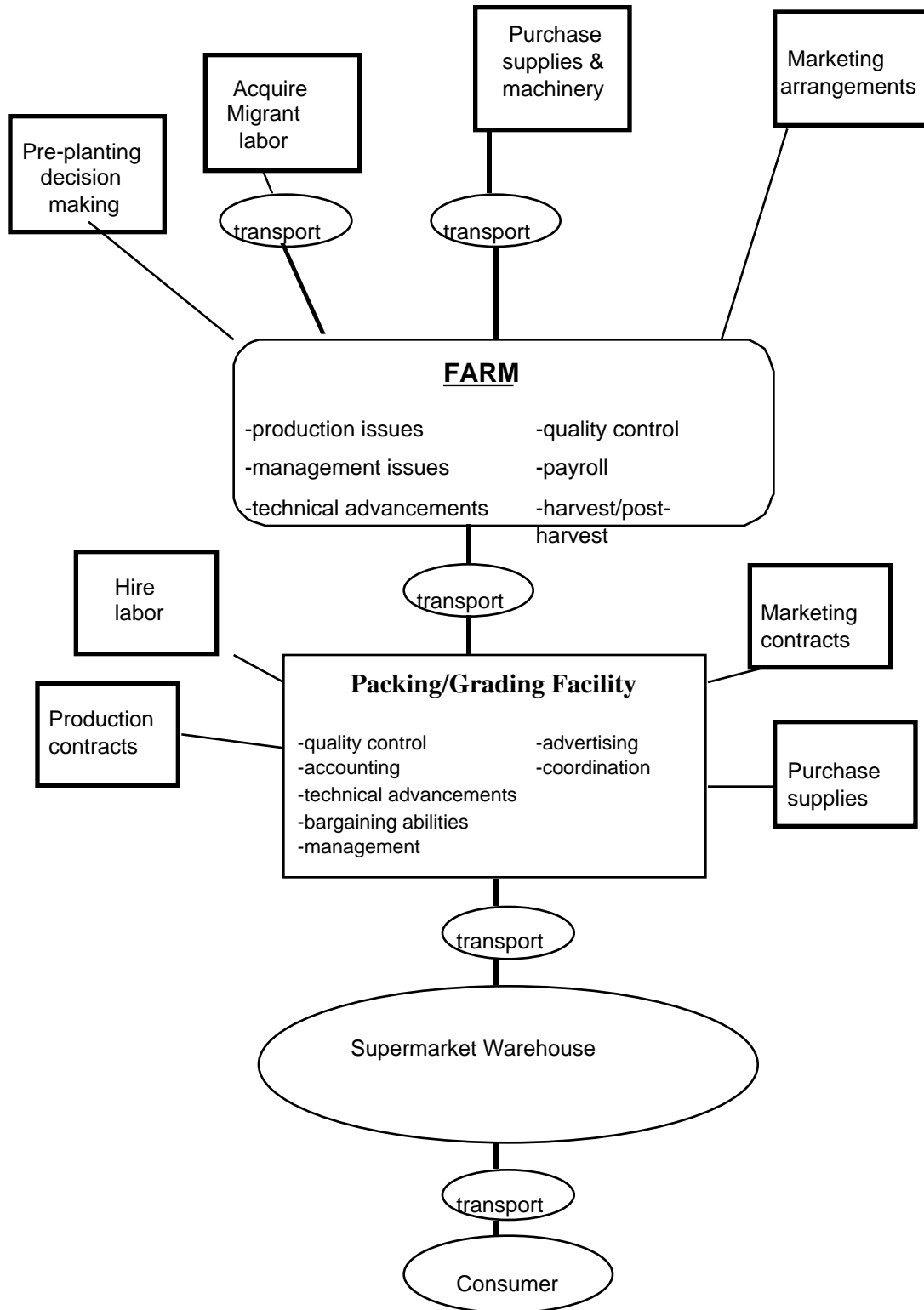


Figure 3.1 Graphical Representation of the Components of the Marketing Network

The objective of presenting Table 3.1 is simply to identify the major functions necessary to produce and market fresh produce, and the party responsible for executing the task. In order to carry out each specific task, a number of diverse skills is required. These skills can be classified into six different professions that possess the abilities needed to execute the tasks. They are business administrator, manager, agricultural engineer, horticulturist, marketing specialist and farmer. As these titles imply, each profession requires distinct, specific skills and abilities to perform their tasks effectively. Following are brief definitions that specify the skills typically possessed by each of the six professions.

- marketing specialist - responsible for all functions related to selling the produce such as communications with buyers, market analysis, financial forecasting, contractual arrangements, price and quality issues, grading and packing standards, and bargaining.
- business administrators - responsible for the entrepreneurial functions of running a business such as accounting, planning, forecasting, gathering information, communications, paying and collecting bills, day to day finances, writing contracts, elaborating business plans, and coordination between market and facility.
- manager - responsible for all issues related to supervising labor, quality control, coordination between producer and marketer, transportation, and contractual compliance.
- agricultural engineer - responsible for all technical issues related to post-harvest handling, grading, packing, cooling, storage, waste removal, and construction.
- horticulturist - responsible for the technical issues related to production, such as planting and harvesting times, variety selection, input use, and determining agricultural practices.
- farmer - responsible for day to day production issues, such as supervising labor, irrigation, application of chemicals, care of crops, planting and harvesting, and preliminary grading.

Previously, all major tasks that are required in order to diversify into horticultural production were identified. Now that the six skills required to carry out these tasks have been defined, a new list of tasks is presented, with the corresponding skill requirement accompanying them. This new list is broken down into three categories: 1) pre-planting preparations, 2) production, and 3) post-harvest handling. Creating the list in this fashion demonstrates that very specific skills are needed for each of the three major components. This ordering method may allow one to gain a perspective on where the system fails to fulfill its functions.

Table 3.2 Skills Required To Carry-out Production and Marketing Tasks

1) PRE-PLANTING PREPARATIONS *SKILLS NEEDED TO PERFORM TASK*

- Market analysis

- | | |
|-------------------------------------|-------------------------------|
| * determine potential buyers | - marketing specialist |
| * develop relationships with buyers | - marketing specialist |
| * choose product mix | - marketing specialist/farmer |
| * determine varieties | - horticulturist |
| * determine acreage | - business administrator |
| * arrange production contracts | - business administrator |
| * determine planting dates | - business administrator |

- Production Technologies

- | | |
|------------------------------------|--------------------------|
| * purchase supplies | - business administrator |
| * purchase machinery | - business administrator |
| * prepare irrigation | - farmer |
| * choose planting/harvesting dates | - farmer |
| * order transplants | - business administrator |

- Labor

- | | |
|--------------------------------|--------------------------|
| * determine No. workers needed | - business administrator |
| * learn standards/obligations | - business administrator |
| * recruit crew | - business administrator |
| * prepare housing | - business administrator |
| * prepare for feeding labor | - business administrator |

- Post-Harvest

- | | |
|-----------------------------------|--------------------------|
| * determine technology | - agricultural engineer |
| * purchase supplies | - business administrator |
| * determine volumes | - business administrator |
| * develop communications | - business administrator |
| * coordinate with growers | - business administrator |
| * develop relationships w/ buyers | - marketing specialist |

* packaging/advertising

- Ag. engineer/marketing specialist

2) PRODUCTION

SKILLS NEEDED TO PERFORM TASK

- Planting

* prepare land

- farmer

* produce seedlings

- farmer

* transplant

- farmer

* treat soil (herbicides/fungicides)

- farmer

* coordinate labor

- business administrator

- Care

* fertilize

- horticulturist/farmer

* irrigate

- horticulturist/farmer

* care & weed

- grower

* apply pesticides

- horticulturist/farmer

* manage labor

- business administrator

- Harvest

* manage labor

- business administrator

* communicate with grading facility

- business administrator

* preliminary grading

- business administrator/marketer/farmer

* field packing

- business administrator/farmer

* remove field-heat

- farmer/horticulturist

* transport to facility

- business administrator

* control quantities

- business administrator

3) POST-HARVEST HANDLING

- Shipping-point Market

* communicate with growers

- business administrator

* communicate with buyers

- business administrator/marketing specialist

* coordinate transportation

- business administrator

* receive/unload produce

- business administrator/manager

* grade produce

- business administrator/manager

* wash product

- business administrator/manager

* place in boxes

- business administrator/manager

* cool/store produce

- business administrator/manager

* load on trucks

- manager

* charge growers for services

- business administrator

* collect from buyers for sales

- business administrator/marketing specialist

* pay growers for product

- business administrator

This table brings to light the fact that the skills required for pre-planting preparations, which are largely planning oriented, are those of a marketing specialist and business administrator. Production principally requires the skills of a farmer and horticulturist, while post-harvest handling requires the skills of a manager and business administrator.

The role of specialization of tasks has been shown to be important in helping to facilitate economic growth. This research examines why this particular specialization and division of labor has not occurred in the Southwest Virginia study region. Kenneth Arrow (1979) elaborated on the importance of quantity in recovering the cost of specialization. A specialized service must be performed at large enough volumes to charge a fee which is less than the foregone income of the buyer doing the chore himself. In order to sell these newly specialized services, a market for them must exist that allows the orderly exchange of services. In order for an orderly market to arise, sufficient levels of supply and demand for these services must be present in the region.

Having defined the six basic specializations involved in producing and marketing fresh produce (farmer, horticulturist, business administrator, manager, marketing specialist, and agricultural engineer) one can examine how they are interrelated and interdependent. All six professions exist in the study region, but a force is lacking that brings them into a cooperative working relationship. In other words, professionals from all six specializations must cooperate in order for them to produce and market a profitable commodity. A horticulturist alone, without the farmer's land or the manager's ability to administrate labor, may possess the knowledge, but will lack the capability to produce the commodity. A farmer and a marketing specialist working together will need the services of an agricultural engineer in order to obtain the technology necessary to grade and cool produce to market standards. In the Southwest Virginia case, horticulturists and farmers may be able to work together to produce a high quality crop, but may lack the marketing capabilities to meet the large buyers' standards and requirements.

From these examples it can be seen that specialization has occurred, in the sense that all six of the professions listed above currently exist in the region. What has not occurred is

all six professions collaborating in the production and marketing of fresh horticultural produce. Obstacles or barriers exist that have prevented individuals or firms specialized in these six professions from organizing themselves into a cohesive unit. This unit must incorporate all expertise whereby each component contributes their specialized service to the group in return for a portion of the profits created by the overall work of the group.

The current situation in Southwest Virginia is that the small farmers take on the role of all six professions simultaneously, and therefore find it difficult to be efficient at any of them. The small farmer decides what to plant, teaches himself how to cultivate, cares for his crops, acquires and manages labor, field packs, loads, grades and packages produce, all while trying to find a buyer for his produce. The inability to concentrate or specialize on a single task prevents the grower from obtaining higher returns on his investment. If a group of individuals possessing all of the expertise needed to produce and market fresh produce were to divide and specialize in specific aspects of the process, together they would be able to achieve higher returns than they are capable of achieving working independently.

3.2 Market Failure in Southwest Virginia

The potential for generating profits should have drawn professionals together, whereby each sold their services for a share of the profits. Any one of the six professions could have acted as the foundation and contracted the services of the other groups. Two factors are prevalent that have prevented this organization of services from taking place: transaction costs and uncertainty (or risk).

Examining transaction costs first, a farmer who desires to acquire an expertise in marketing has two alternatives. First, he can obtain an education in marketing, such as a college degree or an internship; or secondly, he can buy the services of a professional marketer. Assuming his career preference is farming, and that any farmer who desires to become a marketing expert has already done so, there should be both farmers looking for marketers and marketers looking for farmers. This leads to the question, why don't Southwest Virginia farmers contract brokers for marketing services?

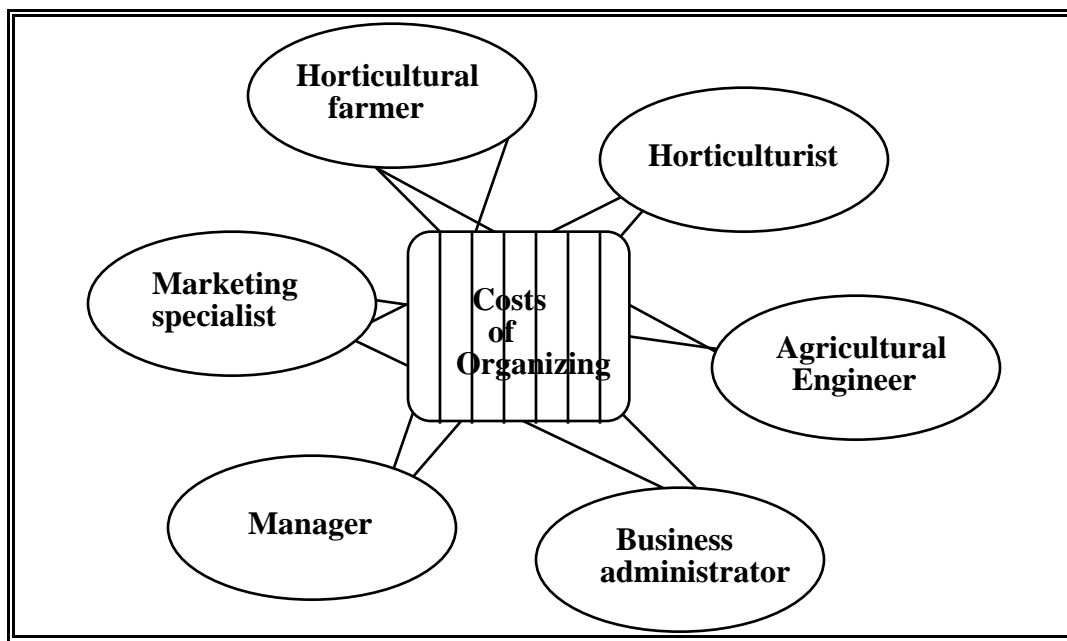


Figure 3.2 Services Required to Produce and Market Horticultural Goods

Transactions costs as a barrier to organizing and specializing are graphically illustrated in Figure 3.2. All six professions exist in the study region, but the costs of forming them into a organized, cohesive unit have been prohibitive. In order to justify the cost of employing individuals from six different professions, large enough volumes of the good to be sold must be produced so that enough revenue can be generated to cover their costs.

If the case of a farmer who desires to purchase marketing services, it can be seen where the system breaks down. A marketer contracted to evaluate crop alternatives, determine industry standards, specify technologies, and make deals for the growers would have to charge a considerable sum to undertake this lengthy, thorough process. The average Southwest Virginia farmer with the ability to irrigate no more than 20 acres would not be able to generate sufficient revenue to pay the marketer for these services. Additionally, both the marketer and farmer would need to contract the services of horticulturists before they could proceed. The marketer would need horticultural information for his market window analysis as well as for an agricultural feasibility and variety selection. The farmer would need horticultural expertise to determine planting dates, input usage, production technologies, and irrigation types. Purchasing this third type of expertise would further erode the profits available per person, which are already limited.

Extending the example even further to include the other three essential professions, manager, agricultural engineer, and business administrator, profits would have to be spread even thinner. The cost of acquiring the grading/packing infrastructure (i.e. ag engineering technology) could only be justified if very large volumes of produce could be moved through the facility (see Appendix). The costs of management or business administration increase rapidly when production expands beyond the family farm size. The costs of integrating the six essential professions into a cohesive production and marketing system all stem around the need to cover the costs of specialization through the

sales of large volumes of the specialized services. In other words, expanding horticultural production into new markets, beyond the currently saturated local markets, involves additional horticultural, engineering and marketing technologies. Growers must produce sufficient volumes of the goods to cover these new costs of managing, administrating, brokering, grading, and acquiring horticultural expertise, which are required to penetrate into these new markets.

The major reason why these volumes have never been achieved is because of the small size of the average farm. No single producer can purchase the volumes necessary to cover the costs of buying the specialized services. There is a need for the small producers to work together, produce large volumes among them, and share the costs of buying the other essential services. The difficulties arising under this pooled-production scenario are the transaction costs of organizing the growers and the costs of enforcing compliance of each participant. Costs can not be shared until a unified, functioning, legal organization exists, that agrees to share costs equitably. In order to create this structure of pooled-production and shared costs, considerable expenditures of resources, time, and effort must be devoted to carrying out the organizational functions of communication and unification.

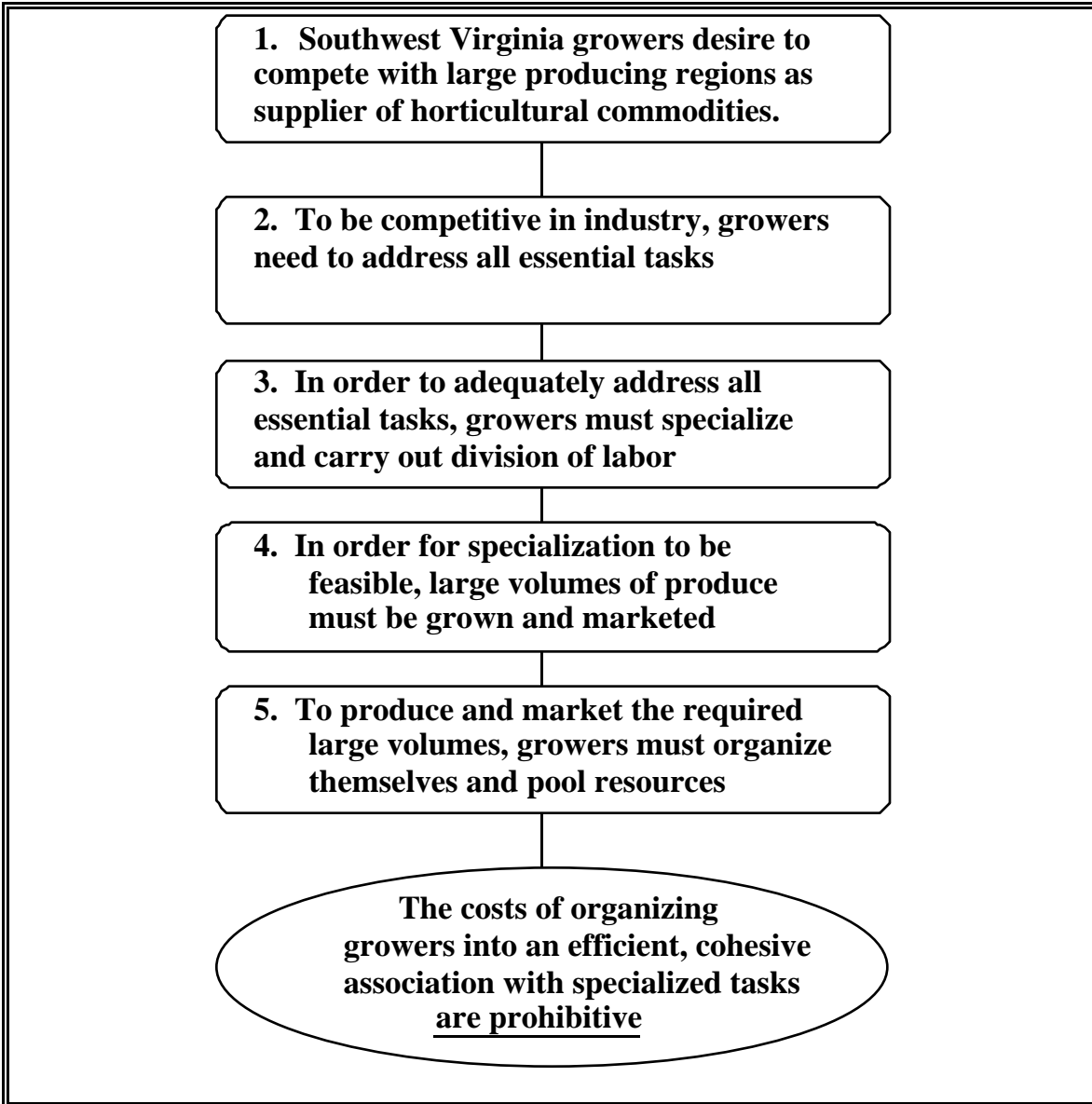


Figure 3.3 - Transaction Cost Barrier to Expanding Horticultural Production

It is not feasible for an individual or small group of individuals to invest private funds in order to carry out these costly tasks of organization. While the investment in organization may bring potential profits in the future, there is no guarantee that the individuals will be able to recover their investment from the other members, since the members are not legally bound to share costs until fully incorporated into the organization. These pre-organizational tasks are expensive and their costs must be shared by a large number of persons, but the coordination and communication of a large number of persons makes organizing unfeasible. Following is a list of some of the costs necessary to coordinate and organize a group of small producers into a single, unified production body:

- 1) costs of communicating with fellow growers,
- 2) cost of gathering information,
- 3) cost of feasibility studies,
- 4) costs of transportation to meetings,
- 5) costs of organizing meetings, and
- 6) costs of establishing legal status.

The second barrier to organizing is uncertainty and risk. This factor plays an important role both by itself and in ensuring that the transactions cost problem of organization is not overcome. In cases where production data is unknown, such as in non-traditional horticultural crop production, uncertainties exist in several areas, such as:

- 1) yields,
- 2) technologies,
- 3) labor management,
- 4) quality,
- 5) costs of production,
- 6) market demand,
- 7) market requirements,
- 8) grading/packing standards,
- 9) marketing costs,
- 10) weather conditions, and
- 11) level of cooperation from other members.

Because of these uncertainties, profits are unknown and, therefore, risky. There is no history of earnings on which to base the formation of the group or the recruitment of its

members. In an attempt to minimize the risk of each uncertain factor, data can be gathered, analyzed, and the results applied to the case at hand. The cost of minimizing risk through gathering information is costly, thus presenting additional transaction costs.

Collecting information can be an expensive means of reducing uncertainty. Given that expected profits are unknown, there is a reluctance to invest in acquiring information to reduce uncertainty. A circular trap exists. Lack of information creates uncertainty, and uncertainty prevents expending resources to acquire information. Where the probability of earning profits is less than one, the expected returns from participating in the new production process will be lowered by the fraction of this probability. This implies that, as the probability of not being able to cover communication and information costs increases, the desire to form a cooperative group diminishes.

Risk also plays a role in cooperation. The project will be dependent on the cooperation of each individual member. If there is risk that the other members will not comply with the group's regulations, and therefore, will have a negative impact on the other member's earnings, participation may be discouraged. This lack of compliance has been a problem in other Virginia cooperative efforts in which members reneged on their promise to market their produce through the cooperative, and instead sold their product to other sources. This failure to comply with a pre-planting agreement left the cooperative with an insufficient supply to meet its orders. The failure to meet orders left the co-op with a poor reputation for compliance, which cost it additional contracts in the future, eventually leading to its failure.

3.3 Overcoming Critical Constraints

The reasons cited above for the causes of the market failure, transaction costs and risk and uncertainty, have prohibited the organization of a functioning body that adequately performs all the tasks required for producing and marketing horticultural commodities. Earlier, the three major physical functions that must be performed for the expansion of production to take place were established: 1) organize the growers into a cohesive production unit, 2) design and develop grading and packing facilities, and 3) establish a marketing network.

In order to perform these functions properly, there are organizational costs, infrastructure and equipment costs, and the costs of paying qualified, specialized labor. Once these costs are met, the initial barrier to expanding production will be removed. An organized association of growers, a shipping-point facility, and a broker/manager working for the group would provide the region with all the required "physical" elements needed to expand production. These three elements are now in place in Southwest Virginia. Publicly paid extension agents have successfully formed an association of agricultural producers interested in diversifying into horticultural production. The extension agents' extensive investment in time, travel, and communications has allowed the region to overcome part of the transaction costs of organizing the producers. A USDA funded study by the Virginia Tech Department of Agricultural and Applied Economics has carried out a feasibility study, identified market requirements, and gathered information, thus overcoming some of the transaction costs of gathering information needed to reduce uncertainty. A grant by the Rural Business Cooperative Service (RBCS) earmarked for a shipping-point market has allowed the region to overcome the costs of purchasing the initial marketing infrastructure. This same grant also permits the region to pay the

salaries of a manager and a broker during the start-up phase, thus overcoming the barriers of specialized labor.

The transaction cost explanation for the market failure has been overcome through the use of public funding. This type of public assistance is not new to the region or the state. Other farmer cooperative efforts have received public assistance in the past to help establish the required physical base needed to initiate operations. The failure of those previous efforts proves that establishing the physical base, alone, is not enough to overcome the local barriers and constraints to expanding production. The breakdown in the system has occurred in the flow of information from consumer to producer. The technology exists to produce a high quality product, and the grading facilities are sufficient to cover the post-harvest handling requirements. With production and post-harvesting requirements accounted for, the region in the past failed to produce and market a product that meets consumer demand on a long-term basis.

The system broke down somewhere between the marketing specialist identifying market requirements and standards, and the growers performing the technical tasks needed to produce the product. By studying Figure 3.4, one can see the channel that market information must follow in order to move from consumer preference to the producer's technological "package." Market requirements are established by consumers, who demonstrate their preferences by making choices at retail outlets. The retail outlets carefully monitor consumer behavior and direct their purchasing agents to buy specific types of produce. Produce purchasers contact wholesalers with connections to shipping-points in order to find a product that most closely fits their specifications. Wholesalers thus bid up the price for a specific type and quality of produce. Brokers representing grower associations bargain with wholesalers about the quality and price of their produce, thus becoming familiar with market trends and standards. The broker must convey these

trends to the grower association manager, who then works with horticulturist and agricultural engineers to put together a new technological package for the growers to follow. The growers must then accept these changes, and purchase any new machinery and inputs required to produce the products at the specified quality.

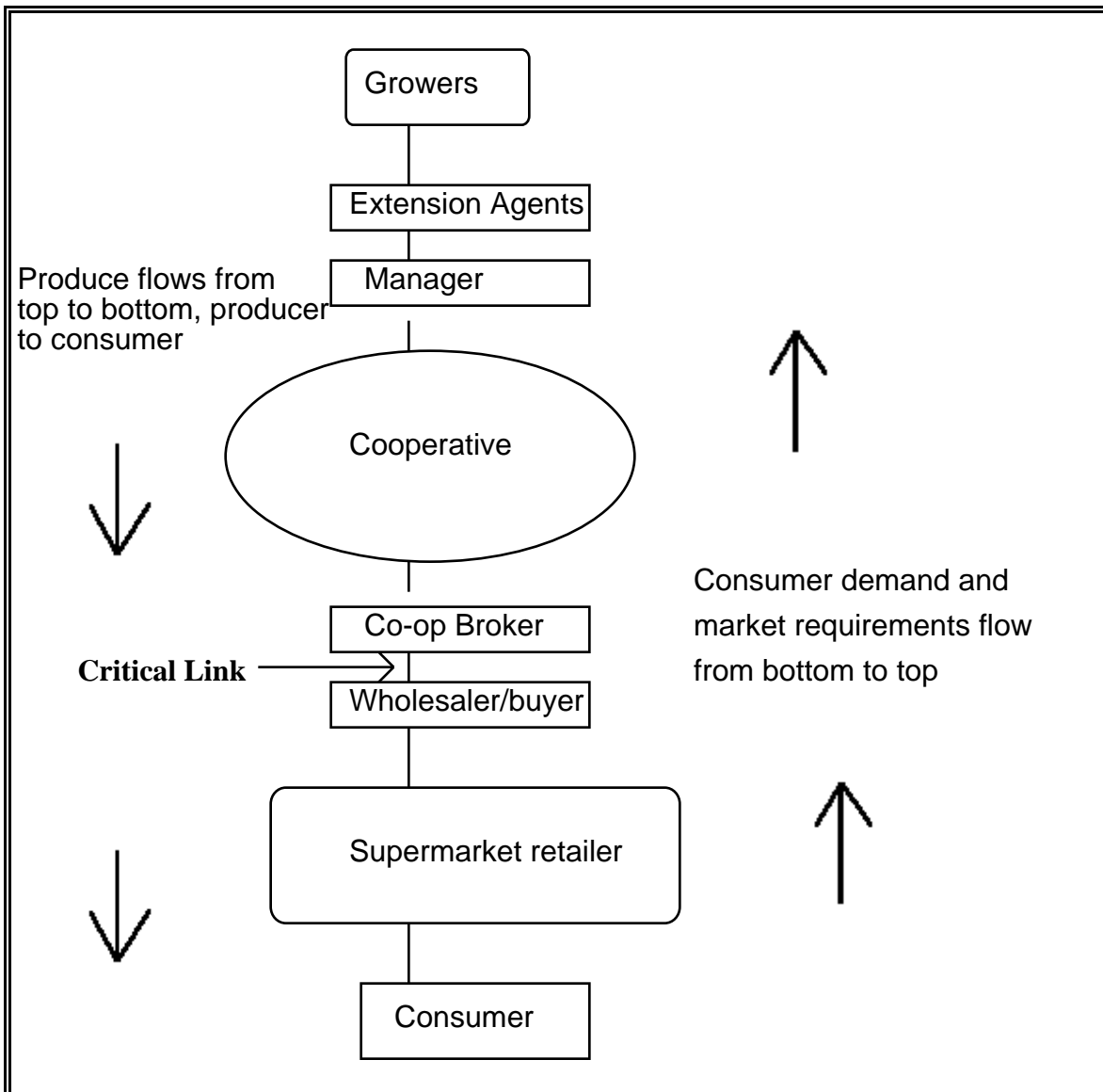


Figure 3.4: Flow of Product and Information Through Marketing Network

Figure 3.4 illustrates the channels that product and information must flow to ensure the process is meeting consumer demand. The most critical link in the process is found between the cooperative's broker and the initial purchaser of the cooperative's produce. It is at this point where market trends and consumer demand must enter the cooperative system. Communication between these two parties provides the link between supply and demand. Problems or differences in communication can lead to a disparity between the high prices paid to farmers for top quality produce and the lower prices paid to suppliers of produce that does not meet industry standards.

Prices paid for certain commodities vary depending on the location where the produce is being traded and the origin of the produce. One can gain some additional insight into the informational flow problem and price disparities by looking at Figures 3.5a and 3.5b.

These graphs show the prices that tomatoes and green peppers are trading for at the three closest terminal markets at a single point in time. Tomatoes and peppers are technically homogeneous products, having been put into the same classification according to United States Department of Agriculture standards. An example of the USDA classifications is that all the tomatoes being traded, regardless of their source, are 25 pound boxes of grade #1, large, red vine-ripened tomatoes. All the peppers being traded also have met the minimum standards for their classification.

Underneath each bar graph, there is a beginning letter and an ending state abbreviation. The beginning letter represents the terminal market where the produce was being traded on that particular day. The graphs show price data from Baltimore, Atlanta and Cincinnati. The state abbreviation indicates the source of the produce being sold. For example, in the pepper graph, B...GA, means the price of Georgia peppers trading on the Baltimore terminal market. It can be seen from the graph that Virginia peppers were being traded at twelve dollars per bushel in Baltimore and \$12.50 in Atlanta. At the same

time, Georgia peppers were trading for \$14.00 in Baltimore, and California and Kentucky peppers were trading for \$16.00 in Cincinnati.

The graph depicting tomato prices shows similar results. During the first week of August 1994 Virginia tomatoes were being purchased on the Baltimore terminal market for \$8.00 per box, while at the same terminal market, tomatoes from other sources were trading for between \$10.50 and \$12.00 per box. The difference in price between Virginia produce and produce from other sources was as much as \$5.00 per box of tomatoes and \$4.00 per bushel of peppers. Considering that the average tomato yield in Virginia is 2,000 boxes per acre, the Virginia based growers were receiving as much as \$8,000 less per acre of tomatoes than the highest priced sources.

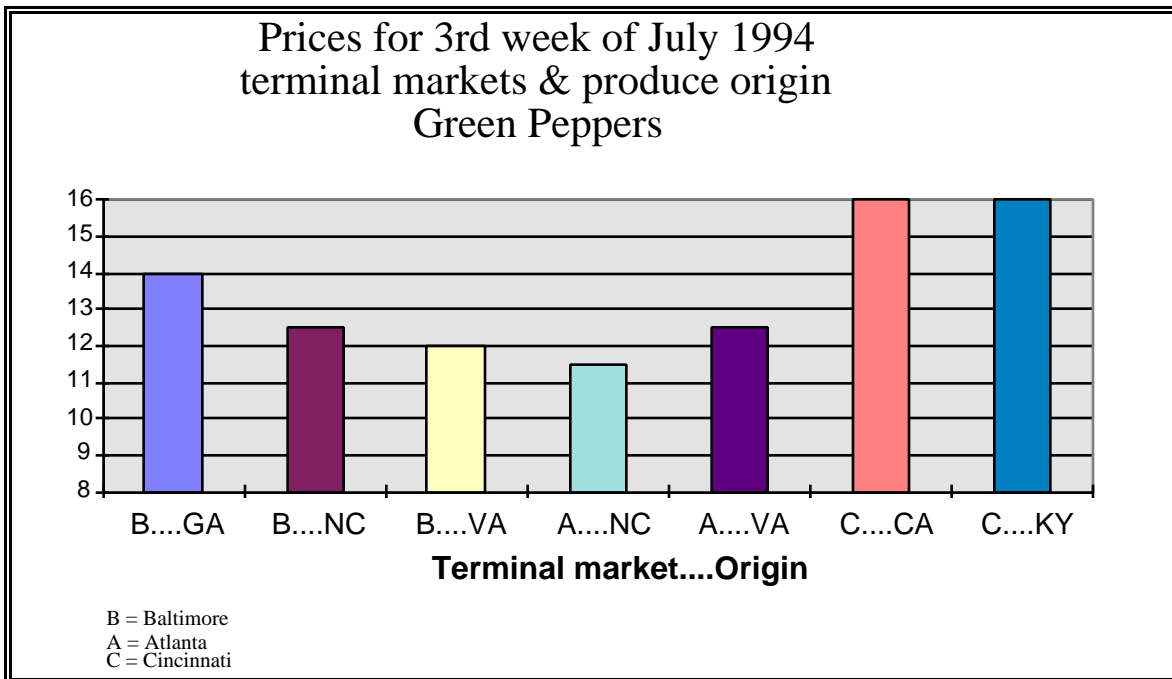


Figure 3.5A Green Bell Pepper Prices

**Prices at terminal markets and
origin of produce
Vine-ripe tomatoes (1st week August 1994)**

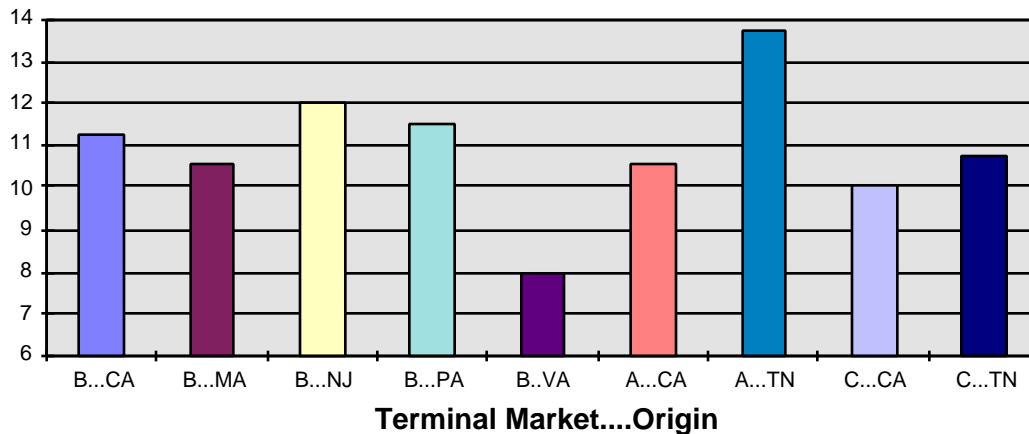


Figure 3.5b String-weave Tomato Prices

The Phase One profitability and market window analysis were based on the price differences depicted above. The high price line graphed in the market window analysis (see figure 3.6) reflects the average of the highest price paid at the three terminal markets. Likewise, average and low price lines on the graph reflect the mean of low and average prices across the three terminal markets surveyed. During the period 1992-94, Virginia produce was trading closer to the low and average prices, rather than the high price being paid for similar produce from other sources. The cost line depicted in the graphs represent the average cost of producing a unit of produce in the region. It can be seen that the price paid for low quality produce sometimes falls below the cost of producing the good.

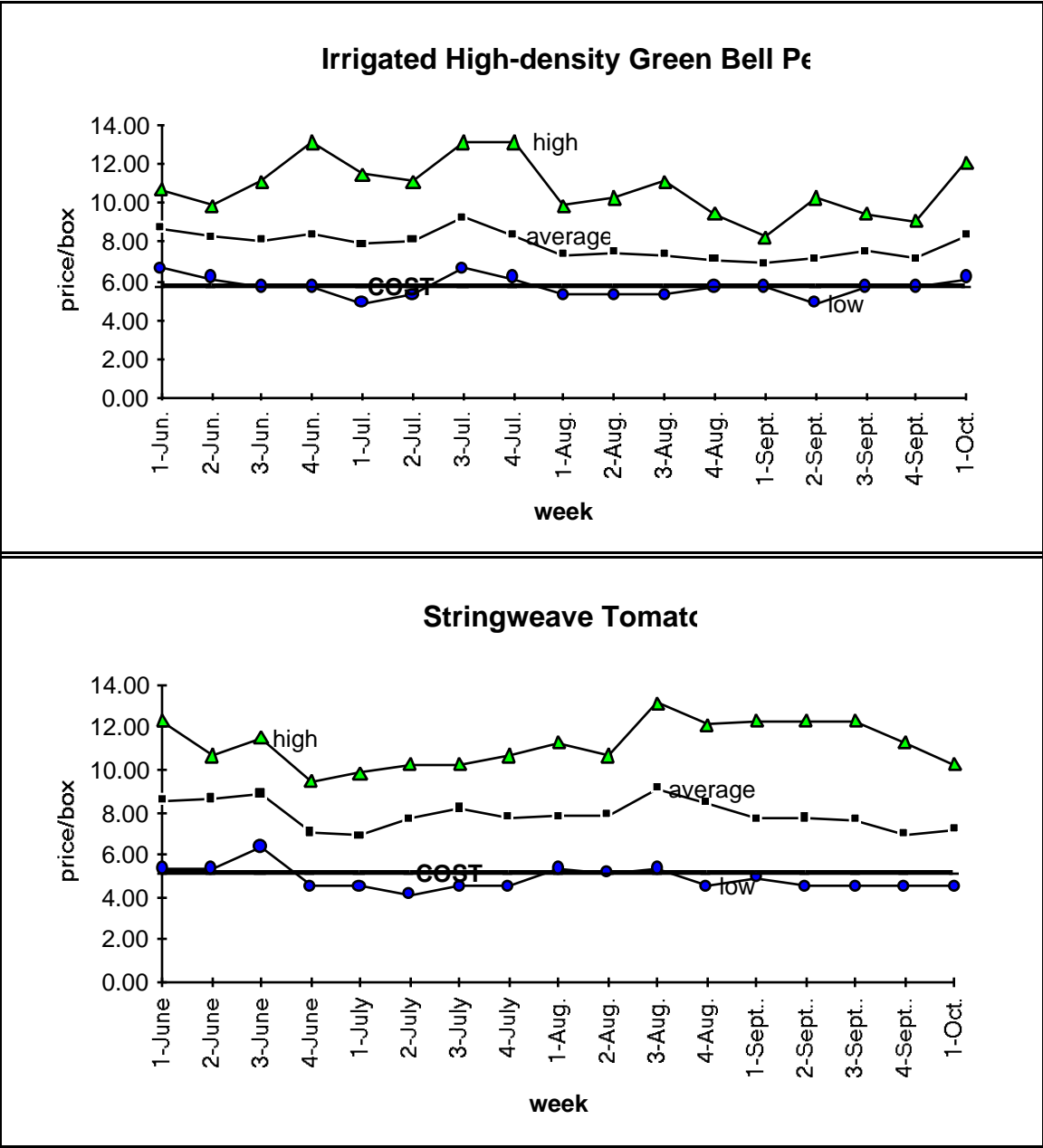


Figure 3.6 - Market Window Analysis for Tomatoes and Green Peppers

According to USDA established quality standards, the product for sale at the terminal markets should represent a homogeneous product that meets minimum quality requirements, regardless of the source of the produce. The Tennessee tomatoes trading at \$13.50 must meet the same minimum standard requirements as the California tomatoes

trading at \$10.50. Fifteen dates were randomly selected between 1992-94 on which Virginia tomatoes and peppers were being traded on the terminal markets, and the price data were analyzed. The prices paid for Virginia produce were compared with prices for the same commodity from a different source being traded at the same terminal market and other nearby terminal markets on the same day¹⁷.

The results of this comparison were that Virginia tomatoes¹⁸ were being purchased at a price seven percent lower than the average price paid across all three terminal markets, for the same standard tomato from other sources. At the same time, Virginia tomatoes were being purchased for 22% less than the price being paid for the highest selling tomatoes from different sources. Similar results were obtained for peppers. Virginia peppers¹⁹ were being traded at ten percent lower than the average pepper price, and 24 percent lower than the highest pepper price from other sources.

Assuming homogeneity truly was the case, as implied by national standards, Southwest Virginia based growers and horticulturists were asked what they thought the explanation was for the lower prices paid for Virginia produce. Most growers were aware that outside produce was selling for a higher price than their local produce, but they were unable to explain the reasons why. The most commonly cited reasons given by the growers were prejudice and discriminatory practices against Virginia farmers. The horticulturists that were asked the same question blamed tradition, long-term relationships with certain suppliers, and politics as the major causes for the price differences. In summary, both growers and horticulturists blamed the system for being biased against Virginia growers.

¹⁷Source: USDA-State Market News Service, "Wholesale Mkt Prices"

¹⁸large, vine-ripened, 25 lb. boxes,

¹⁹ extra large, green bells, 1 1/9 bushels

The nature of the terminal markets and wholesale produce system do not provide much support for the growers' reasoning. Regional produce is assembled at various shipping-points around the country where terminal market wholesalers order and purchase produce to be delivered from the various sources. The wholesalers display samples of the produce on the market floor for smaller wholesalers, restaurant servicers, institutional buyers, and independent grocers to look over before purchasing. A local buyer, who will turn around and retail the product they buy, will look for the best deal that meets his needs. He will purchase the produce based on appearance, taste, price, size, etc., depending on the demands of consumers.

A restaurant servicer, small wholesaler, or institutional supplier, each working in competitive markets, will need to make efficient choices about which produce to buy, based on obtaining a return on investment. Any one of the buyers who would pay an unjustifiably higher price for a good because of prejudicial, discriminatory, or political reasons would have a difficult time surviving in a competitive market. If other competitors were able to avoid discriminatory practices and purchase the same product at a lower price, the inefficient buyers would eventually be out-competed and be forced out of the industry.

A more plausible explanation for these price differentials was provided by marketing specialists familiar with the inner workings of the terminal markets. While minimum quality standards are set, differences in quality do exist between produce from different sources. The size and color may be the same, but differences may exist in freshness, shape, shine, shelf-life, taste, and numerous other physical characteristics. The price differential reflects the overall bundle of characteristics possessed by each item. The price also reflects a number of additional characteristics, not directly related to the quality

of the fruit itself. Some of these additional characteristics include packaging, quantity available, brand name, stems vs. no stems, waxed vs. unwaxed, advertising, and labels.

The ultimate purchasers of this produce look for a product that possesses the specific bundle of characteristics they desire. Personal discussions with local growers and horticulturists lead this author to conclude that they do not have the information about the events taking place at the buyer end of the production and marketing network. The growers know how to produce, but are not exactly aware of who they are producing for and what these buyers demand. The information flow breaks down between the marketing requirements and the production component.

A break-down of the flow of information has been a major factor contributing to the past failures of large-scale horticultural attempts in the region. A rational farmer should be indifferent between planting crops with similar technologies and time requirements. He should choose the crop which provides him with the highest expected income. Past failures to obtain a high price for their product have forced growers to return to producing other, less profitable agricultural commodities. Production is a question of incentive. At the low prices paid for Virginia produce, horticultural production is not very profitable and therefore few farmers are producing it. If the average or highest price for produce can be obtained for local growers, a new financial incentive would exist that would stimulate greater production in the region. By creating an organizational structure that resolves the problem of inadequate informational flow, a substantially higher price should be obtained for the produce.

The key that will ensure the success of the cooperative is to create an organizational structure that will ensure a proper flow of information from market demand to the producers. One positive step that can help achieve this goal is to separate the roles of

broker and manager. The broker should fulfill the tasks of the market specialist discussed in Section 3.1. These tasks include establishing relationships with purchasers, determining market demand, determining market standards and requirements, bargaining on behalf of cooperative, and relaying this information to the manager. The manager fulfills the roles of coordinating the growers, working with extension to produce the "technological package," and running the packing and grading operation.

3.4 The Optimal Organizational Structure

In order to create the optimal organizational structure, all tasks outlined above must be addressed by specific members of the organization. Carrying out each specific task must lead to an efficient and uninterrupted flow of information from consumer demand to production technologies. This flow of information can best be ensured by creating a specialized division of tasks within the organization, and by addressing a few key factors within the organizational make-up of the cooperative.

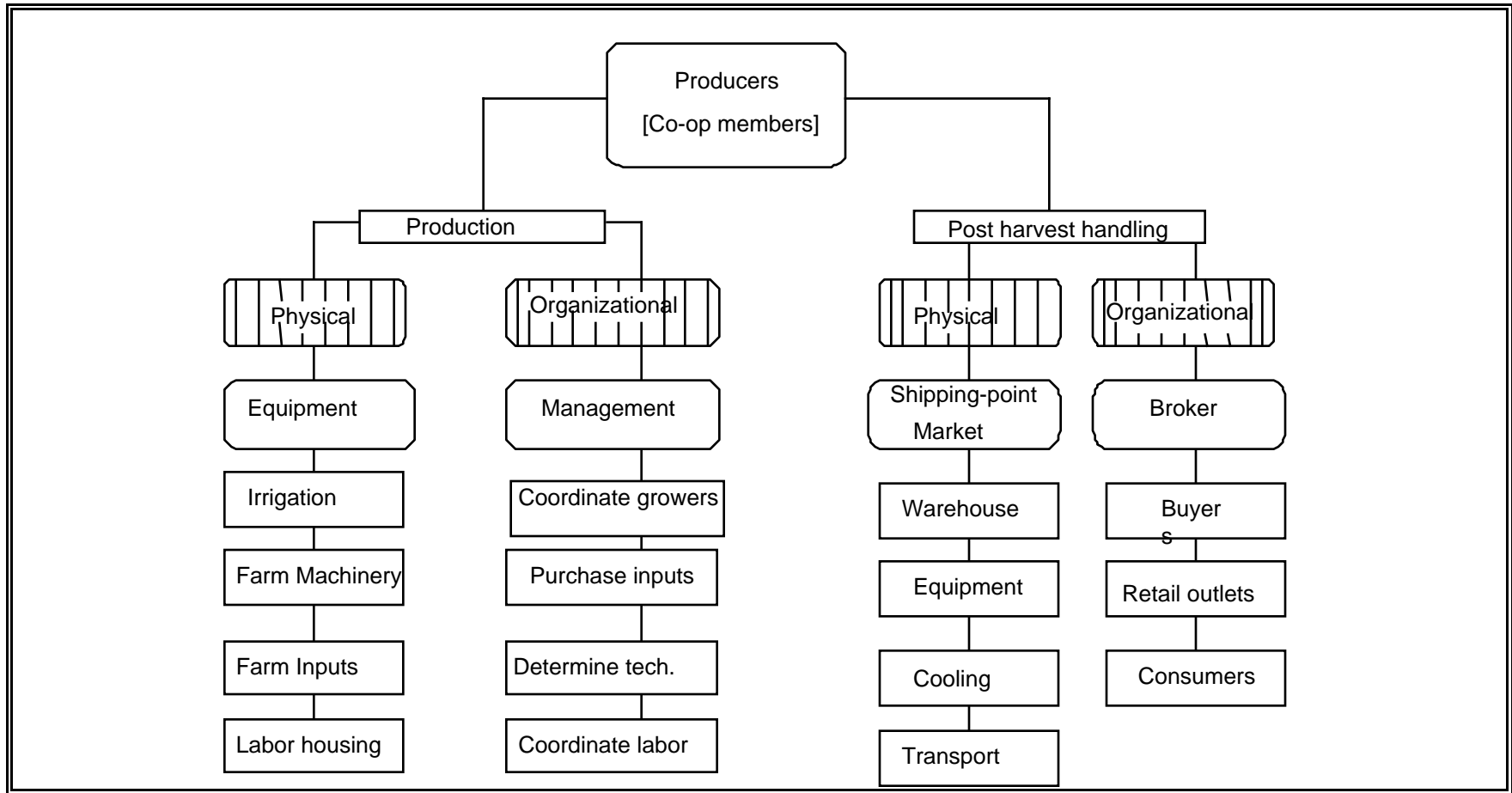


Figure 3.7 Division of Physical and Organizational Tasks

Production and post-harvest handling can be divided into physical and organizational tasks. The organizational tasks depicted in Figure 3.7 represent the tasks necessary to ensure the proper flow of information to both extremes of the production and marketing network. Both production and post harvest handling involve a series of tasks related to acquiring information. Production involves the physical tasks of plowing, planting, and irrigating, while it also involves the informational tasks of determining technologies, acquiring labor, and coordinating growers. The same is true on the post-harvest side. There are the physical tasks of cooling, packing and shipping, as well as the informational tasks of brokering, determining demand, and contacting buyers. The cooperative must serve as the entity that allows the flow of information between the marketing and production ends.

Past efforts have demonstrated that marketing expertise has been an essential weakness of the horticultural cooperatives. A division of labor between the roles of broker and manager would ensure that all the essential tasks outlined above are properly carried out. The objective of the broker would be to determine the specific bundle of physical characteristics that are most desired by produce purchasers. The manager in turn would use this information, and take measures to ensure that the growers are producing a product that meets the specifications. The ability to produce this more highly desired product should raise the price paid for local produce to levels more compatible with the other regions of the country.

The difference in the price paid for "average" quality Bell peppers is four dollars less than that for top quality peppers as illustrated in Figure 3.6. On certain dates, Virginia tomatoes were trading as much as six dollars less than tomatoes produced in the nearby states of Kentucky and Tennessee. A four dollar difference per box can add up to as much as an \$8,000 difference in returns per acre. The investment needed on the

production side to produce the higher quality product may be significant, but the potential increase in returns justifies any additional investment. The difference in prices stems from the fact that produce from other sources possesses a bundle of physical characteristics that are preferred to those possessed by the Virginia fruit.

The separation of managerial and broker functions are illustrated in figure 3.7. The managerial functions appear on the production side of the flow chart, while the broker's functions appear on the marketing side of the chart. The duties of broker and manager are very different, yet most of the past cooperative failures have tried to incorporate both of these duties into one position. Whenever one person is doing two jobs, the potential exists for a cost savings. At the same time, this individual may be less efficient in both operations. It appears that the inability to identify market requirements that led to a breakdown in the flow of information in past co-op attempts was caused by the lack of a professional broker on the cooperatives' payrolls.

An experienced marketing specialist acting as co-op broker is essential for the success of the project. The broker must be free to deal exclusively with the marketing aspects of the operation. In order for the broker to properly fulfill his functions he will need a well equipped office space with all the latest communication equipment: a telephone, facsimile, and a computer with internet access. All major brokers, buyers and wholesalers are connected to the internet, and have access to up-to-the-hour price information for all terminal markets in the country. The broker must possess this same price information in order to bargain with the buyers and to obtain the best price for the growers.

The functions of the manager are more diverse and less stationary. The manager needs to act as the glue that holds all the pieces of the organization together. The manager must

be the focal point that takes the market information obtained from the broker, and ensures that a technological package is put together and adhered to by the growers. The central role of the manager is one of coordination. As the cooperative allows the necessary division of labor into specialized tasks, the manager must ensure that each separate task complements the others, and leads to the production of a product that meets market standards.

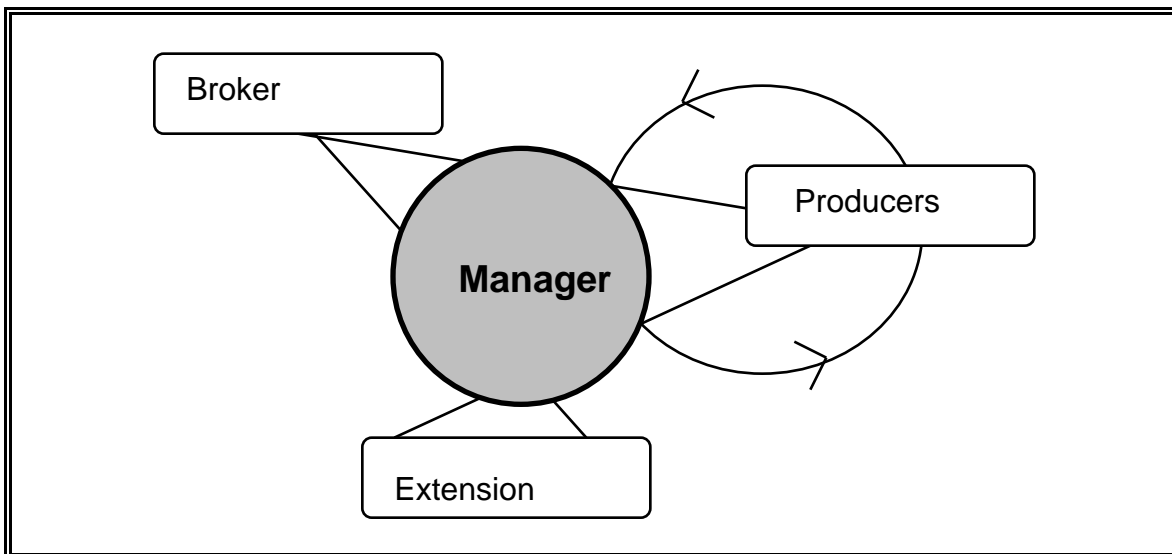


Figure 3.8 The Central Role of the Manager

The role of the manager as the central coordinating entity is illustrated in Figure 3.8. The manager's role as central coordinator links together the functions of grower, broker, and extension. Many of the individual tasks required to operate the cooperative take place simultaneously. It is the role of the manager to ensure that all parties are working toward the same goal. The coordination efforts provided by the manager exist as links between: 1) all growers, 2) broker and extension, 3) extension and growers, and 4) broker and facility operator. One may examine these linkages individually.

The brokers establish relationships with purchasing agents, and they agree on a bundle of characteristics that the produce must possess in order for it to be considered for purchasing. This bundle of characteristics includes the physical quality characteristics of the product as well as packaging demands. The quality specifications include, size, color, variety, ripeness, etc., while the packaging and additional characteristics include such factors as type of box, size of boxes, labels on produce, waxed, stems left on, delivery requirements, and wrapping.

In order to achieve the specified physical quality characteristics, the extension component of the cooperative, in charge of the technological aspects of production, must put together a production manual, or "package" that ensures that the standards are met. The production package must include input requirements, land preparation methods, required machinery, chemical application schedules, irrigation specifications, and harvesting requirements and techniques. The production package must include precise step by step procedures for producing a product that meets purchasing agent's requirements. Once the package is assembled, the manager must diffuse this information down to the growers and have them sign an agreement, promising to comply to the schedules and specifications outlined in the manual. The manager will then decide which inputs, such as seedlings, fertilizer, pesticides, and herbicides, can be bought in large quantities at wholesale prices. After deciding on the purchase of group inputs, the manager must ensure that they are delivered to the growers.

At the same time that the manager assures that the production package is being assembled, he must also ensure that the post-harvest technology is in place to meet the grading and packaging requirements. This post-harvest work involves taking the information assembled by the broker, and working with an agricultural engineer, in order to design or modernize a facility that will perform all the necessary functions. The

manager will also have the responsibility of administrating the facility and inspecting the shipments before they go out.

The manager also serves as the coordinating entity for the large number of disperse growers. All growers must sign marketing agreements promising to follow specified techniques and to sell a specified quantity of produce to the cooperative. In order to assure an orderly flow of produce in and out of the co-op at designated times of the year, the manager must coordinate planting and harvesting times among the growers. When growers are close to harvest, the manager must arrange delivery schedules that provide optimal usage of the facility. The manager must work with growers to agree on a product mix that will allow an inflow of produce that keeps the facility operating and profitable throughout as many months of the year as possible.

Finally, the manager is the one that ensures that the cooperative is operating according to the principles set forth by the board of directors. It is the manager that must keep the major objectives of the co-op in mind while coordinating the various activities of the organization.

A further consideration in designing the optimal organizational structure is the role of the board of directors and the content of the cooperative's bylaws. In theory, the by-laws which govern why and how the cooperative will function, represent the needs and desires of the members. In the case of an agricultural cooperative, the members are almost exclusively producers. Producers are only one of the key components of a complete and cohesive organizational structure. The potential problem that arises in this scenario is that the by-laws are established based on the vision and the criteria of the producers. The other essential components, broker and manager, are not under contract at the time the

bylaws are established, and thus may fail to contribute important input which will decide the future of the cooperative.

The role of the board of directors is to govern the co-op and decide how the resources and services will be used to the benefit of the members. The board accomplishes this objective by establishing sound goals and policies to guide the manager and the operations of the organization. The board of directors should consist of individuals with a wide variety of skills and professional backgrounds to ensure that all essential components of the organizational structure are represented. In cases where the board may consist of too many producers and lack other important components, such as planners or engineers, structural flaws may be written into the by-laws.

When a manager, extension agent, or broker are contracted by the cooperative to take advantage of their specialized skills, the structural problems written into the by-laws may prevent these parties from functioning in the optimal manner. After the cooperative has hired all key personnel and is operating according to by-laws, there are still additional informational flow problems that may arise due to the nature of the cooperative. The board of directors makes the major policy decisions, develops the business plans, sets goals, and resolves problems as they arise. Therefore, the board should be informed of all aspects of the cooperative's activities.

The cooperative's organizational structure must be such that the flow of information between growers, manager and broker also reaches the board of directors. While the function of the board of directors should be to ensure that information flows properly from one end of the marketing network to the other, in order to do so, the board itself must be a part of the information network.

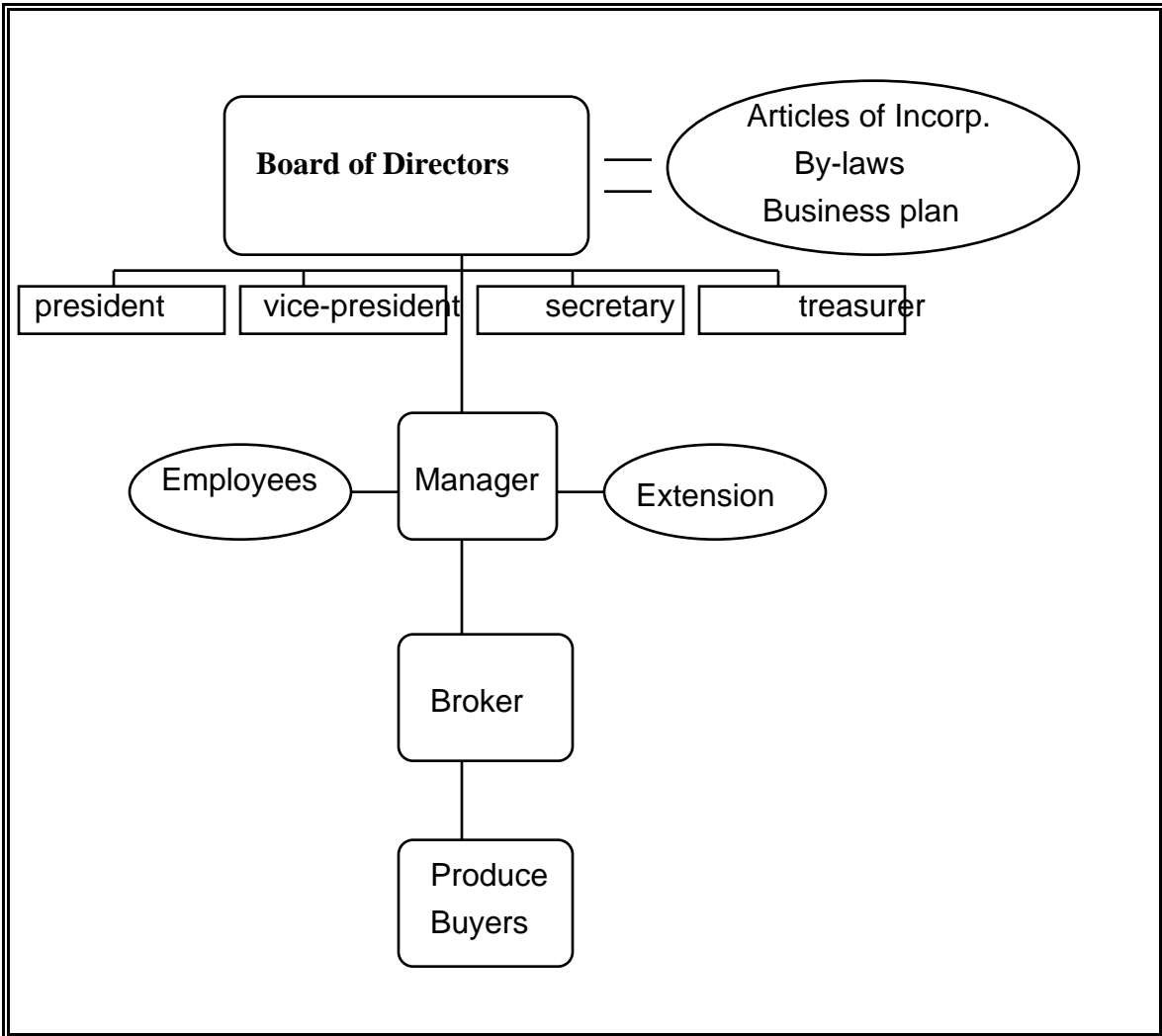


Figure 3.9 Informational Flow Problem that Includes Board of Directors

The failure of important information to get back to the board of directors and into the cooperative's business plan may contribute to the demise of the cooperative. The board of directors must understand all the intricacies of production, horticulture, management, engineering, packing, marketing, etc., in order to set policies and goals that provide maximum returns to the members. If there are structural flaws in the by-laws or business plans, it is the role of the board to amend these documents to reflect more optimal policies.

3.5 The Role of the Government

The role of the government in economic policy should be to promote the overall performance of the economy. This involvement generally includes fostering optimal levels of aggregate material welfare for the populace. Aggregate material welfare embodies the following conditions (Bain, 1959, p. 13):

- high level employment of labor,
- high level employment of productive resources (i.e. land, equipment, etc.),
- efficient use of employed resources in production leading to maximization of value of aggregate output obtained from the employed resources,
- stability of aggregate employment over time, and freedom from undue fluctuations in economic activity,
- reasonably high rate of productivity, as reflected by growth of the value of aggregate output per unit of resources employed.

The most widely recognized way for the government to achieve the conditions listed above, and thereby assure the overall performance of the economy, is to promote and preserve a workable degree and form of competition, which will induce good performance by various enterprises (Bain, 1959). The best way of assuring the necessary competition is through the existence of a large population of relatively small firms, and the prohibition of excessively large firms. Therefore, it is generally recognized as the role of the government to maintain an adequate degree of competition for the benefit of the consumer.

In order to overcome the market failure discussed in section 3.2, the government must provide assistance in the start-up of the cooperative. Federal assistance can be categorized into three types: 1) infrastructure support, 2) organizational support, and 3) technical support.

Infrastructure support refers to providing financial assistance for the purchase of the required marketing infrastructure. Marketing infrastructure consists of a shell building, grading and packing equipment, cooling rooms, storage, and all other physical aspects required to meet industry standards. The cost of renting the space and equipping it with the minimum equipment required to perform all the tasks outlined in section 3.1 would be several hundred thousand dollars.

Due to the issue of uncertainty discussed in section 3.2, the transaction costs of organizing the growers and the costs of gathering the necessary information to reduce risk have prevented marketing infrastructure from being built in the region. The expanded production of horticultural produce has been evaluated as a potentially profitable enterprise, but these barriers have prevented the region's growers from collaborating, sharing costs, and acquiring the necessary infrastructure. By providing financial assistance to acquire the needed infrastructure, the government can help to overcome one of the major barriers to production, and allow local producers to diversify into this potentially profitable enterprise.

The acquisition of a marketing infrastructure also plays an important role in overcoming the issue of uncertainty. In section 2.6, uncertainty was the major factor that prohibited an optimal solution of cooperation in the prisoner's dilemma game. The inability to be able to count on fellow growers for cooperation stems from the reluctance of certain growers to invest in new machinery and equipment for an enterprise with an uncertain payoff. The physical presence of the marketing infrastructure relieves the growers of a financial burden that may have restricted their participation, thereby reducing uncertainty in the project. The chances of ensuring mutual cooperation are higher, because the

presence of infrastructure increases the probability of a profitable return for the users of the facility.

The government can help break down many of the existing barriers to horticultural production by providing financial assistance for the purchase of a marketing infrastructure. This assistance is a sign of assurance to growers, helps reduce uncertainty, decreases the investment required of each individual producer, and thus stimulates the mutual cooperation needed to carry the project forward.

The second major role of the government is to provide organizational support. Organizational support involves two major components. First, it involves assistance in overcoming the barriers to acquiring the necessary information to carry out the project. Secondly, it involves assistance in overcoming the costs of communicating, disseminating information, and organizing a large number of disperse growers into a single decision making entity.

The first issue, assistance in overcoming the barriers to acquiring information, involves carrying out a feasibility study and acquiring all the necessary technical information that ensures horticultural production will be a profitable enterprise. The feasibility study includes a profitability analysis of potential crops, a market window analysis, a market analysis of past and current trends, a survey of potential produce buyers, a survey of potential growers, and an analysis of production and post-harvest handling issues. The function of acquiring this pre-project information is to ensure profitability, reduce uncertainty, and overcome the transaction cost constraint.

The second organizational issue, overcoming the costs of communicating, disseminating information, and coordinating growers, also requires government assistance. Due to the

nature of numerous, small dispersed farms in the region, the transaction costs of identifying interested individuals, informing them, bringing them together, and creating an efficient decision making body are prohibitive.

The role the government has played in these organizational issues has involved allocating funds to both Virginia Cooperative Extension, and the Virginia Tech Department of Agricultural and Applied Economics. These funds were specifically earmarked for addressing the organizational issues. Publicly funded Extension agents played an important role in identifying potential growers, writing grant proposals, eliciting assistance of marketing specialists, identifying regional constraints, gathering information, and bringing the growers together to discuss their needs. The Virginia Tech Department of Agricultural and Applied Economics was funded by the USDA to carry out the feasibility study, market survey, profitability analysis, agricultural engineering design, and organizational development. The lack of funds needed to carry out these organizational issues had been restricting the advancement of horticultural production in the region.

Through the support, the organizational and informational constraints were eliminated, and the project was able to move forward. Without the government assistance, uncertain profits and lack of farmer cooperation would have prevented any private firm from investing in resolving these critical issues.

The third major type of federal assistance is technical support. Technical support refers to the ability to bring a range of specific expertise together into a single organizational structure. Where organizational support referred to overcoming the transaction costs of bringing a large number of disperse growers together into a single decision making entity, technical support refers to the process of equipping the organization with the technical

knowledge to make good decisions and carry the project forward. The core of the organization is the producer members. The technical support that is needed to run the cooperative includes horticultural expertise, marketing expertise, and managerial expertise.

The government is collaborating to provide this technical assistance in the initial years of operation. Part of the RBCS grant is earmarked to pay for a manager. Additional USDA funding awarded to Virginia Tech to prepare a business plan will help provide some of the marketing expertise that the project requires. The allocation of extension agents' time to crop field trials and technical assistance provides the cooperative with a source of horticultural expertise. Without this government assistance to provide technical support in the initial years, the cooperative may either fail to get started or may suffer from poor decision making, as past cooperative attempts have.

3.6 Justification for Government Intervention

In section 3.5, the role that the government must play in order for the project to take-off, grow, and be a successful enterprise was discussed, and the allocation of public funds for three types of support: infrastructure, organizational, and technical was specified. Since the government uses public funds to finance the project, the existence of the cooperative must provide some public benefit, which is greater than the sum of the funding awarded to the project. In this section, the overall public benefit provided from the creation of the cooperative is discussed.

In Section 2.9, the legal issues related to the existence of farmer cooperatives and farm assistance programs were discussed. The use of government funding on agricultural

programs can be justified in two primary ways: 1) the program benefits the national consumer, or 2) the program reallocates funds to more needy regions.

Both arguments provide justification in the Southwest Virginia case. In section 2.4, the fact that production of horticultural commodities was becoming increasingly concentrated in the hands of fewer, very large, corporate producers, located in a few states of the country was illustrated. Many economists argue that this increasing concentration has led to unfair market power for the large producers, at the expense of the small, seasonal producers. The large producers, with advantages in economies of scale and year-round production, have been able to restrict new producers from entering the market. The monopolistic power exerted by the large producers results in a less competitive environment that adversely affects the national consumer.

Government assistance in helping to establish the cooperative may lead to increased competition. Government assistance in the creation of agricultural cooperatives first became legal through the passing of the Cooperative Marketing Act of 1926. Increased competition should lead to lower prices and higher quality for the consumer, as well as increased investments in research and development. In the Southwest Virginia case, the creation of an eastern producing state, in an industry dominated by California and Florida producers, will serve three purposes. First, it will make available a local supply of fresh produce. According to the results of our market study, there is a demand for locally grown produce, but the lack of experienced producers has historically restricted supply. Second, increased competition should lower the price that consumers pay for this product. Third, the entry of an eastern producer will provide some geographic diversity into the industry, which should help provide price stability when climatic conditions adversely affect the other major producing regions.

All three objectives stated above for justifying the support for the creation of the cooperative meet the criteria set out in the Agricultural Marketing Agreement Act of 1937. Increased competition is in the interest of the national consumer. Geographic diversification will help increase inter-state trade, ensure stable and orderly market conditions, and help prevent a disruption of the orderly marketing of any commodity which is in the public interest.

The second argument in favor of government support for the creation of a farmer cooperative is one of redistribution. In section 2.1 some of the socio-economic statistics that characterize the region were presented. The five county study region lags far behind the state and national averages in family income, percentage of population above the poverty level, education, and employment opportunities. With forecasts predicting shrinking markets in the region's two major agricultural production sources, tobacco and cattle, there is concern for the region's future growth prospects. Redistribution of income is often a major objective of farm programs (Helmberger, 1979).

Government support for the region will have as an objective to create employment opportunities and raise family incomes. On a more agricultural perspective, the government assistance will help aid producers by attempting to raise farm prices, as stipulated in section 1301(a)(1) as a primary goal of the Agricultural Marketing Agreement Act of 1937.

Government support for the horticultural cooperative in Southwest Virginia is designed to involve a one-time infusion of funds. This initial funding should be sufficient to overcome the transaction costs, informational, organizational, infrastructure, and technical barriers that prevented the formation of a producer cooperative. Once the public funds have been used to overcome these barriers, the cooperative must become

self-sufficient and be able to survive and grow solely on the merits of its own production. The previous Phase One study, outlined in section 2.3, demonstrated that once these initial constraints to local production have been removed, the local farmers should be able to compete favorably with national producers.

3.7) Chapter Three Summary

A detailed analysis of the fresh produce industry was presented in this Chapter. The analysis began by looking at the production and post harvest handling tasks required to compete in the industry. These essential tasks were further dissected to present the professional skills necessary to carry out each one.

A market failure exists, preventing the region from participating in the produce industry, due to the high transaction costs of organizing the growers and creating an organizational structure that integrates the skills of all the professionals required to operate a cooperative and compete with large corporate firms. The impact of the high transaction costs has been the failure of local growers to cooperate, work together, and share costs and revenues in order to participate in this potentially profitable industry.

In cases where public funding was allocated for the formation of producer cooperatives, thus overcoming the transaction cost barriers to organizing, an adequate internal organizational structure was never developed, ultimately leading to the failure of these earlier cooperatives. The inability to consider all the necessary tasks and skills required to run a production and marketing cooperative prevented a proper flow of information from consumer demand back through the marketing channels to the growers. This lack of proper informational flow, or information about market requirements and standards, back

to the producers is the single most critical factor that must be considered in developing an organizational structure for the newly proposed cooperative.

The failure to compete with the large corporate producers stems from the inability to diversify the organization into enough separate components that specifically address each individual task that must be carried out by the cooperative. The failure to address all the necessary tasks individually leads to the information flow problem, and the fact that the growers are failing to produce a product with the specifications required by produce purchasing agents. The allocation of public funding has as an objective, to help the region overcome these restrictive barriers, and to create an organizational structure that will allow the producers to compete in the national produce industry.

Chapter IV. Application of Findings on Southwest Virginia

Introduction:

The problem of the market failure described in section 3.2 affects the ability of the region to expand horticultural production in two distinct ways. First, due to the complexity of the tasks required to produce and market fresh produce, there is a need for a division of labor that allows the specialization of certain tasks. In order for specialization to be feasible, large quantities of the specialized services must be bought and sold. In order to ensure the mass utilization of these specialized services, a large demand must exist which will lead to lowering the per unit cost of utilizing such services. Per-unit reductions in the cost of using specialized services can only be obtained through the large-scale production and marketing of produce.

The ability to produce and market large volumes of horticultural produce rests on the ability of the numerous small Southwest Virginia farmers to organize themselves into a cohesive structure. Pooling resources and combining production will enable the region to produce sufficient volumes of produce that will make contracting the required specialized services economically feasible. This pooling of resources has failed to occur because the transactions costs of organizing the growers is too great to allow the formation of an adequate organizational structure. This argument was laid out in section 3.2, and is the basis for justifying government assistance in overcoming the constraints to organizing.

The second problem arises after the market failure has been resolved. Government funds have been used previously in the region and within the state to overcome similar market failures, but the grower associations eventually failed. The reason for the failures was explained in section 3.3 as being caused by inadequate organizational structures that did

not properly address all the tasks required to meet industry quality standards. The failure to meet industry standards and obtain a high price for the producers arose out of an inadequate flow of information within the organization. As the new organization is created, the specialization issue is addressed, and the required tasks are divided up among the various participants. With the organization in place and specialists focusing on specific tasks, the need for communication and coordination becomes more important.

Creating an organizational structure that addresses all of the required tasks outlined in section 3.1 is essential for the success of the region. In order to address all of the mentioned tasks, the organizational structure must allow a flow of information within the organization that permits consumer demand and market standards to flow back to the producer and be considered at all stages of the production and marketing system.

Designing such an organizational structure that allows the proper flow of information and addresses all of the required tasks is the focus of Chapter 4.

The way in which an association or cooperative will operate is established and outlined in its bylaws, business plan, and the composition of the board of directors. It is important that the focus of the cooperative addresses the major issues which have contributed to past cooperative failures, such as the identification of market standards and the flow of information. In order for the cooperative to address these issues, it is important that they be recognized early on in the cooperative development process, and that steps to address these issues are incorporated into the written legal structure of the cooperative.

The objective of this chapter is to consider all the essential tasks outlined in Chapter 3, create an organizational structure that possesses all the major skills needed to fulfill these essential tasks, and incorporate them into the written documents of the cooperative in order to ensure that all these critical points are being addressed.

The legal documentation that establishes the function of the cooperative are the articles of incorporation and the bylaws. Within the bylaws there are certain clauses giving specific decision-making authority to the board of directors. The board of directors is responsible for creating a business plan that meets the needs of the members and fulfills the objective set out in the bylaws. The business plan acts as a road map or strategic manual that sets forth specific steps that should be followed in order to reach the cooperative's objective. It is important to address the critical issues of market standards and information flow in the business plan in order to prevent these issues from being neglected as has occurred in the past.

The bylaws and business plan must also address the issues of risk and uncertainty by ensuring that all essential tasks will be carried out. Most of the major cooperative efforts in the past have failed because production did not meet industry standards. The key tool that addresses the issue of production within the cooperative is the marketing agreement. The Marketing Agreement specifically outlines market requirements and the specific production technologies that must be followed in order to ensure that the standards for variety and quality are met. Additionally, signing an agreement that obligates the growers to commit to a certain commodity, technology and acreage to be marketed through the co-op reduces the issue of uncertainty among the region's growers.

The articles of incorporation, the bylaws, business plan, marketing agreement, and roles of key personnel will be addressed in this chapter, in order to specifically address the major issues that have lead to past failures. By recognizing these issues in the early stages of the planning process, one may be able to prevent the problems that have hurt other cooperative efforts and create an organizational structure that will bring about maximum benefits for the region, the region's growers, and the national consumer.

4.1 Mission Statement²⁰

The purpose of a mission statement is to outline the goals and objectives of the organization. The mission statement provides the justification for which the entity exists and specifies a direction that the organization will follow in pursuit of its objectives. In the case of Southwest Virginia, there are two major objectives: 1) to increase farmers family incomes, which should lead to economic development in the region, and 2) to make a supply of locally grown horticultural produce available in Virginia supermarkets to Virginia consumers.

As discussed earlier in section 3.6, public funds are being used to finance the start-up of the cooperative. Therefore, there must be some public benefit provided from the existence of the co-op. The public benefit in this case is the reallocation of funds to a more impoverished region. This allocation of funds has as an objective to overcome an existing market failure, thereby allowing local producers the opportunity to increase family incomes. An increase in family incomes for a substantial number of local residents should provide an economic boost to the local economy. This is the reason that the mission statement specifies as an objective (see Appendix 5) "*.... any current funding and funding obtained in the future, will be used for the overall benefit of the Southwest Virginia region. The greatest benefit is obtained by assisting the maximum number of local producers to increase their agricultural income.*"

The second objective stated in the mission statement, "*to create a supply of local produce available to Virginia consumers in Virginia supermarkets,*" is another public benefit. Previous studies and surveys have shown that there is a demand for Virginia

²⁰see Appendix 5 for full Mission Statement

grown produce by local consumers, but that very little is available. One of the missions of this project is to create a source of production that will be able to supply the produce which meets consumer demand. The use of funding to help create a supply that meets consumer demand is a benefit to the Virginia consumer as well as to the national consumer.

The mission statement details the manner in which these two objectives will be achieved. The funding will be used to form a farmer cooperative which will support local growers in the production and marketing of locally grown produce. The cooperative will provide both a physical infrastructure, such as a warehouse, grading and packing equipment and cooling facilities, as well as a managerial infrastructure, such as a manager to coordinate activities, a Board of Directors to establish policies, and a broker to find markets for the regional produce.

4.2 Articles of Incorporation and Bylaws²¹

The Articles of Incorporation legally define the characteristics that the cooperative will possess. The major specifications included are: name, purpose, location, scope of authority, headquarters, number of directors, and corporation status. The bylaws are much broader and more descriptive than the articles of incorporation and define how the cooperative is going to act. The bylaws typically contain clauses specifying objectives, membership eligibility, dues and patronage, election and duties of directors, election and duties of officers, voting rights, and rules in case of dissolution.

A common strategy in the elaboration of bylaws, and the strategy which was followed in the Southwest Virginia case, is to keep the bylaws broad and general and state the more

²¹see Appendix 4 for complete cooperative Bylaws

specific duties and obligations that need to be abided to in the business plan and the marketing agreement (see bylaws in Appendix 4). This practice is followed because the bylaws are legally binding, and changes or amendments are often difficult, costly, and time consuming.

In the Southwest Virginia cooperative case the bylaws specify under the sub-heading of membership duties "*...to abide by the obligations stated in the Marketing Agreement.*" This wording legally binds the grower/members to follow details specified in the marketing agreement, but allows the cooperative the opportunity to change the marketing agreement from year to year without legal assistance. In a similar fashion, the duties of the directors and officers are broadly described, while a reference to more specific duties and obligations is mentioned in the cooperative's business plan. This allows for much more flexibility in determining the roles of directors and officers that work best for the cooperative.

It is within the marketing agreement and the business plan where the finer details that define the operation of the cooperative will be placed. The specific issues reviewed earlier such as the division of labor and the importance of a proper flow of information will be accounted for in these two documents. The marketing agreement will define the grower's duties, and specify particular tasks that ensure the proper flow of information. The business plan, likewise, will list the specific duties of all components of the cooperative, ensuring that barriers and constraints that have caused past cooperative failures are accounted for in the organizational structure of this co-op.

4.3 Cooperative Structure

The important issues in designing the optimal organizational structure of the cooperative are related to defining the roles and responsibilities of each co-op member and employee. The specific job descriptions will be discussed in section 4.4. At this time it is important only to recognize the specific positions that exist within the organization, how they relate to each other, and how they will ensure that the proper flow of information from consumer to producer will take place.

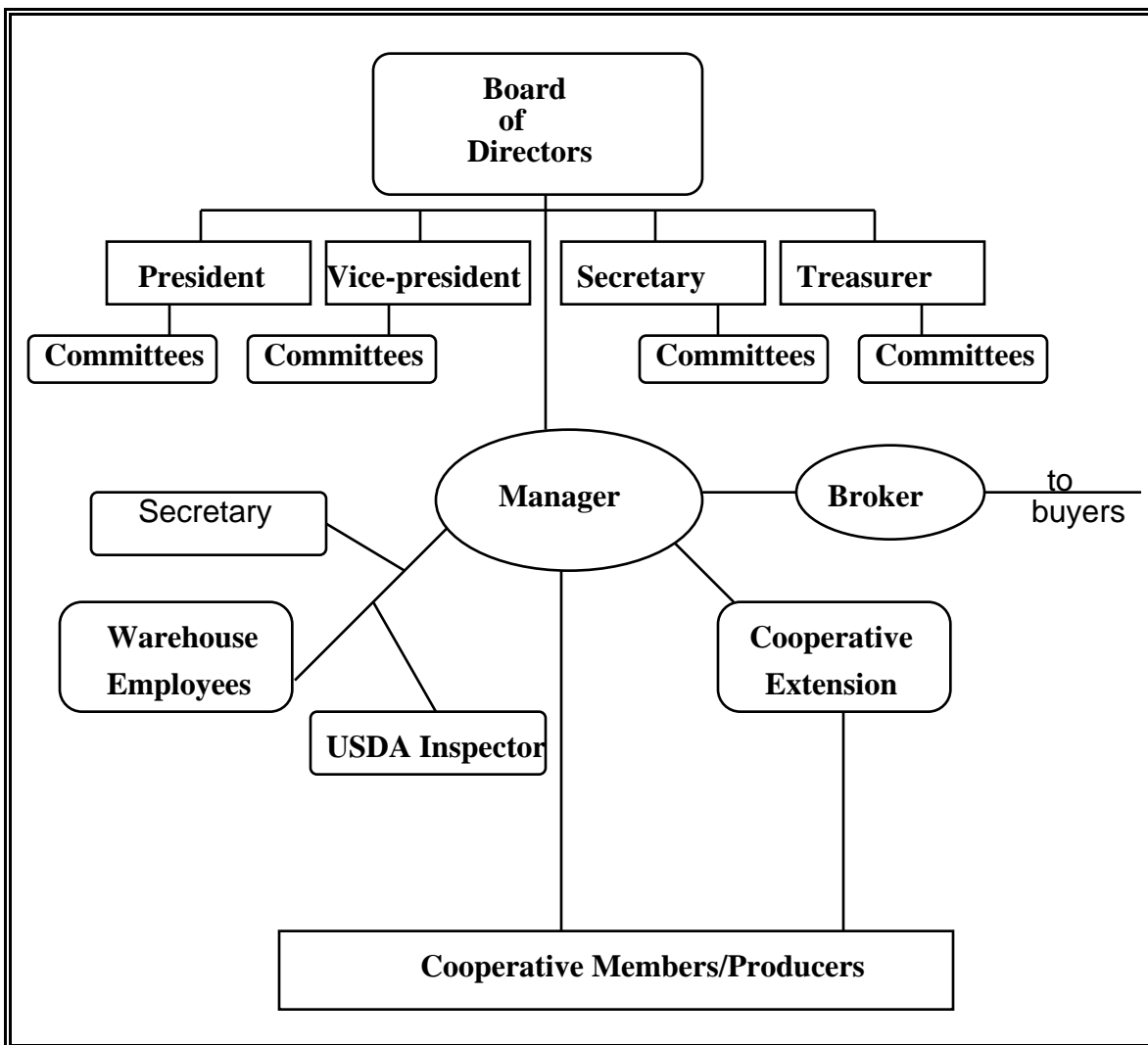


Figure 4.1 Organizational Structure of Cooperative

The key components that make up a cooperative are members, board of directors, officers, manager, broker, secretary, and employees. Within the board of directors there should be certain committees that address specific issues. Many of these specific issues are long term planning issues and technological advancements that occur over time. The purpose of creating these committees is to designate responsibility to specific groups for the acquisition of specific information. By assigning the responsibility of acquiring information to an individual or a group, one can make sure that these issues are constantly being addressed and do not fall by the wayside.

There are five long-term issues that the committees must specifically address. They are:

- production technology
- post-harvest handling technologies
- labor issues
- marketing strategy, and
- budgetary issues.

The committee responsible for the production technology should be lead by a horticulturist, specifically, the cooperative extension agent if possible. Other members with horticultural expertise or access to horticultural information resources should also participate in the committee. The responsibility of this group should be to research and study issues related to new advancements in agricultural production technologies. This group should try to stay up-to-date in horticultural issues such as crop varieties, planting techniques, irrigation and farm equipment, chemical applicants, fertilizer practices, and other technical issues.

Agricultural practices may or may not change rapidly over time. This group should be focused on making themselves aware of technical changes as they occur in the industry. Some practical methods of maintaining up to the day information include consulting with

university horticulturists, subscribing to horticultural publications, searching the internet, or visiting other production regions and projects.

The importance of closely watching horticultural technologies allows the cooperative to take advantage of new techniques to improve qualities, lengthen shelf-life, lower costs, increase profits, and remain competitive. The failure to adapt new practices quickly could potentially force the cooperative out of business.

The committee designed to keep up to the day on post-harvest handling technologies has much of the same responsibilities as the previous committee. This group should be headed by an agricultural engineer or some person in the industry of buying and selling post harvest handling machinery. The focus of this group is to ensure that the cooperative possesses the equipment required to meet market standards. As standards change, the technology required to meet the new standards may also change. New technologies can lead to producing more attractive produce or lowering the costs of processing at current standards. The failure to keep up-to-date on new technologies can give a competitive advantage to the competition and cause buyers to prefer other suppliers' produce over the cooperative's.

The committee in charge of labor issues will have as its major objective to attend to all issues related to recruiting, housing, and taking care of migrant labor. The use of migrant labor is relatively new to the region and unknown to many Southwest Virginia growers. Because of the newness of the issue, and much uncertainty related to managing migrant labor, a special committee needs to be formed to address these issues on behalf of the growers.

Migrant labor can satisfy all labor needs for the region's growers. Crews of migrant laborers can be recruited in most any size. Due to the nature of tomato, pumpkin and pepper production, which requires relatively large amounts of labor at planting and harvest time, and much less during other phases of production, (see appendix 2) there is a potential for cost savings through sharing labor crews.

Labor crews can be shared with proper planning. If planting dates are staggered so that when some growers require large quantities of labor others need relatively little labor, crews can be shared and costs reduced greatly. In order for some form of labor sharing to take place, a committee must be formed that addresses the needs of the growers and coordinates among them to maximize the utilization of the available labor.

Another need for this labor coordinating group is to assist growers with labor housing and health care issues. Many Southwest Virginia growers have expressed the concern that they do not possess adequate living quarters that meet federal standards for migrant workers. The requirements for housing migrant labor include minimum square footage per worker, treated running water, safety devices, minimum nutritional standards, and other requirements that many local growers can not meet. The role of the organizing committee will be to coordinate living arrangements between growers who possess adequate housing and those who do not. The committee must make sure that all growers are properly charged or compensated, depending on whether they use or provide housing services.

Due to the nature of migrant labor and the lack of experience in the region, there is a need for a central organizing committee to address these special labor issues and stay informed about new developments and regulations that may occur in the industry.

A committee needs to be formed to address marketing issues. This committee should be headed by the broker and any directors or members that have marketing experience. The focus of this committee should be to gather information related to changing consumer preferences, retail trends, industry requirements, and any new developments that may occur in the marketing of fresh produce.

It is important that these marketing issues are constantly addressed and frequently updated. The inability to recognize industry standards has been discussed as a reason contributing to past failures. As consumer preferences change, or as the retail and marketing network changes, the cooperative must quickly adapt to these new developments in order to remain competitive. The ability to adapt quickly to changes in market structure or consumer demand may mean the chance to earn excess profits as a new entrant, while a slow adjustment may lead to losing market share.

Some of the tasks required of this marketing committee may include reading food-retail magazines, interviews with purchasing agents, visits to retail outlets, and consumer surveys. The ability to recognize and react quickly to changing trends and consumer demand may be the difference between success and failure.

The last essential committee should be the budget committee. This committee should be headed by the cooperative's treasurer. This committee should make sure that the cooperative is earning, saving, and investing sufficient funds to meet its long term goals and objectives. This committee will closely monitor the price charged to growers, and the retain withheld from the growers, in order to ensure that the cooperative possesses adequate equity.

This committee will also have the responsibility for preparing medium and long-term budgets related to the objectives of the co-op. As the cooperative identifies long-term goals, such as the purchase of a new building, modern equipment, a truck, new coolers, or any other long-term investment, the committee will have the responsibility of finding the best price and assure that savings are adequate to cover these costs.

Each of these essential committees should periodically report to the board of directors during the monthly board meeting. The manager should be present and a discussion should be held as to the relevance of any newly reported developments. It is important to keep the entire board, extension agents, management and broker up to date in all aspects of production and marketing so that the cooperative can function efficiently.

The primary role of these committees is to ensure a proper and adequate flow of information within the cooperative structure. By assigning specific duties and responsibilities of obtaining information to the designated committees, the co-op should be assured that the lack of information will not be a cause for the decline of the co-op. By discussing the findings of the groups at periodic board meetings, the co-op can ensure that there is an adequate exchange and flow of information between all components of the co-op. Informational committees will be the tool that this co-op uses to overcome the historic problem of poor internal communications and ensure that consumer preferences are made known at both ends of the production and marketing network.

4.4 Business Plan²²

The business plan is the map or blueprint that the co-op will follow in attempting to reach its objectives. The business plan should be the result of a strategic planning analysis that considers short, medium and long-term goals. The business plan will act as a guide, specifying exact actions that must be taken in order to obtain the cooperative's objectives. The business plan should consider the strategic planning framework and the Phase One study in deciding the steps that the cooperative should follow.

The business plan should include certain specific elements. It should start by defining the cooperative's principle objective. This can be accomplished by summarizing the mission statement. The co-op strives to increase family farm incomes and create a supply of locally grown produce by offering regional growers the necessary marketing infrastructure to break into the fresh produce industry.

The second major step is to determine a specific product mix. The cooperative's product mix refers to the combination of crops that will be produced by the growers and marketed through the cooperative. The cooperative will start operations in its initial years by producing and marketing string-weave tomatoes, green Bell peppers, and Halloween pumpkins. The product mix was chosen based on grower acceptance, purchasing agent interest, and the financial feasibility study conducted during Phase One of the Southwest Virginia Shipping-point Market project. Peppers and tomatoes were chosen because of their high profitability, regional acceptance, large volume potential, and purchasing agent interest. Pumpkins were chosen because of high local interest, because they are not labor intensive, and because they are a good late season complement to the other earlier

²²see Appendix 5 for complete business plan

summer crops. The feasibility analysis, volume estimates and income estimates presented in the Appendix are based on this three crop product mix.

Of the ten potential crops identified in the Phase One study, tomatoes ranked as the most profitable and peppers as the third most profitable of all crops examined. Both of these crops are demanded in high volumes by produce purchasers. The benefit of being a high volume crop is that more local growers can potentially participate in the production of these goods. Other products such as asparagus, and certain herbs and spices were found to be extremely profitable on a per acre basis, but there was not enough demand for these products to involve the participation of a large number of local producers.

The Southwest Virginia region has production experience with both peppers and tomatoes. In the region there was a tomato cooperative during the 1970s and a pepper co-op in the mid 1980s. Both of these commodities are grown in family gardens, and on a small scale for direct farm sales and for sale to local markets in the region. Farmers should have minimal difficulty adapting to the production of these two commodities. Unlike the broccoli cooperative of Southside Virginia, the producers have ample experience in the production of tomatoes and peppers, therefore they will not have such an arduous learning process of adapting to implement new technologies. The producers who have participated in the cooperative's organizational meetings have demonstrated enthusiasm for these two crops.

Purchasing agents surveyed in the Phase One study demonstrated strong interest in buying these two commodities. Produce buyers recognize the strong preference by Southeastern United States consumers for locally grown produce. Eighty percent of all produce buyers interviewed showed strong interest for high volume crops that can be produced locally. These buyers recognize the marketing potential of both tomatoes and

peppers for bringing new customers into their stores, thus giving them an edge over competitors who only market out-of-state produce.

Pumpkins were chosen because it is a late season crop, a low labor intensive crop, it is a traditional crop that grows well in the region, and there is an interest by supermarket chains to purchase this crop. The nature of marketing Halloween pumpkins, with the large consumer demand during the last two weeks of October, makes it a unique crop and one that compliments well the other two crops of the product mix. Pumpkins can be planted in mid summer and require minimal attention until late October when the farm season for most other crops has already finished. Pumpkins thus provide an excellent source of late season revenue for the farmer and for the cooperative.

Pumpkins and other crops from the same family such as squash have been traditionally produced in the region for many years. Many growers have been producing pumpkins for local sale, but due to the lack of a marketing network, there has been no previous attempt to expand production and break into larger markets. The region is agronomically and climatically suited for the production of this crop. There has been enormous interest from local producers to increase production and develop marketing channels for Halloween pumpkins.

Local extension agents have formed interested producers into an Association of Pumpkin Growers. This association has been legally incorporated and the association's bylaws have been drafted. The pumpkin association has very little working capital to develop their marketing network, thus it can benefit from the infrastructure being assembled at the Southwest Virginia Vegetable Cooperative. The cooperative manager/broker, who will be developing relationships with produce purchasers and bargaining on behalf of the growers, will be able to use his expertise and his connections to market the pumpkins for

the local growers. In return the cooperative will charge the association for these marketing services which will help the co-op offset some of the costs of operating late into the season.

Supermarket purchasing agents have also demonstrated high interest in buying Halloween pumpkins. One large chain's produce purchaser has participated in several of the Pumpkin Association's organizational meetings outlining market requirements and standards for the production and marketing of pumpkins.

The next step should be to consider a marketing strategy. The cooperative directors must determine a strategy for marketing produce in order to design the co-op to be able to carry out the necessary functions. Depending on the target purchaser, the quality and standards of the produce, as well as packing, grading and delivery requirements, will vary. One must identify first the targeted market in order to identify the necessary tasks and to create a structure that addresses these tasks. The marketing strategy that will best allow the cooperative to obtain the objectives outlined in the mission statement is to concentrate on a few high volume crops such as tomatoes, peppers and pumpkins and sell them directly to large supermarket chains located in and around the state of Virginia.

The other primary components of the business plan include establishing short, medium, and long-term goals, preparing profiles on the major competitors, and outlining a specific marketing strategy for each individual product. The business plan should be thorough and contain the input from all six skilled professional groups. If the business plan is well thought out, discussed, and explained to the members, it should minimize the probability of an unforecasted event from negatively impacting the cooperative's operation.

4.5 Marketing Agreement²³

The marketing agreement is a contract that is signed between the producers and the cooperative organization. In the marketing agreement the obligations of both parties are specified, the rules for participating as a member of the cooperative are laid-out, and details about specific operations of the cooperative are explained.

The specific obligations outlined in the agreement that are the responsibility of the cooperative include agreeing to market all No.1 grade produce, to provide information on technical production issues to growers, to supply producers with certain factors of production, to receive, wash, grade, pack and cool all produce, to transport produce to buyers, and pay the growers for their produce. The specific responsibilities of the growers include maintaining communication with cooperative management, purchasing all specified inputs from the co-op, selling all specified acreage to co-op, producing certain varieties, meeting marketing standards, irrigating produce, following production "package" and following designated delivery obligations.

The major reason cited for the failure of past cooperative efforts has been the inability to meet market standards and requirements. The cause of this failure to meet market standards has been noted as the inability to design an internal information system that allows consumer preferences to flow from one extreme of the marketing network to the other extreme where it can be included in the growers' production technology. The cooperative must identify the specific variety, color, size and shape characteristics of each product, as well as the volume, packaging, delivery, and business requirements demanded by the industry buyers. The cooperative must then translate these market

²³see Appendix 6 for entire marketing agreement

requirements into a production and post harvest handling technology that will ensure that growers will produce a product that meets industry standards.

The marketing agreement is the major tool which is used by the cooperative to ensure that the growers produce a product that meets the desired market standards. Attached to the agreement as an appendix are the exact quality standards that must be met. The growers will be able to look over the specified quality standards in order to fully understand the characteristics of the products that they must produce. The cooperative will have no obligation to market produce that does not meet these standards, therefore, they will be able to avoid past problems related to selling substandard produce which leads to a poor reputation.

Included as a second appendix will be the production package or technological specifications. The production package will specifically detail all technical steps that must be taken in order to produce a product that meets the predetermined quality standards. The production technology will be developed by horticulturists and extension agents with the help of experienced growers in order to develop the technology that will provide the growers with the highest probability for meeting quality standards. The development of the production package is thus the way in which the horticultural expertise needed to be successful is incorporated into the organization. The production package should be designed in such a way that a producer with absolutely no previous experience can follow the specifications and produce a high quality product.

Some of the specifications outlined in the production package include: land preparation, use and timing of chemical applications, irrigation schedules, weeding methods, pesticide use and harvesting procedures. Ensuring that all growers use the same seeds and inputs and follow the same technical procedures should guarantee a high quality, homogeneous

product that can be assembled and sold as a large volume of a single, uniform product. Without specified varieties and production methods, the growers may produce a wide range of varying product that can't be sold together and thus prohibits the cooperative from meeting large volume requirements.

The marketing agreement also ensures that all parties fully understand their role, and this understanding permits the smooth operation of the cooperative. The obligations of the growers and the co-op management are specified which ensures that all participants know their role. The existence of this agreement and the written obligations of each party will help alleviate the coordination problem that has greatly contributed to the failure of the region to expand horticultural production. The transaction costs of coordinating the large number of small producers will be minimized once a document specifying each party's obligations is signed. The need and cost to communicate among growers and the cooperative will be minimized by following the specifications outlined in the marketing agreement. Each grower will possess the required technology and be able to concentrate on the administration of his or her farm, while the cooperative will be able to concentrate on the post-harvest handling and marketing tasks.

The final objective of the marketing agreement is to specify delivery and payment procedures. The knowledge that growers will sell all their produce to the cooperative and that the cooperative has marketing experts working full time on obtaining the best price for the members will reduce uncertainty amongst the growers which should lead to greater regional participation and expanded acreage being produced. Since there are virtually no prespecified purchasing contracts in the fresh produce industry, the cooperative can not guarantee a specific price for the produce that they market. The cooperative, like all large and small producers, is subject to the market price at the time

of the sale. The cooperative can not guarantee the growers a specific price, but can guarantee them a competitive price based on the conditions of the market.

4.6 Roles and Responsibilities of Key Personnel

Part of the problem of poor communication flows was resolved through the implementation of the marketing agreement. The marketing agreement ensures that there is communication and coordination between the large number of disperse producers and the cooperative entity. The growers and the cooperative personnel also have important roles individually that they must fulfill. The elaboration of the production package is the tool that is used to ensure that all growers are complying with the same production technology which will allow for the production of a high quality homogeneous product. The tool that addresses the issue of the compliance of specific tasks for the cooperative personnel is their job descriptions²⁴.

Based on the list of essential tasks presented in Chapter 3, job descriptions are written for each employee and board member that assign specific responsibilities for carrying out these essential tasks to each member of the cooperative organization. The objective of writing the job descriptions is simply to ensure that each cooperative worker and board member understands and properly carries out their particular role.

The six major professions listed in Chapter 3 are essential to producing and marketing horticultural produce. These professional skills are farmer, business administrator, agricultural engineer, manager, horticulturist, and marketing specialist, and each must be accounted for within the organizational structure of the cooperative. The job descriptions will address each of the skills of the six professions and allocate responsibility to some

²⁴ see Appendix 7 for complete job descriptions

member of the cooperative organization to ensure that the essential functions are being carried out.

The job descriptions, along with the marketing agreement and business plan, address the critical issue of information flow from consumer preference to producer technology. The role of the broker includes: identification of quality standards, identification of packing and grading standards, and communication of marketing requirements to the manager. The manager has as part of his job description to take the market requirements and work with the horticultural experts in the preparation of a production package that will allow the growers to produce a high quality product. The extension agents will then work with the new growers to ensure that the appropriate technology is correctly implemented and the growers obtain the expected quality standards.

Each specific task described in Chapter 3 is assigned to a specific member of the cooperative organization. A thorough presentation of each job description which outlines the tasks required of each member is presented in Appendix 7.

4.7 Key Issues to Success

The organizational structure proposed above addresses all of the critical issues identified during the two years of research on this project. The major problems that have caused past cooperative efforts to fail were identified in Chapter 2 as: failure to use irrigation, poor quality produce, failure to understand market standards, improper post-harvest handling, poor business practices and insufficient volumes. Each of these problems was addressed by creating a cooperative organizational structure employing specialized personnel with specific job descriptions designed to take actions to remedy the problem. Once the organizational structure is in place, there are still four major cooperative issues

that must be addressed to ensure proper coordination between all the members, board of directors, management, and co-op employees. These four issues can be summarized as compliance by all parties, long term commitment, quality production, and manager/board flexibility to react to unforeseen circumstances.

Compliance by all parties refers to the ability of each cooperative member, director, and employee to properly fulfill their specified function. If growers fail to comply to the marketing agreement, coordination problems may arise, or if growers fail to produce specified acreage, marketing relationships may be ruined. The board must set sound policies, the broker must establish fair markets, the manager must ensure a proper flow of information, and extension services must ensure the growers are using a technology that will allow them to produce a product that meets market standards. The failure of any component of the cooperative to carry out the tasks outlined in their job description may cause the entire cooperative to fail.

This reliance of all parties on each other was highlighted in the discussion on uncertainty and the prisoner's dilemma game. If a failure to comply by one party leads to low prices for the other growers, each grower may lose the incentive to cooperate and maximize his expected profits by abandoning the cooperative and returning to traditional agricultural production that provides a known return.

The second issue of a long term commitment refers to the ability of all parties to recognize that there is a learning curve for all members of the co-op and that developing relationships with buyers takes time. All cooperative members and employees must possess the willingness to accept lower profits in the initial years, with the understanding that profits will increase as the cooperative builds a reputation.

In the initial years the yield of No. 1 produce may be low thus reducing returns to the growers. The volumes may be small in the first few years, thus causing the co-op to charge growers higher prices for marketing their produce. The broker may have to spend a few years test marketing small quantities with purchasers in order to build up the retailers' faith in the ability of the cooperative to produce a high quality product. All of these factors may contribute to low profits in the first few years.

If growers drop out after a few years of low profits, or if the manager leaves the co-op after a short time, or the broker abandons his markets, the cooperative may not be strong enough to handle this adversity and may be forced to dissolve after just a few years.

There is a general consensus among experts familiar with horticultural cooperatives that, if the cooperative can survive the first four years, it is likely to function profitably for several decades. All parties must therefore recognize the possibility for low profits in the first few years and be willing to commit to the cooperative for a period of at least five years in order to give the organization a fair chance to compete with the older, well established competition.

The third important organizational issue refers to the ability or flexibility of the board of directors and of the manager to react to a dynamic environment and implement changes in policies and practices in a quick and efficient manner. The board of directors are unpaid positions, and they may lack the financial incentives to work hard and make the proper decisions. The number of tasks that are required of the board members are numerous²⁵ and may require substantial time and effort to satisfactorily fulfill them all. If personal financial opportunities prevent board members from applying the effort needed to carry out all of the essential tasks required of their position, substandard policies may

²⁵ see Appendix 7

remain in place that prohibit the co-op from obtaining maximum benefits for the producers.

The paid employees such as the manager, broker, and graders have an incentive to maintain the cooperative as profitable as possible in order to ensure the existence of their source of employment. Some forms of payment such as bonuses for high levels of production or profits may create additional incentives for the paid employees to apply additional effort and maximize the returns of the co-op members. Although many board members are also growers, and therefore do have an incentive to work for maximizing grower returns, conflicts may arise between the time they allocate to board meetings and the time they allocate to agricultural production and off-farm employment. The cooperative organization should take precautions to ensure that board members are meeting regularly, are carrying out their specific tasks, are up to date on market trends, and are setting policies accordingly.

The ability of the manager is another critical issue that may influence the success of the cooperative. Appendix 7 lists the major tasks of the manager, but the success in carrying out these out will vary with the ability of the person employed. The manager has the most extensive role among all members of the organization. During interviews with both past failed and successful cooperatives, the ability of the manager was frequently cited as a determining factor contributing to either the success or failure of the cooperative.

The manager acts as the central coordinating entity for all components of the cooperative, therefore, it is more likely that the system can falter due to the inadequacy of the manager. The manager is the one person who has to be well trained in all aspects of the six critical professions. In order to make optimal decisions and ensure the proper flow of information, the manager must understand production, post-harvest handling, good

business practices, and marketing. It is very important for the success of the cooperative that a highly qualified manager is employed to oversee the day to day operations of the co-op.

The last issue may not directly be an organizational issue and may also fall under the compliance category, but it is extremely important and therefore deserves to be mentioned separately. The issue is that of producing a high quality product. Producing a high quality product may be the result of complying with the specified production technology, it may depend on the willingness of the grower to invest in machinery and equipment, it may depend on the success of the cooperative's educational and extension efforts, or it may depend strictly on environmental and climatic conditions.

Many cooperatives have failed because the quality of the good being produced has not met market standards. The fresh produce industry is not profitable for any other level of product that is not high quality. The industry is extremely competitive and very unforgiving. Many produce purchasers have commented that they have received substandard loads of produce from various sources and they have never again bought produce from those sources. The same purchasers have stressed the fact that reliability is a major determining factor in deciding where to buy their produce. This reliability factor again emphasizes why reputation is so extremely important. Once a produce buyer has a consistent supplier of high quality produce they are reluctant to dissolve that relationship to purchase from other sources.

The Southwest Virginia cooperative must ensure that quality standards are being met, and if they are not being properly met, they must not try to market the substandard produce as No. 1 produce. Conflicts may arise between management and the growers as to what constitutes No. 1 produce. Therefore, the cooperative should contract an impartial USDA

qualified inspector to inspect and approve all produce before it is packed and shipped to the buyer.

Based on the results of the Phase One study, if the product meets the established quality standards and it is properly graded, packed and cooled, there is a demand for locally grown produce, and the cooperative should be able to market at a competitive price all of the product produced. Small producers in Cumberland, Kentucky, which share similar geographic and cultural characteristics with the Southwest Virginia growers, have averaged around \$6,000 per acre return for tomatoes and \$4,000 profit per acre for Bell peppers over the last fifteen years (personal communications).

4.8 Chapter Summary

The key components of an organizational structure that address the barriers and constraints faced by the Southwest Virginia growers have been presented in this Chapter. The major factors that have contributed to past cooperative failures have been identified and addressed within the organizational documents that govern the behavior of the cooperative.

The critical issues of proper coordination among all members of the cooperative and assuring the production of high quality produce were addressed in the business plan and the marketing agreement. Information has been gathered on market trends, production alternatives, market standards, and post-harvest handling requirements. This information has been used to develop a business plan and job descriptions that will assist the growers to organize themselves into a well functioning cohesive organization.

Poor management decisions, lack of qualified personnel, and insufficient planning are often cited as contributing factors leading to the failure of farmer associations and cooperative efforts. The detail plans summarized in this chapter and presented in the appendices are designed to ensure that lack of information or experience are not elements that prevent the organization from competing with larger, more experienced suppliers.

Chapter 5 Summary, Conclusions and Implications

5.1 Introduction:

Agricultural producers located in the Southwest Virginia region have been unable to expand horticultural production in order to break into larger markets. A market failure has been identified that prohibits growers from participating in this potentially profitable industry. The market failure was caused by high transaction costs that have prevented individuals with specialized expertise from forming a cohesive organizational structure and working together to address the existing barriers. Regional growers who produce horticultural goods for sale to small, local outlets are forced to undertake all of the essential tasks of producing, managing, and marketing.

Past efforts to organize growers into farmer cooperatives failed because an organizational structure did not exist to ensure that all of the essential tasks required to produce and market produce were being performed. In many of the past cooperative efforts, government financial assistance was provided to the growers so that they could overcome the transactions costs of organizing and coordinating themselves, hire qualified personnel, and purchase the physical equipment and infrastructure required to market fresh vegetable produce. In many of these cases the growers were unfamiliar with the cooperative ideology and lacked the experience to organize themselves into an efficiently functioning unit that would generate profits and lead to long-term sustainability.

The ability to accumulate information on horticultural markets and cooperative structures involves considerable research, far more research than most growers can afford or successfully carry out. The costs of carrying out the research to obtain the required information needed to design an efficient cooperative structure have prevented past cooperative efforts from becoming properly organized, thus contributing to their inability to succeed in a highly competitive industry. The information presented in this research

document is designed to provide a group of generalist farmers with the expertise required to properly organize themselves into a cohesive cooperative association. A proper organizational structure should allow the growers to address all critical issues and to generate profits where individually they have been unable to do so.

This research, which was financed by the USDA and supported by the Virginia Tech Department of Agricultural and Applied Economics, specifically addresses the issue of the transactions costs of gathering information. The information provided in this document should reduce the uncertainty of starting a new and unfamiliar enterprise. This document is designed to act as an organizational outline and should prevent the cooperative members from repeating past mistakes and ensure that the proper steps are taken to supply national consumers with the high quality product that they demand.

5.2 Summary of Research

Southwest Virginia growers are currently in the process of incorporating themselves into a legal cooperative organization. The organization has obtained funding from the Rural Business Cooperative Service which the co-op will use to acquire a marketing infrastructure and hire qualified personnel. This initial grant will help overcome some of the physical and financial barriers that have prevented the region from expanding horticultural production into larger markets. With the major physical barriers addressed, the cooperative organization needs to address other problems and constraints that have impeded past horticultural cooperatives from succeeding and take steps to ensure the co-op's long term survival.

The major factor contributing to past failures stemmed from the associations' inability to organize themselves into a structure capable of producing and marketing a product that

consistently meets market standards and requirements over a long period of time. Interviews were carried out with growers, extension agents, marketing specialists, horticulturists, and produce buyers to gather information and isolate the key issues that have contributed to these past failures. A finding of the study was that no one specific factor was responsible for these past failures. Depending on the group interviewed, the reasons presented as major contributing factors were contradictory and inconsistent with those from the other groups.

Growers cited the lack of marketing infrastructure and the inability of marketing specialists to develop new markets as the primary reasons contributing to the past cooperative failures²⁶. Marketing specialists cite poor quality and small volumes of produce as the major contributing factors. Extension agents expressed the belief that the lack of grower commitment has been responsible for the past failures. Extension agents explain this lack of commitment as the failure to invest in irrigation equipment and other farm equipment required to produce a marketable product. Horticulturists pointed out the tobacco market as a major determinant affecting the behavior of the Virginia growers. Several horticulturists believe that an upswing in the tobacco market caused new horticultural producers to lose interest in the high labor and time intensive vegetable crops, and dedicate more time on the tobacco crops. Produce purchasing agents identified inconsistent quality, bad business practices, insufficient volume, and unreliable deliveries as the major reasons why they did not purchase Southwest Virginia produce²⁷.

The major conclusion to be derived from the interviews and surveys of these five groups was that each group was apparently acting independently of the other groups. The proper coordination and exchange of information was not taking place. Therefore, there were

²⁶1995 Growers' survey. Results detailed in Coale et al 1996

²⁷1995 Produce purchasing agent survey. Results detailed in Coale et al 1996

breakdowns at several points along the way of the horticultural production and marketing network. Six major professions have been identified as essential to the production and marketing of horticultural produce. Each group or profession is dependent on other groups to comply with certain standards and requirements in order for them to fulfill their responsibility to another group. The horticultural industry's production and marketing network is not a linear channel, it is a circular network with each component dependent on other components in order to be able to fulfill their functions.

Growers need the help of horticulturists to obtain the most efficient production system. Horticulturists must work with marketers to design a production system that meets market standards. Marketers must work with agricultural engineers to develop a post-harvest handling technology that meets industry standards. The agricultural engineers must work with extension agents who then communicate to growers the most appropriate harvesting and shipping technologies that facilitates the post-harvest-handling process. Growers must produce a high quality homogeneous product that allows the marketer to guarantee that a high quality product will be delivered to the produce purchasers. The manager must coordinate all six professions and ensure that each component understands their obligations and is complying with the requisites established for the succeeding component.

Given the nature of the region and the vegetable industry, producing and marketing horticultural commodities involves enormous cooperation and coordination. The region consists of numerous small, disperse, and inexperienced growers trying to compete in an industry against large, experienced growers with well established markets, a well defined organizational structure, a favorable reputation, and lower per unit costs of production. In order to compete against these larger, more efficient production regions, Southwest Virginia growers must pool resources, share costs, and coordinate activities that will

allow them to carry out all the essential tasks that are carried out by the larger producers on a bigger scale.

Coordination for the Southwest region is more complex because of the large number of producers needed, the small farm sizes, the lack of experienced producers, the geographic and climatic restrictions of the region, and the region's poor reputation attributed to past failures. The failure to comply with any of the pre-planting planning tasks, production requirements, harvesting needs, post-harvest handling standards, marketing tasks, quality standards, or delivery requirements can lead to a failure in the entire system. It is not enough for five of the six principle operations to be adequately carried out, all six must be properly attended to in order to maximize the price received for produce sold.

The diversity of responses to the question of why the past cooperative efforts have failed demonstrate that it is not always a simple chore to identify where along the production and marketing network the system breaks down. The fact that each component of the process identifies some other component or exogenous factor as being the principle cause of the failure leads one to conclude that all parties do not share the same knowledge about the entire production and marketing process. Growers understand production while marketers understand the retail industry, but they do not share common knowledge about each other's expertise.

An organizational system must be created with specific tasks that identify all aspects and critical factors in the production and marketing of horticultural produce. An intense educational effort must be undertaken that will provide all participating parties with an adequate understanding of the entire process. A major function of this educational process should include educating the growers, horticulturists, and extension agents about the specific market requirements demanded by the produce purchasers. Once all parties

possess an adequate understanding of the entire process, then specific job tasks can be identified as important to ensure that there is proper coordination from production to marketing which enables marketing standards to be met.

The method that this research has taken to ensure that all parties understand the entire process and that the essential tasks are known and being carried out is to specify them in the legal and strategic documentation that governs the operations of the cooperative. Bylaws, a business plan, job descriptions, and a marketing agreement specify how the cooperative will operate. It is very important that, while developing these documents all six major professions have a thorough understanding of the entire process, each component contributes their particular expertise, and tasks are identified that permit proper communication and coordination between the different components of the process.

This study has attempted to fulfill the function of information gatherer and central coordinating agency. The transactions costs of researching the problem of past cooperative failures and the identification of steps that need to be taken to increase the possibility for success have previously been prohibitive. The USDA funding received for this study, along with the cooperation of the Virginia Cooperative Extension, have allowed for the identification and development of an organizational plan that addresses all of the critical issues identified as having contributed to past failures. The information gathered for this research was obtained from an extensive series of interviews, visits, and surveys with growers, horticulturists, marketing specialists, agricultural engineers, managers, and cooperative personnel. These interviews lead to the development of an organizational structure presented in this research. This organizational structure should prepare the cooperative for the major tasks that it must confront, while preventing poor communications, unknown obstacles, or unforeseen expenses from causing unconquerable problems.

5.3 CONCLUSIONS

In the current market it is very difficult for the small farmers to compete with the large producers. In much the same way that restaurant chains have replaced many family-owned diners, or that Wal-Mart has replaced many small businesses, it is difficult for a small agricultural producer to compete with the economies of scale advantages possessed by the extremely large agricultural enterprises over small producers. Some economists might argue that the consumer has voted with their dollars and have chosen the mega-enterprises. Others might argue that these large corporations have grown so large that they possess sufficient market power to influence the terms of trade to their advantage. If this second argument is true, it is the national consumer who is losing and paying higher prices for inferior quality products.

The fresh produce industry is dominated not only by large growers located in the major production regions, but by fewer and fewer very large retailers. The trend that has come to dominate the industry over the last two decades is the concentration of fewer very large retailers being supplied by fewer very large suppliers. The phenomena that is taking place due to the emergence of these large, ubiquitous retailers, is that many of these firms are gaining market share, not through offering higher quality, but by providing the consumer with a wider variety and greater convenience, and by influencing the consumer through mass advertising. Large franchises possess economies of scale in production, transportation, and advertising. Television commercials, newspaper advertisements, and radio spots are costly, but the large franchises can share the costs among a very large number of outlets. This ability to expend greater amounts of resources on advertising has affected the perception of the national consumers in favor of the supermarket retailers.

Large shopping outlets and supermarkets frequently do not out-compete the small businesses in terms of the prices and quality of products that they sell as much as on the variety, convenience, and time savings they offer the consumers. Consumers often purchase many items at a one-stop shopping outlet instead of trying to find all the items they need at different locations. As more women became incorporated into the labor force, the opportunity costs of their time increased, therefore, many were willing to sacrifice lower prices and lower quality for a savings in time spent making household purchases.

This argument leads one to ask how one-stop shopping at large franchised retail stores has affected the small horticultural producer. The leading retailers of fresh produce are the supermarket chains. The supermarket chains have evolved into even bigger hyper-markets that sell many more general items than just grocery goods. The most attractive feature of these hyper-markets is not the quality of the produce they sell, but the time savings they offer their customers. Many consumers are willing to purchase the "generic" produce sold at the supermarkets instead of making an extra stop at one or more small, locally operated outlets to purchase fresher, tastier, locally grown produce.

This phenomena, whereby the very large supermarkets act as the principle retailers of fresh horticultural produce, has had a very substantial impact on the Southwest Virginia growers. It is not sufficient for local growers to produce a product preferred by local consumers, they must also work within the demands of the marketing network to meet not only the consumer standards, but the retail requirements as well. These additional retailer requirements have created barriers that have prevented Southwest Virginia growers from breaking into the fresh produce market on a large scale.

Horticultural producers from any of the northern non-traditional producing regions must organize themselves into an association that addresses both consumer quality preferences and the fresh produce retail market requirements. A large scale association is essential in order to compete with the producers located in the dominant, large-scale production regions. Large producers possess several advantages over the small producers such as lower per unit costs, established markets, a longer growing season, higher yields, and there is some evidence that they possess sufficient market power to influence the terms of trade to the disadvantage of the small producers.

While Southwest Virginia growers must face several constraints, they also possess a few advantages over the out-of-state producers. The potential advantages possessed by local growers may include lower transportation costs, local brand name recognition, fresher produce, and a better tasting product. These are the points that must become the focal point of the cooperative's marketing strategy. The cooperative association must use advertising techniques that induce local consumers to purchase the locally preferred product.

A CNN/USA Today survey (1997) showed that 28 percent of all produce sold at supermarkets is imported from outside the country. The same survey showed that, given a choice, 84 percent of all supermarket shoppers would chose nationally grown produce over imported produce. The most relevant fact to come out of the survey was that less than five percent of the consumers surveyed could identify the origin of the produce that they had purchased. These facts, coupled with the results of the Phase One produce purchaser survey which showed a consumer preference for locally grown produce, demonstrate that the Southwest Virginia cooperative has the potential to influence Virginia consumers to prefer their product.

This potential for exploiting the local preference for Virginia-grown produce may be the only opportunity that local growers have for competing with the large producers. In order to successfully implement this marketing strategy, the Southwest Virginia cooperative must reduce to a minimum the advantages possessed by the large producers, and exploit to a maximum the local advantages that they possess. If the cooperative fails to either narrow the advantages of the large producers or successfully exploit their local advantages, history has shown that the cooperative will probably fail in less than four years.

The ability to diminish the out-of-state advantage while exploiting the local advantage will require the cooperative to apply additional effort to the production and marketing tasks. Applying additional effort is usually associated with increased costs. The additional effort that is necessary in the production tasks will most likely be in the form of additional hours spent by the farmer and his family members in educating themselves in new production techniques, and increased time spent overseeing production and managing their crops. Therefore, the additional effort required will come from self imposed increases in labor time. Most small farm labor is unpaid labor. In most cases a small farmer does not pay himself or his family members a wage for their work, but shares the profits earned from the land with all family members.

While farm labor may be called unpaid labor, there is an opportunity cost associated with taking labor away from one activity and applying it to the farm. This opportunity cost is equal to value that could be obtained from applying additional labor to the next best alternative. In this unpaid labor scenario, additional farm labor is equal to the marginal value of the crop produced resulting from the increased effort. In the Southwest Virginia case, applying additional effort may not yet be associated with diminishing returns, since horticultural production is a relatively new industry still in the early stages of the

production curve. Increasing labor should be aimed at increasing quality and not necessarily at increasing yields. Since the fresh produce industry provides a premium for higher quality, increased effort should lead to increased quality which should lead to an increased price and return for the farmer.

This scenario whereby increased effort is rewarded with increased profits, sufficient incentive should exist to motivate the growers into applying the necessary additional effort. The potential problem that arises is that the returns from applying the additional effort remain unknown to most producers. Uncertainty continues to be a barrier to increasing farm revenues in Southwest Virginia. The returns that a farmer can generate from applying additional effort to his horticultural crops must be sufficiently higher than the marginal utility that he receives from leisure when not applying this additional effort. The trade-off between the growers' utility from leisure and the financial returns from applying additional farm effort is unknown to most growers, but critical to how the grower chooses to allocate his time.

A grower must be relatively certain that the returns from applying additional farm effort is greater than the decrease in utility from lost leisure. The research carried out during the Phase One study of this research and the present document have as an objective to provide the grower with both quantitative and qualitative information that can be used to anticipate potential gains from participating in the cooperative and applying additional effort to his farm. This current research demonstrates significant potential financial returns for the application of additional effort and it should be sufficient to induce a percentage of local growers to choose the returns from participating in the cooperative over the utility from leisure. If a significant number of growers are induced into choosing additional effort over leisure, the result should lead to economic development for the region.

Due to the nature of the cooperative with its large number of small disperse farms, it faces additional costs of communication and coordination that the large producers do not have to deal with. In the Southwest Virginia cooperative case, many of the tasks needed to fulfill the marketing objectives are of an organizational nature and will be developed by the board of directors and implemented by the cooperative manager. In this case the additional effort must come from an increased dedication from the unpaid board members and improved allocation of time spent by the manager and broker.

In order to exploit the local advantage that the cooperative possesses, additional labor time must be invested by cooperative personnel above that which is invested by the large producers. As with the production scenario above, increased wages should not be used to induce increased effort, because this would reduce the returns to growers and create a disincentive for them to participate in the cooperative. Substantial investments in time and effort by the manager, as well as by board and committee members, is needed to maximize the advantages that the cooperative possesses. The manager can potentially be induced to apply effort by offering him a percentage of total profits or performance bonuses when certain quotas are met. It may be more difficult to induce board and committee members to apply the additional effort required of them, because these are unpaid positions. The major incentive for board and committee members is that most of them are also producer/members. Since any additional effort applied should lead to increased returns for the growers, the expected increase in profits must be sufficient incentive to induce the necessary increases in labor time applied to the cooperative.

Inducing additional effort into production and coordination is an important concept that may determine the fate of the cooperative. In the economic development literature economic incentives must exist that induce a change in behavior that will lead to

development. Several parties that have participated in this research are convinced of the potential returns that can be obtained by Southwest Virginia growers if they modify their current behavior and participate in the proposed cooperative association. In order to ensure the participation of a sufficient number of local producers, an intensive educational effort must be implemented that convinces growers to participate in the cooperative venture.

The required educational effort should come from three different sources. First, the Phase One study and this current research document have as an objective to provide growers with the information that they need to make a rational choice about changing their behavior from traditional agricultural practices to one where they produce horticultural crops and market them through the cooperative. Second, Virginia Cooperative Extension has dedicated considerable labor time to organizing and educating local growers about the potential advantages of participating in the proposed cooperative. Third, the cooperative must have an outreach program that provides continual support and information to potential growers about production and marketing factors relevant to participating in the cooperative.

The conclusion of this research document is that the focus of this intensive educational effort should be aimed at diffusing the findings to potential participants about how to establish the optimal organizational structure within the cooperative. These organizational components emphasized in the appendices of this document are aimed at ensuring a proper flow of communication within the cooperative structure and guaranteeing that all production and marketing requirements are being met. This organizational information should be sufficient to diminish the uncertainty that has prevented many local growers from making the investments in time and resources needed to increase the probability for the success of the cooperative.

A successful educational effort that leads to the required investment in time and resources by growers should lead to higher prices and increased returns for participating farmers. Increased farm returns is the major objective of the cooperative effort as stated in the mission statement and should lead to increased economic development for the region as a whole.

5.4 Implications of the Study for Future Research

This research implies that small farmers can compete with the larger, well established producers of fresh horticultural produce, if they exploit a local marketing advantage and organize themselves in a manner that allows them to pool resources, reduce costs, and share risk.

In order to fulfill these requirements for exploiting the local market advantage, pooling resources, and sharing risk, a complex cooperative organizational structure has been developed to ensure the coordination necessary to carry out these tasks. The proper coordination is ensured by incorporating key organizational elements such as communication, marketing standards, and production technologies into the legal documents that govern the cooperative.

These documents which include the cooperative's bylaws, business plan, and marketing agreement have been developed by researching organizational components and strategies implemented by both successful cooperatives and past failed cooperative efforts. The Southwest Virginia cooperative's governing documents have been built on the past experiences of similar organizations. These documents emphasize several key

characteristics that can be duplicated in other production regions confronted with similar barriers caused by the nature of small dispersed growers.

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APPENDIX 1 TOP 100 GROWERS BY REGION

SOUTHEAST

Top 25 Growers

1995 Rank	1994 Acreage	Company year founded	HQ State	No. US Locations	Major Crop
1	30,000	A. Duda & Sons Inc (1926)	FL	5	celery, onions, corn, cabbage, greens, radishes
2	18,820	Dimare-Homestead (1965)	FL	7	tomatoes, beans, cucumbers, corn, squash, mixed veg.
3	15,600	Pacific Tomato Growers (1982)	FL	5	tomatoes, peppers, melons, squash, cucumbers, mixed, beets, beans
4	13,550	Six L's Packing (1947)	FL	7	Tomatoes, peppers, melons, squash, cucumbers, eggplant, Chinese Veg
5	10,484	Hundley Farms Inc (1969)	FL	2	corn, radishes, beans, squash
6	10,365	Thomas Produce Co. (1910)	FL	6	beans, tomatoes, peppers, cucumbers, eggplant
7	8,569	Zellwin Farms Co. (1947)	FL	1	carrots, corn, radishes, cabbage, greens, lettuce, cauliflower
8	7,265	Roger Harloff Farms (1976)	FL	3	tomatoes, melons, cucumbers, potatoes, corn, peppers, cabbage, squash, onions
9	7,000	NTGargiulo, L.P. (1963)	FL	8	tomatoes, strawberries
10	5,770	Pero Family Farms, Inc. (1950/1986)	FL	2	peppers, beans, cucumbers, eggplant, squash, tomatoes
11	5,760	Mecca farms Inc. (1962)	FL	3	tomatoes, peppers, cucumbers, eggplant, strawberries
12	5,750	Long Farms Inc (1952)	FL	3	corn, carrots, cucumbers, cabbage, radishes, potatoes
13	5,700	R.C. Hatton Inc. (1960)	FL	3	corn, beans
14	5,186	DuBois Farms Inc. (1934)	FL	1	peppers, cucumbers, eggplant
15	4,800	Barnes Farming Corp (1976)	NC	1	sweet potatoes, cucumbers
16	4,778	Suwannee Farms (1979)	FL	1	corn, cucumbers, potatoes, peas, beans, cabbage, onion, squash
17	4,600	Nash Produce Co. Inc. (1965)	NC	1	cucumbers, sweet peppers
18	4,000	McClure Farms & West Coast Tomato (1890)	FL	3	tomatoes, melons
18	4,000	Nobles Farms. (1960)	FL	1	tomatoes
20	3,900	Collier Farms, Inc (1987)	FL	2	tomatoes, potatoes, peppers
21	3,775	Sam S. Accursio & Sons Farms (1948)	FL	1	beans, squash, cucumbers, peppers
22	3,400	Taylor & Fulton (1952)	FL	4	tomatoes, cucumbers, peppers
23	3,300	Hilson Farms, Inc. (1966)	FL	1	beans, potatoes, corn
24	2,700	S.M. Jones & Co. Inc.	FL	1	corn
25	2,500	Green Beans of Georgia (1986)	GA	4	beans, peppers, cucumbers

TOTAL ACREAGE = 131,313

SOUTHWEST

Top 25 Growers

1995 Rank	1994 Acreage	Company year founded	HQ State	No. US Locations	Major Crop
1	15,920	Navajo Agricultural Products Industry (1971)	NM	1	dry beans, potatoes, pumpkins, onions, carrots, squash
2	15,600	Griffen and Brand Inc. (1958)	TX	6	onions, melons, peppers, cucumbers, strawberries,
3	8,000	Martori Farms (1940)	AZ	1	melons, broccoli
4	6,800	Sharyland Plantations (1973)	TX	4	onions, melons, carrots, broccoli, cabbage, celery, greens
5	6,350	Greer Farms (1968)	AZ	3	potatoes, mixed veg, onions
6	5,550	J.S. McManus Produce Co. Inc. (1933)	TX	2	melons, carrots, onions, cabbage, broccoli, mixed greens, peppers, cucumbers
7	4,900	Rousseau Farming Co. (1980)	AZ	2	melons, carrots, broccoli, cabbage, greens, onions, spinach
8	4,747	Pasquinelli Produce Co. (1943)	AZ	1	lettuce, cauliflower, broccoli, mixed veg, melons, artichokes
9	4,562	Holden Wallace Inc. (1943)	TX	1	carrots, onions, cabbage, beets, melons, broccoli
10	4,100	Starr Produce Co. (1960)	TX	1	melons, onions
11	3,695	Texas Hills Farms	AZ	2	lettuce, broccoli, cauliflower
12	3,500	Barkley Co. (1945)	AZ	1	lettuce, broccoli, cauliflower
13	3,300	Sakata Farms Inc. (1966)	CO	1	lettuce, broccoli, cauliflower
13	3,300	Everkrisp Vegetables Inc. (1972)	AZ	2	broccoli, potatoes, greens, melons, cauliflower, cabbage, lettuce
15	3,230	Pecos Cantaloupes Co. Inc. (1964)	TX	1	onions, melons, peppers, cabbage
16	3,000	Waymon Farms (1983)	AZ	1	lettuce, broccoli, spinach, greens
17	2,686	Doug Melon Farms (1946)	AZ	2	lettuce, broccoli, cauliflower, greens
18	2,500	Vogel & Fey Produce	TX	1	greens, cucumbers, cabbage, onions, melons, cabbage, corn,
19	2,375	Cargil Produce (1953)	TX	1	broccoli, peppers, spinach, cucumbers
19	2,375	Elmore & Stahl Inc. (1929)	TX	1	melons, onions, peppers
21	1,800	Charley Hayashida Farms Inc. (1958)	CO	2	Spinach
22	1,600	Robert Ruiz Inc. (1960)	TX	1	cabbage, peppers, cucumbers, squash, melons
23	1,400	Robert Holt Farms Inc. (1975)	UT	1	potatoes
24	1,230	Piedmont Farms	CO	2	squash, lettuce, cucumbers, spinach, broccoli, peas, onions, potatoes, corn, cabbage, cauliflower, beets, brussels, sprouts, turnips
25	1,200	Frank Barret Farms (1949)	TX	1	potatoes, melons

TOTAL ACREAGE = 113,720

NORTH

Top 25 Growers

1995 Rank	1994 Acreage	Company/ year founded	HQ State	No. US Locations	Major Crop
1	23,034	Hartung Brothers, Inc.	WI	4	corn, beans, cucumbers, beets, carrots, cabbage
2	8,950	The Crystal Fruit Co. (1984)	OH	4	radishes
3	8,040	A & W Farms (1979)	WI	2	corn, potatoes, peas, beans
4	7,100	Paramount Farms, Inc. (1955)	WI	2	potatoes, corn, beans, peas
5	6,635	Heartland Farms, Inc. (1945)	WI	2	potatoes, corn, beans, peas
6	6,473	Charles H. West Farms, Inc (1953)	DE	1	lima beans, peas, corn, cucumbers, spinach, carrots
7	5,444	Okray Family Farms (1905)	WI	1	potatoes, corn, beans, peas
8	5,186	Wysocki Farms, Inc. (1964)	WI	1	potatoes, corn, beans, peas
9	5,000	Borzynski Farms, Inc. (1973)	WI	1	cabbage, corn, beans, broccoli, mixed veg
10	4,567	Torrey Farms, Inc. (1977)	NY	1	cabbage, cucumbers, corn, onions, beans, peas, carrots, squash, pumpkins, beets, mixed
11	4,450	Anthony Farms, Inc. (1976)	WI	1	potatoes, corn, beans, peas
12	4,437	Twin Garden Farms (1954)	IL	1	corn, cabbage, cucumbers, squash, peppers, pumpkins, mix
13	4,330	Empire Farms, Inc. (1961)	WI	1	potatoes, beans, corn, peas
14	3,810	Dean Kincaid, Inc. (1952)	WI	1	potatoes, corn, onions, carrots, mint, spinach, cabbage
15	3,740	MY-T Acres, Inc. (1961)	NY	1	beans, beets, peas, corn, potatoes, carrots, cabbage, onions
16	3,550	K & O Farms (1980)	MN	1	potatoes, kidney beans, corn
17	3,273	Turek Farms (1969)	NY	1	corn
18	3,200	Dean Foods Vegetable Co. (1974)	WI	2	beans
19	3,195	Kludt Bros., Inc (1953)	NY	1	corn, beans, cabbage, carrots, squash, cucumbers
20	3,120	Buurma Farms (1896)	OH	2	radishes, greens, lettuce, onions, celery, carrots, corn, beets, spinach
21	3,008	Wiers Farm Inc. (1896)	OH	2	radishes, corn, lettuce, greens, squash, celery
22	3,000	Rousonelos Farms Inc. (1920)	IL	1	greens, beans, onions, beets, turnips, parsley
23	2,830	H. Smith Packing Corp. (1956)	ME	1	broccoli, potatoes
24	2,507	F.P. Wood & Sons	NC	1	potatoes, broccoli
25	2,434	Papen Farms Inc. (1920)	DE	1	corn, cabbage, beans, peas, cucumbers

TOTAL ACREAGE = 113,720

WEST

Top 25 Growers

1995 Rank	1994 Acreage	Company/ year founded	HQ State	No. US Locations	Major Crop
1	29,417	Tanimura and Antle (1982)	CA	3	lettuce, broccoli, cauliflower, mixed greens, celery, cabbage
2	20,890	D'Arrigo Bros. Co. of California Inc. (1923)	CA	5	lettuce, broccoli, cauliflower, anise, onions, celery, spinach
3	20,330	Bruce Church, Inc. '30	ca	3	lettuce, cauliflower, broccoli
4	16,050	Boskovich Farms, Inc. (1915)	CA	4	lettuce, onions, spinach, radishes, broccoli, celery, asparagus, cauliflower, mixed veg, strawberries
5	15,500	Blaine Larsen Farm '69	ID	1	potatoes
6	15,500	Mike Yurosek & Son L.P. (1939)	CA	1	carrots
7	15,040	Grimmway Farms (1970)	CA	5	carrots, beans, peppers
8	14,350	Rio Farms (1970)	CA	3	lettuce, cauliflower, celery, broccoli, onions, peppers, tomatoes, carrots, melons
9	13,098	Sea Mist Farms ((1939)	CA	2	artichokes, broccoli, lettuce, cauliflower, celery, spinach, anise
10	13,000	Agrinorth (1969)	WA	2	corn, onions, potatoes
11	12,898	Merrill Farms (1933)	CA	3	lettuce, broccoli, asparagus, mixed veg, cauliflower, celery
12	12,800	Nunes Vegetables Inc. (1976)	CA	2	lettuce, cauliflower, celery, broccoli, cauliflower, celery
13	11,565	P.J. Taggares Co. (1947)	WA	6	potatoes, corn, onions
14	10,300	Dresick Farms Inc. (1974)	CA	1	lettuce, melons, tomatoes, garlic, onions
15	8,145	Tom Bengard Ranch, Inc (1974)	CA	1	broccoli, lettuce, cauliflower, spinach, cabbage, potatoes, celery
16	7,348	Teixeira Farms Inc. (1970)	CA	2	lettuce, broccoli, cauliflower, cabbage, celery, squash
17	7,082	Betteravia Farms (1938)	CA	1	cauliflower, broccoli, lettuce, mix veg, beans
18	6,820	Royal Packing Co. (1948)	CA	3	lettuce, cauliflower, broccoli
19	6,700	Harris Farms (1937)	CA	1	tomatoes, melons, lettuce, garlic, asparagus, onions, peppers
20	6,162	Walker Produce Co. Inc. (1964)	ID	1	potatoes
21	6,161	Agri-Empire Corp. (1945)	CA	3	potatoes
22	5,674	Higashi Farms Inc. (1950)	CA	2	lettuce, broccoli, onions, cauliflower, celery
23	5,000	WAOA Farms, Inc.	ID	1	potatoes
24	4,892	Lonoak Farms (1988)	CA	1	lettuce, broccoli, cauliflower, lima beans, tomatoes, spinach, onions, celery, peppers, carrots, cabbage, anise
25	4,300	4-M Farms (1984)	CA	4	lettuce, onions, broccoli, spinach, cauliflower, greens

TOTAL ACREAGE = 289,022

Appendix 2 Labor Requirements for Cooperative Product Mix

Labor Required	String-weave Tomatoes	Green Bell Peppers	Halloween Pumpkins
D-J-F	0	0	0
M-A-MAY 15	25	7	7
MAY 16-31	30	20	16
JUNE 1-15	36	6	0
JUNE 16-30	36	0	0
JULY 1-15	15	2	0
JULY 16-31	75	2	0
AUGUST 1-15	75	39	0
AUGUST 16-31	75	57	3
SEPT. 1-15	75	45	4
SEPT. 16-30	50	22	125
OCT-NOV	18	0	125
TOTAL	510	200	280

• The labor requirements for specific dates will vary according to planting and harvesting schedules, the above schedule indicates a labor schedule for late August harvesting of tomatoes and peppers and a late October harvest for pumpkins.

MISSION STATEMENT

The principle mission of the Southwest Virginia Vegetable Association is to support Southwest Virginia growers in the production and marketing of horticultural produce which is aimed at increasing family incomes and stimulating economic development in the region. Expanding horticultural production will create a supply of locally grown produce that will be sold to wholesale and retail outlets in Virginia and surrounding states.

Producers, extension agents, and agricultural leaders in Southwest Virginia have recognized the importance of diversifying agricultural production in the region. Southwest Virginia lags behind the state and national averages in most important economic categories. Several studies have forecasted the decline in profitability of the region's traditional agricultural activities of tobacco and cattle. This cooperative effort is designed to offer a complementary agricultural production practice, through the diversification into and expansion of horticultural production, that will allow local producers to increase farm incomes. Increasing family incomes will contribute to the overall economic development of the region.

The specific role of the Association in fulfilling these objectives is through the provision of marketing services to its members. These marketing services will assist local growers in preparing their produce to meet industry standards, thus making them more appealing to both wholesale and retail buyers. The marketing services offered by the Association will be in two forms, the provision of 1) physical and 2) managerial infrastructure.

Physical infrastructure provided by the Association consists of: a warehouse, machinery, and other equipment. The services provided from these structures include: washing, grading, packing, storing, cooling, and transporting member's produce. The physical structures provided by the Association have as an aim to prepare the member's produce in the necessary physical form demanded by produce purchasers and to obtain the highest price for its members.

Managerial services provided by the cooperative refer to organizational and technical assistance provided by key personnel contracted by the board of directors, such as a manager, broker, and horticulturist. The specific objectives of these personnel are to provide organizational assistance, coordinate production efforts, purchase supplies at wholesale prices, gather information on the latest production and post-harvest handling technologies, establish relationships with produce buyers, define quality standards, and bargain on behalf of its members to obtain the highest price for its produce.

The board of directors will set policies and hire personnel which will improve operations and contribute to the region gaining a larger market share as a supplier of fresh horticultural produce in the Virginia and surrounding state area. Policies set by the board will have as an objective to improve the marketing infrastructure, both physical and managerial, which will benefit local producers and assist them in making their produce more attractive and more valuable to local buyers.

The Association will have as a marketing strategy to produce and supply high quality No. 1 grade fresh produce to large wholesalers and large supermarket chain buyers located within a four hour drive of the Gate City headquarters. Within this four hour radius, several supermarket chains have more than a dozen central warehouse which purchases fresh produce and ship it out to its retail locations. There are fourteen major buyers located within this four hour radius that serve over 2,700 retail outlets totaling nearly six billion dollars in food sales.

Funding provided by the Rural Business Cooperative Service, and any other national or state funding obtained in the future, will be used for the overall benefit of the Southwest Virginia region. Maximum benefit is obtained by assisting the maximum number of local producers to increase their agricultural income. Active members will participate in annual meetings to develop goals and set policies that will provide them with the maximum benefit.

Appendix 4 Bylaws

BYLAWS²⁸ *Clinch Mountain Cooperative , INC.*

ARTICLE I - NAME AND OBJECTIVE

Section I - Name

The name of this corporation shall be Clinch Mountain Cooperative, Inc.

Section II - Objective

The purpose of this corporation, herein after called cooperative, shall be to serve the interests of farmers and farm families in Southwest Virginia and upper east Tennessee by purchasing, grading, processing, advertising, and marketing farm produce; by providing education and technical assistance to farmers; by providing equipment and supplies to farmers; by providing processing, grading, packing, and sales space to farmers; and by any other activities intended to support and promote agriculture, rural and family life.

ARTICLE II - MEMBERSHIP

Section I - Eligibility

Qualifications - the corporation shall have two classes of members:

A. Regular Members

Any person, firm, partnership, corporation or association including landlords and tenants and share tenancy who is a grower or shipper of agricultural products and those actively engaged in the plant production industry in a direct manner may become a member of the corporation subject to the approval of the board of directors by agreeing to comply with the by-laws and marketing agreement of the

²⁸ These bylaws were written by a sub-committee of the Southwest Virginia Vegetable Cooperative which has formally adopted the name of Clinch Mountain Cooperative. The author of this research document was just one of the participants of the sub-committee. Other members were: Dick Austin, Charlie Coale, Henry Snodgrass, Mike Cassell, I.E. Horton, and Jack Berry

corporation. Members shall have full voting rights and shall have one and only one vote in any and all questions. Partnerships and corporations shall have one vote by duly authorized representative.

B. Associate Members - any person, firm, partnership, corporation or association interested in the general welfare of the vegetable industry in Virginia may become an associate member of the corporation subject to the approval of the board of directors and by agreeing to comply with the by-laws and marketing agreement of the corporation. Any person representing departments of agriculture, universities, extension service involved in production or marketing research or assistance or in any other way attempting to aid growers, shippers or processors of vegetables may become an auxiliary member of the corporation subject to the approval of the board of directors and by agreeing to comply with the by-laws and marketing agreement of the corporation. Associate members shall have no voting rights.

All applications for membership must be approved by the board of directors.

Membership status is effective as of the time the board approves the application for membership.

Section II - Good Standing of Members

Any regular or associate member shall be in good standing when his dues shall have been paid in full, have otherwise fully complied with the cooperative's articles and by-laws, and meets such other uniform conditions as may be prescribed by the board of directors.

Section III - Membership Resignation or Termination

Any member may withdraw from the cooperative by submitting to the office of the association a resignation in writing. A member shall be deemed to have withdrawn from the association and to have forfeited all rights and privileges upon failure to pay

membership dues within 30 days after the expiration of their respective membership year. The membership year is based on the calendar year. Upon termination of membership in the cooperative, all rights and interest of such member in the cooperative shall cease.

In the event the board of directors of the cooperative shall find, following a hearing, that a member has ceased to be an eligible member due to violations of the articles of incorporation, by-laws, marketing agreements, or any other obligations uniformly enforced by the board of directors, the cooperative may suspend such member's rights as a member and terminate the membership. A suspended or terminated member shall have no rights or privileges on account of any stock held, nor vote or voice in the management or affairs of the cooperative other than the right to participate in accordance with law in case of dissolution.

Section IV - Membership Certificates

Each regular member or associate member shall be issued an initial membership certificate in a form prescribed by the board of directors. It shall remain in effect as long as the member shall qualify as indicated in Section I of Article II, entitled Membership of these by-laws.

ARTICLE III - DUES

The membership dues for each class of membership shall be set or prescribed by the board of directors subject to the approval of the regular members. Dues for regular members and associate members shall be payable annually and due on Jan. 1st of each year.

ARTICLE IV - MEETINGS

Section I - Annual Meetings

The annual meeting of the association shall be held at such time as may be fixed by the board of directors. Notice of the time of each annual meeting shall be mailed to each director, to each individual member and to each associate member at least ten days in advance thereof.

Section II - Special Meeting

Special meetings of the Association may be called by the president or by a majority of the board of directors upon written request to the secretary. Notice of all special meetings shall be sent to each individual member and associate member at least 10 days in advance of each meeting. In case of special meetings, such notice shall state the object of the meeting and the subject or subjects to be considered.

Section III - Voting

Unless otherwise stated in the articles of incorporation, or these by-laws, or required by applicable law, all questions shall be decided by a vote of a majority of the members voting thereon. Voting by proxy is not permitted.

Section IV - Quorums

At annual assembly meetings of the cooperative, a quorum of the board, and 10% of the members of record on the day of notification, shall constitute a quorum.

Section V - Presiding Officer

The president shall preside at all meetings. In his absence the Vice-president shall preside at the meeting. In absence of both President and Vice-president, those officers present shall elect a presiding officer protem from among those present.

ARTICLE V - BOARD OF DIRECTORS

Section I. - Number and Qualification of Directors

The Cooperative shall have a board of directors consisting of not less than 12 nor more than 18 people. The number shall be established at annual meetings; though the number may not be reduced in a manner that forces any Director from the Board prior to the expiration of his/her term.

Section II. - Election of Directors

The directors consisting of the first board of directors shall hold office until the first meeting of the members of the Cooperative. At the first annual meeting, directors shall be elected by the members as follows: one third (1/3), or as nearly maybe, of the directors shall be elected for one year, one third (1/3), or as nearly maybe, of the directors shall be elected for two years, and one third (1/3), or as nearly maybe, of the directors shall be elected for three years. At each annual meeting of the members thereafter directors elected to fill vacancies caused by vacancies and expiration of terms of office shall be elected for terms of three years each.

Section III. - Quorum

The presence of one third (1/3) of the board of directors shall constitute a quorum at any meeting of the board.

Section IV. - Notice of board meetings

Oral or written notice of each meeting of the board of directors shall be given each director by or under the supervision of the secretary of the association not less than five days prior to the time of the meeting, but such notice may be waived by all the directors and appearance at a meeting shall constitute a waiver of notice thereof.

Section V. - Meetings

Regular meetings of the board shall be held at such times and places as the board shall determine. Meetings maybe held by conference call or other electronic means. Special meetings of the board of directors shall be held as determined by the board.

Section VI. - Vacancies

Whenever a vacancy occurs in the board of directors, other than the expiration of a term of office, a nominating committee will be formed to elect a new director to fill the vacancy until the next annual meeting of the members. An objective of the nominating committee will be to ensure that all counties have an adequate representation on the board of directors.

Section VII. - Executive Committee

If need be, the board can empower an executive committee comprised of the cooperative officers to act for the board of directors in the interim between board meetings. All such actions shall be ratified and approved at the next board meeting. The executive committee shall develop and recommend for board approval annual and long range plans and objectives.

Section VIII. - Voting

Unless otherwise stated in the articles of incorporation, or these by-laws, or required by applicable law, all questions shall be decided by a vote of a majority of the directors voting thereon. Voting by proxy is not permitted.

ARTICLE VI - DUTIES OF DIRECTORS

Section I. - General Duties:

It shall be the duty of the Board of Directors to supervise the affairs of the Cooperative and to actively pursue its objectives. It shall adopt rules and regulations for the conduct of its business as it shall deem advisable. It shall carry out the policies of the Cooperative as determined by the members from time to time at regular and specific meetings. It shall be empowered to direct the affairs of the Cooperative, to have charge of the disbursement of its funds, to act as judge of the qualifications of all applications for membership, and to employ and appoint such persons and agents as may be necessary and as funds will permit. The board may require adequate bond of any officer, employee or agent handling funds for the Cooperative.

Section II. - Management of Business:

The board of directors shall have general supervision and control of the business and the affairs of the association and shall make all rules and regulations not inconsistent with law, the articles of incorporation, or by-laws for the management of the business and the guidance of the members, officers, employees, and agents of the cooperative.

Section III. - Employment of Manager:

The Board of Directors shall have power to employ, define duties, fix compensation, and dismiss a manager with or without cause at any time, The board shall authorize the employment of such other employees, agents, and counsel as it from time to time deems necessary or advisable in the interest of the cooperative, The manager shall have charge of the business of the cooperative under the direction of the board of directors.

Section IV. - Bonds and Insurance:

The board of directors shall require the manager and all other officers, agents, and employees charged by the cooperative with responsibility for the custody of any of its

funds or negotiable instruments to give adequate bonds. Such bonds, unless cash security is given, shall be furnished by a responsible bonding company and approved by the board of directors, and the cost thereof shall be paid by the cooperative.

The board shall provide for the adequate insurance of the property of the cooperative, or property which may be in the possession of the cooperative, or stored by it, and not otherwise adequately insured, and, in addition, adequate insurance covering liability for all accidents to all employees and to the public. The board shall also provide for director's liability insurance, protecting the directors from legal liability against unauthorized actions of the cooperative.

Section V. - Accounting System and Audits

The board of directors shall have installed an accounting system which shall be adequate to meet the requirements of the business and shall require proper records to be kept of all business transactions. At least once each year the board of directors shall secure the services of a competent and disinterested public auditor or accountant, who shall make a careful audit of the books and accounts of the cooperative and render a report in writing thereon, which report shall be submitted to the directors and the manager of the cooperative and made available to the members of the cooperative. This report shall include at least a balance sheet showing the true assets and liabilities of the cooperative, and an operating statement for the fiscal period under review.

ARTICLE VII - OFFICERS

Section I - Election of Officers

The board of directors shall meet within two (2) weeks after each annual election and shall elect by ballot a president, vice-president, secretary, and treasurer, each of

whom shall hold office until the election and qualification of a successor, unless removed by death, resignation, or for cause. The president and vice president shall be members of the board of directors. The secretary and treasurer need not be directors or members of the cooperative. Officers shall serve a one year term.

Section II - Duties of the President

The president shall preside at all meetings of the Cooperative and of the board of directors. He shall faithfully execute the orders of the board and of the executive committee and shall perform such other duties as are customarily performed by such officer. He shall appoint with the advice and consent of the responsible vice president, members to standing committees. He shall appoint a nominating committee and may appoint special committees as in his judgment he may deem necessary. He shall preside over the board of directors in the hiring of the cooperative manager and supervise the activities of the manager.

Section III - Duties of the Vice President

The vice-president shall perform the duties of the president in his or her absence and other such duties as assigned by the board of directors.

Section IV - Duties of the Secretary

The secretary shall keep a complete and accurate record of all proceedings of the association and the board of directors and shall have general charge and supervision of the books and records of the association. He shall give all notices required by law and by these by-laws and shall make a full report of all matters and business pertaining to his office to the board as they may require, and to the members at their annual meeting. He shall keep complete membership records. If an executive committee is formed, he shall act as Secretary of the Executive Committee. He shall make all reports required by law

and shall perform such other duties as may be required of him by the association or the board of directors. The secretary shall keep the corporate seal and all books of blank certificates, complete and countersign all certificates issued, and affix the corporate seal to all papers requiring a seal. Upon the election of his successor, the secretary shall turn over to him all books and other property belonging to the association that he may have in his possession.

Section V - Duties of the Treasurer

The treasurer shall propose and provide the board of directors with an annual budget and financial statements. He/she shall receive all money paid to the association and deposit same in the name of the association with depositories designated by the board of directors and shall disperse money only as directed by the board of directors. He shall carefully account for all transactions and make full report of same to the annual meeting or at any time upon the demand of the president or the board of directors, a copy of which report will be filed with the secretary. The treasurer shall furnish bond if required by the board of directors, the expense of same to be paid by the association and his books shall be audited annually by a competent accountant or an adult committee approved by the board. The treasurer shall maintain trade liability insurance coverage for the association and its members.

Section VI - Duties of Manager:

The manager shall perform such duties and shall exercise such authority as the board may from time to time vest in him. Under the general supervision of the board, the manager shall have general charge of the ordinary and usual business operations of the cooperative including purchasing, marketing and handling of all products and supplies handled by the association. He shall render annual and other statements in the form and

in the manner prescribed by the board. He shall employ, supervise, and dismiss any and all employees of the association.

ARTICLE VIII - OPERATION AT COST AND MEMBER'S CAPITAL

Section I - Operation at Cost

The association shall at all times be operated on a cooperative service-at-cost-basis for the mutual benefit of its member patrons.

Section II - Margin Allocation

In order to induce patronage and to assure that this association will operate at a service-for-cost basis in all its transactions with its members, the association is obligated to account on a patronage basis to all member patrons on an annual basis for all amounts received from business conducted with members on a patronage basis, over and above the costs of providing such services, making reasonable additions to reserves, and redeeming capital credits. Such allocation shall be on the basis on the volume (or dollar value) of product marketed through (and/or purchased from) the association.

The association is hereby obligated to pay all such amounts to the patrons in cash or by credits to a capital account of each member patron.

Section III - Per Unit-retains

Each member also agrees to provide capital in such amounts as determined by the board of directors based on physical units of product marketed through the association. Such per-unit retains shall be allocated to the member's capital credit account.

Section IV - Dividends

No dividends shall be paid on any capital credits.

ARTICLE IX - AMENDMENTS

Section I

These by-laws may be amended at any annual general assembly meeting of the cooperative membership upon affirmative vote of 2/3 of the members present. Previous notice of such meeting, including the text of proposed amendments, must be given in writing to each member not less than ten days prior to such meeting.

Section II

ARTICLE X - FISCAL YEAR

The fiscal year of this association shall commence on the first day of January of each year and shall end on the last day of December of the same year.

ARTICLE XI - DISSOLUTION

Upon dissolution, after all debts and liabilities of the association shall have been paid, and all capital furnished through patronage shall have been retired without priority on a pro rata basis, the remaining property and assets of the association shall be distributed among the members and former members in the proportion which the aggregate patronage of each member bears to the total patronage of all such members insofar as practicable, unless otherwise provided by law.

ARTICLE XII - INDEMNIFICATION

The cooperative shall indemnify its officers, directors, employees, and agents to the fullest extent possible under the provisions of the Virginia State Law as it may be amended from time to time.

1) Set Major Business Objective

Identify Alternative Objectives

- maximize number of co-op members
- maximize quantity of produce sold
- maximize profits per person
- obtain maximum growth/expansion of farmers' market
- maximize income for the region (i.e. jobs, salaries, earnings)

Determine Specific Objective

The cooperative possesses two primary objectives which are specified in the Mission Statement. The first objective is to increase family farm incomes in Southwest Virginia. The second objective is to produce a supply of locally grown horticultural produce and make it available to consumers in the state of Virginia and nearby states.

The methodology that will be used to accomplish these two objectives will be to provide Southwest Virginia growers with a marketing infrastructure, technical assistance, education, and marketing expertise designed to help overcome existing barriers to production and marketing of horticultural produce. A physical facility will be constructed with all the essential equipment needed to carry out the post-harvest handling tasks of washing, grading, packing, cooling and transport. Specialized personnel will be hired to carry out the functions of coordinating growers, operating the facility, gathering information, developing new strategies, and developing markets for the locally produced goods. Technical assistance will be provided to the growers to ensure that the production technologies that they follow will allow them to produce a high quality product that can be marketed to large purchasers of fresh horticultural produce.

The existence of a marketing infrastructure, specialized personnel, and technical assistance in production issues should allow Southwest Virginia growers to diversify into and expand horticultural production. The expansion of local production will provide the growers with an additional source of income to compliment their current production efforts and offset declining farm income in other areas. The expanded regional production should also increase the supply of locally produced goods and thus fulfill a niche demanded by local consumers.

2) Product Mix

The product mix refers to the specific crops that will produced by the members and marketed through the cooperative. Due to budget constraints, equipment limitations, and the required large volumes of produce, the cooperative will not be able to sell a wide variety of crops and, therefore, must concentrate on a few specific crops.

The mix of crops chosen for the initial years of the cooperative are string-weave tomatoes, green bell peppers, and Halloween pumpkins. This mix was chosen based on the Phase One market study. These three crops were chosen from among a list of ten final crops that were demanded by purchasing agents, proven agronomically feasible by horticulturists, and accepted by local producers. From among all crops that meet the requirements of purchasers, horticulturists and growers, the combination of tomatoes, peppers and pumpkins have proven to be the best mix based on the financial feasibility study, the market window analysis, and regional experience.

During the initial years of the cooperative the association will be committed to the product mix specified above, but will carry out crop field trials, test marketing, and exploratory market analysis in order to continually evaluate the feasibility and profitability of diversifying the cooperative's product mix.

3) **Marketing strategy**

3.1 Identify Potential Markets

- 1) Local: independent grocers, fruit stands,
- 2) Small wholesalers: Hillsville
- 3) Food processors: out of state
- 4) Packing houses: Bristol, Roanoke
- 5) Supermarket chains: Roanoke, Salem, Charlotte, Charleston, Knoxville, Richmond
- 6) Restaurant Servicers: Roanoke
- 7) Terminal markets: Atlanta, Baltimore, Cincinnati

3.2 Determine Optimal Markets

The market that will allow the cooperative to best meet its goals and objectives is the large supermarket chains. Supermarket chains are the primary retailers of fresh produce in the country and therefore market large volumes of produce. The large volumes of produce required will ensure the participation of a large number of local growers. A larger number of local producers participating in the cooperative will enhance the economic benefits obtained by the region.

Southwest Virginia growers recognize that they can not compete with the larger producing regions of the country in terms of the costs of producing horticultural commodities. The economies of scale, climatic and experience advantages possessed by the large producers allow them to produce a high quality product in very large quantities. The large volumes of product produced by these large growers has given them additional market power because of the ability to supply large retailers during a longer period of time. The advantage that Virginia producers have is in the ability to supply Virginia and nearby states with a locally grown product.

Market analysis has determined that there is a consumer preference for fresher, locally grown produce, but that very little is currently available. The cooperative will take

advantage of this niche for local produce by advertising and creating a greater preference for the cooperative's produce over that of out-of-state produce.

A second good potential market is that of locally based restaurant servicers. Restaurant servicers buy large volumes of produce and repack it and transport smaller shipments to restaurants on a frequent basis. Restaurant servicers have little preference for local brand name recognition, but prefer the better taste that is associated with freshly harvested, vine-ripened produce.

Markets must also be developed for No. 2 produce. Due to the extremely strict quality standards, large volumes of produce will not qualify as top grade No. 1 produce. No. 2 produce is not culls, it simply may be a product that is in good condition, but lacks the demanded uniformity of color, size, shape, or ripeness. The price paid for No. 2 product is generally very low, but given the fact that the produce has been harvested and graded, even two dollars a box can generate substantial profits over the alternative of disposing culls.

The major market for No. 2 produce is the processing market. The cooperative will try to establish relations with local or regional processors interested in purchasing No. 2 produce. The primary focus of the cooperative will be to produce and market large volumes of top quality No. 1 produce. The processing markets will only be pursued in order to generate additional revenue for farmers when their product does not meet No. 1 standards. The cooperative will not guarantee a market for No. 2 produce, and this service should not be considered routine. The cooperative will only pursue markets for No. 2 produce when time, market conditions, and other factors permit management to market this product.

4 Strategic Approach

4.1 Gather Information on Alternative Production and Marketing Scenarios

The objective of this strategic approach is to provide a methodology that will permit the cooperative to maintain informed on industry trends and on the operations of the competition. Due to the mature nature of the fresh produce industry, every box of produce that the cooperative sells will be displacing produce from another source. This very competitive market makes it very important to be aware of industry trends so that the cooperative can make quick adjustments in production and marketing strategies to reflect changing consumer demand. One of the best ways to compete in this competitive market is to be aware of what the competition is doing. In order to out-compete other producers and suppliers of similar products, a thorough understanding of their production techniques, post-harvest handling methods, and marketing strategies will provide an edge to the party that is best informed. The cooperative should take advantage of its specialized personnel to gather information on future trends and work to stay ahead of the competition in meeting changing consumer preference.

The following questions should be used as a guide in gathering information related to future trends, marketing alternatives, production technologies, and monitoring the competition.

- 1) Identify principal purchasers
- 2) Identify potential "other" buyers
- 3) Identify potential markets for No. 2 produce
- 4) Product Differentiation
 - company logo
 - box designs
 - labels
 - packaging extras
 - advertising
- 5) Research new production technologies
 - varieties
 - transplant techniques
 - irrigation
 - chemical inputs
 - farm equipment
 - harvesting machinery

- 6) Research new post-harvest handling technologies
 - cooling facilities
 - transport methods
 - grading lines
 - packing methods
- 7) Research new marketing alternatives
 - advertising
 - product differentiation
 - new markets
 - new products
 - light processing
 - other processing
- 8) Identify Competition
 - California
 - Tennessee
 - North Carolina
 - Kentucky
 - Eastern Shore of Virginia
- 9) Prepare Competitive Profiles
 - Background
 - year organized
 - historic growth
 - annual growth
 - Industry reputation
 - Product Mix
 - Comparable quality
 - Quantity of production
 - Acreage
 - Cost of production data
 - Yields per acre
 - Market window
 - Major markets
 - Where sell No. 2 quality
 - How pay producers
 - Distance from markets
 - Transportation system used
 - Product differentiation used
 - Packaging used
 - Unique products
 - Strengths
 - Weaknesses
- 10) Monitor changing trends
 - per capita vegetable consumption
 - changing prices
 - away-from-home buying

4.2 Determine Specific Strategy

As a marketing strategy the cooperative will produce large volumes of relatively few high quality products for sale to large supermarket chains located in and around the state of Virginia. The cooperative will strive to fill a niche for fresh locally grown produce. Most horticultural commodities currently available in Virginia supermarket outlets are brought in from the major producing regions located outside the State. The cooperative will not try to out-compete these large suppliers, but will offer a locally grown alternative, appealing to the local populations to purchase locally grown, fresh produce.

Supermarket chains and wholesalers who serve supermarkets, will be the major target for the cooperative grown produce. Supermarkets are the leading retailers of fresh produce and generally pay higher prices than small wholesalers, food processors and restaurant servicers. Supermarket chains look for long-term relationships and generally are willing to stay with a reliable suppliers as long as they continue to meet their standards.

Supermarkets also have the advantage of having centrally located warehouses, therefore limiting the number deliveries that must be made. It is more efficient to deal with few buyers, desiring to purchase large quantities, with warehouse located near the production region.

In order to create a demand for this new product and appeal to consumers, a campaign of product differentiation will be launched. The focus of the campaign will be to advertise and let consumers know that the cooperative's products are a fresher, locally grown alternative to traditional out-of-state produce. One form of product differentiation will be through the development of the cooperative name and cooperative logo. The name and logo will be stamped on all boxes containing cooperative produce. Advertisements displaying the cooperative logo will be prepared by the co-op management and shipped out with the product in order to be displayed by the supermarket along side the product.

The goal is to create a demand for Southwest Virginia produce equivalent to that of Idaho potatoes, Maine lobsters, California grapes, and Sunkist oranges.

The broker will be the person responsible for developing and carrying out the marketing strategy. The broker will contact many produce purchasers to establish working relationships, determine their interests and identify market requirements. The broker will then work with the manager in order to assure that the cooperative will be able to meet these market demands. The broker will bargain on behalf of the cooperative to obtain the highest possible price for the members. The broker will also monitor price trends and changes in consumer demand in order to adopt the cooperative's marketing strategy in the future to assure maximum benefits for the members.

5) Determine Strengths, Weaknesses, Opportunities & Threats

Understanding the advantages and disadvantages that the cooperative possesses will allow the board of directors to better plan for the future and make better decisions that lead to accomplishing the organization's overall objectives. Following is a list of strengths that the co-op has to take advantage of and weaknesses that the cooperative must confront when trying to penetrate the fresh produce market.

Strengths

- locally grown (consumer preference)
- transportation advantage
- fresher produce
- large base of potential growers
- public assistance (grant, extension agents)

Weaknesses

- small producers
- coordination and communication difficulties
- lack reputation
- short growing season
- lack experience
- lack experience with migrant labor

Opportunities

- diversify product mix
- organic producer/supplier
- niche markets
- light processing (i.e. precuts, prepackaged, etc.)
- retailing

Threats

- insufficient equity to properly run operation
- lack desired quantities
- inferior quality causes purchasers to loose interest
- inadequate housing for migrant labor
- other migrant labor issues
- failure invest in irrigation
- initial low profits causes producer base to leave
- disputes between growers and management over payments and prices
- disputes between growers
- lack qualified broker, doesn't get top price
- growers renege on marketing contracts

6) Calculate Value/Strength of Each Product

	Tomatoes	Peppers	Pumpkins
- comparative quality	- fresher - shorter shelf life	- better taste - less attractive	- good quality
- cost per acre to grow	\$10,203	\$4,500	\$3,400
- new inputs required	drip irrigation	drip irrigation	none
- profitability (acre)	ave. price: \$ 5,400 high price: \$12,500	ave. price: \$ 1,500 high price: \$ 4,000	ave. price: \$ 1,500 high price: \$ 2,500
- labor demanded (hours per acre)	510 total hrs. max 75 in 1 month	200 total hrs. max 57 1 month	280 hrs. mostly at harvest
- conflicts with other crops	can work around tobacco	can work around tobacco	can work around tobacco
- investment in time required	large investment	medium investment	small investment
- new production technology needed	- irrigation - plastic mulch	- irrigation -	none
- processing equipment required	grader/washer	grader/washer	none
- quantity demanded	large volumes	med. to large volumes	all volumes
- growth potential	high growth potential	med. to high growth potential	medium growth potential
- optimal market window	Aug. 20 - Oct 1	Jul 15-Aug 1	Oct 15-Oct 31
- local processing potential	-repacking -small packages	no	no
- brand recognition potential	yes	yes	yes
- market for No. 2 produce	possibly	yes	no

7) **Develop Strategic Product Approach**

Based on the product mix the cooperative must determine a specific strategy for marketing each of the chosen commodities. Various marketing alternatives exist for each product.

Decisions must be made on varieties to be sold, degree of ripeness, time of year to produce and sell, degree of processing or value-added to apply to product, and the type of packaging to be used.

Following is a list of characteristics that should be determined in order to create a specific product production and marketing strategy.

Tomatoes

- Variety/Type: string-weave, Vine-ripened (Mountain Spring variety)
- Size, Color: large, harvested pink
- Product differentiation: Logo, advertise, labels, signs, boxes
- Market window: harvesting dates ****see Appendix ABC**
- Packaging: 25 # box, crate, cellophane wrapped
- Shipping: full truck,

Green Bell Peppers

- Variety/Type: Green Bells
waxed vs. unwaxed
- Packaging: crates, boxes
- Color: green, red
- Labels: co-op logo, variety
- Shipping: full truck loads

Pumpkins

- Variety/Type: Halloween Pumpkins
- Market window: October 15-31
- Packaging: Field Packed
- Labels: company logo
- Shipping:

8) Set Short, Medium, and Long-term Plans

The cooperative must establish future plans in order to take the steps necessary to reach its future projections.

Task	Responsible	Short-term (1-4 yrs)	Medium (5-10 yrs)	Long-term (11-20 yrs)
Vision Statement	Director			
Set Goals	Director			
- Number of members		20	60	100
- Acreage		100 acres	250 acres	400 acres
Product Mix	Board	3 products	5 products	5 products
Processing	Board	No	light processing	light processing
Market	Broker	1 supermarket chain & local	2 supermarket chains	3 supermarket chains
Headquarters	Director	Rent/simple	Rent/modernize	purchase own
Retailing	Manager	tailgate market	tailgate market	tailgate market
- Number of members	Committee chair	20	35	50

9) Determine and Prioritize Equipment and Personnel Needs

Personnel

- manager
- broker
- accountant
- legal representative
- extension officer(s)
- warehouse workers
 - graders
 - maintenance
 - secretary/receptionist
 - USDA Inspector

Equipment

- warehouse
- grading equipment
- packing equipment
 - supplies: boxes, pallets, crates
- coolers
- waste removal facilities
- offices (repair)
- office supplies
- office equipment
 - furniture
 - telephone system
 - computer
 - fax
 - internet connection
 - improve lighting
- Production equipment
 - plastic layer
 - irrigation
 - sprayer
 - harvester
 - truck
- Sign in front of building
- Fork-lift

10) **Financing**

Based on the long term objectives of the cooperative, a plan must be created for financing the capital needs to meet these objectives. Capital needs depend on such factors as volume of business, extent of physical facilities needed, nature of competition it faces, degree of risk it takes, equipment required, and plans for growth, diversification, and expansion.

Capital needs can be defined as fixed and operating capital. Fixed capital includes money invested in land, buildings and equipment. Operating capital is money needed to keep the cooperative functioning, such as the salaries of employees, utilities, funds to pay growers for product delivered, office supplies, funds to purchase farm supplies, packing boxes and crates, and other supplies.

There are five potential sources of capital:

- 1) per unit charge to members who use cooperative's services,
- 2) per unit retain above the costs of operating the co-op,
- 3) dues and initial membership equity investment,
- 4) sales of cooperative stock (bylaws state non-stock corporation), and
- 5) loans from lending institutions.

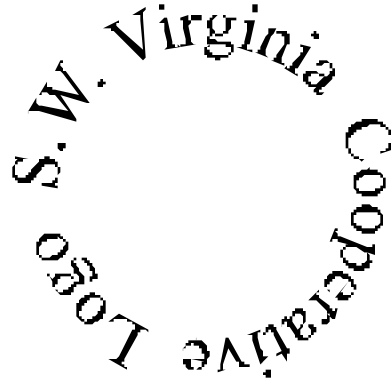
Based on the long term objectives stated in the Business Plan, the cooperative management must forecast future capital needs and determine which combination of the sources listed above will be used to raise the capital.

Based on the annual budget prepared by the treasurer and manager, and the quantity of produce expected to be marketed through the co-op, an "at-cost" charge per unit of product will be determined and discounted from the selling price of the product paid out to the

grower/member. The greater the volume of produce sold through the cooperative, the lower the per unit charge will need to be to meet operating expenses.

Based on future long-term plans outlined in the business plan, an additional per unit retain will be discounted from the amount of the selling price returned to the growers/members. This retain will be used as specified by the business plan and approved by the board of directors. Uses of the retain include depreciation of equipment, purchases of new post-harvest handling equipment, purchase of new building, new office equipment, co-op vehicle, raises in salary, and forming a revolving loan for members. The basic use of this retain is to finance the future modernization, growth and expansion of the cooperative.

MARKETING AGREEMENT



This Agreement, made as of this _____ day of _____, 199____, by and between _____, herein referred to as "producer," and *Clinch Mountain Cooperative, Inc.*, an agricultural cooperative having office at _____ ADDRESS Gate City, Virginia, herein referred to as "Cooperative."

RECITALS

A. *Name of Cooperative Inc.* is an agricultural cooperative organized under the laws of the State of Virginia.

B. Producer is member/ associate member/ non-member, of the Cooperative who produces: Tomatoes/ Green Bell Peppers/ Pumpkins/ Other _____.

C. Producer has paid his/her dues in full, has invested \$_____ into the equity of the Cooperative and possesses a membership certificate. This entitles Producer to all the benefits of membership in the Cooperative as long as Producer complies with the Articles of Incorporation and bylaws of the Cooperative and the provisions of this agreement.

In consideration of the mutual covenants and obligations contained herein, the parties agree as follows:

Section 1. - Sale of Produce:

Producer agrees to plant _____ acres of Tomatoes/ Green Bell Peppers/
Pumpkins/ Other _____, located at _____

Farm address and location

_____ and sell 100%
of the No. 1 quality produce harvested from this acreage directly through the Cooperative.

This agreement is intended by the parties to pass an absolute title of the produce to the Cooperative upon delivery by the Producer to the Cooperative. The product shall be at the risk of the Producer until such time that it has been delivered to the Cooperative Headquarters, graded and entered into the ledger entitled "*Member's Produce Received*." This ledger specifies the quantity received from the grower and will be signed by Producer and Cooperative Manager. Producer is responsible for the cost of transporting product to the cooperative headquarters.

Section 2. - Cooperative Obligations:

Upon receiving the product from the Producer, and both parties having signed the "receipt of shipment," the Cooperative will provide the services of grading, packing, cooling, storing, and marketing of the product. Upon completing the grading and packing process and the final inspection of product, the quantity of product remaining that has passed inspection will be entered into the Manager's "*Members' Produce Received*" ledger, which establishes the legal acceptance of product. Producer has the right to be present at the time of grading or inspection. All decisions or interpretations related to quality standards and volume belong to the Manager, and Producer agrees to accept Manager's grading decisions. If Producer is not

present at time of inspection, he can telephone the Manager to learn the quantity of produce entered into the "*Members' Produce Received*" ledger.

If while in storage at Cooperative, product deteriorates due to being delivered to cooperative in an over-ripe condition or with an unacceptably short shelf-life, to the point where it can not be sold it will be re-graded, and a new quantity will be entered into the "*Members' Produce Received*" ledger. This process can be repeated as many times as need be until the product is sold. Upon sale of the product, by Cooperative to a third party, a final entry will be made in the ledger specifying the final volume of Producer product marketed by Cooperative. The Cooperative is only responsible for paying Producer for the quantity of product it was able to sell, and not for volume of product received. Upon Cooperative selling the product, the Cooperative will pay Producer for the product sold according to the pricing policy and payment schedules specified below.

Cooperative will take all necessary precautions to ensure that deliveries are coordinated with growers and with buyers to minimize time from product harvest to delivery to buyer.

Section 3. - Quality Standards:

Cooperative will only market product that meets predetermined quality standards. Cooperative is responsible to attach as Appendix 1 to this Agreement at the time of signing, specifying quality standards for each of the products it agrees to market. The quality standards will include: size specification, color specification, shape specification, specifications for field-heat removal, ripeness specifications, and other specifications as pertain to each specific commodity. Cooperative will follow USDA standards in setting the product specifications.

Cooperative has no obligation to market No. 2 product that does not meet No. 1 quality standards outlined in Appendix 1 of this Agreement. The location of markets for product that does not meet the established specifications for No. 1 produce is a secondary objective of Cooperative, but Management's focus and priority will be first on marketing the No. 1 product and secondly on marketing No. 2 product.

Section 4. - Production Practices:

Producer agrees to follow all technological production practices specified by Cooperative. Cooperative management will prepare a manual of specified production practices, herein called "production package," and attach it to this Agreement as an Appendix at the time of signing. Production issues that will be specified in the "production package" include: where to purchase transplants, where to purchase seeds, variety to be planted, irrigation schedules and specifications, chemical application specifications, planting dates, harvesting procedures, and any other requirements and methods that Cooperative's horticultural representatives deem important for meeting specified quality standards.

Producer will irrigate his/her crop according to the specifications laid-out in the "production package." Failure by Producer to irrigate, or follow specifications in the "production package" will nullify this Agreement and remove Cooperative's obligation to accept the specified product at its headquarters.

Section 5. - Producer Inputs:

Cooperative may stipulate in the "production package" that Producer purchase specific inputs (i.e. seeds, fertilizer, pesticides, etc.) from Cooperative. Upon signing the Marketing Agreement, Producer agrees to purchase the designated inputs at-cost in the quantities that correspond to the acreage committed for sale to Cooperative as defined in this Agreement. Cooperative may require Producer to purchase from Cooperative when Cooperative can achieve a cost savings for Producer by purchasing such inputs in large quantities. Producer agrees to pay for all inputs ordered, on or before the day Producer receives them. Producer must pay all costs of transporting inputs from Cooperative location to Producer farm.

Section 6 - Communication Obligations:

Upon planting the crop, Producer will once every thirty (30) days call the cooperative Manager, and report on the progress of his/her crop. This 30 day Progress Report will include: description of physical quality of product, report of problems, estimate of expected yield, estimate of harvest date, and request for technical assistance if needed.

At least ten (10) days before harvest, Producer will notify Manager of expected harvest date. Two days before delivery, Producer will make the "final notification" and confirm final delivery date and time with cooperative Manager. Any changes in date or time following the "final notification" must be made by Producer as early as possible. Any additional costs incurred by Cooperative due to failure of Producer to comply with "final notification" dates and times will be deducted from Producer's payment. Management must notify Producer upon receiving the product that an additional expense has been incurred and will be deducted from Producer's payment.

Section 7 - Payment to Producer:

The Cooperative may at any time pool any or all product of Producers with any other Producer's product of a similar kind and grade. All Product received at the Cooperative between Monday morning (at beginning of office hours) and the following Sunday night (end of office hours) will be pooled. Producer shall receive for its product, a unit price equal to the average net unit price obtained for the pooled product during the designated pooling week, less deductions authorized in Section 10 of this Agreement.

Cooperative shall pay the amount due Producer, less deductions authorized in Section 10 of this Agreement, not more than 40 days after delivery of product to Cooperative or Cooperative's prescribed buying location.

or

When in judgment of the Manager and approved by Treasurer, Cooperative has sufficient equity and savings, Cooperative may make an advance payment to Producer of 60% of the current market price (or some other percentage as deemed acceptable by the Manager) in the area for product of like kind, grade, and quality not more than 10 days after delivery of product to Cooperative or Cooperative's prescribed buying location. From the remaining 40%, Cooperative's costs of operation and equity retain, as specified by Board of Directors, will be deducted with the remaining amount being paid to Producer in a period not to exceed 40 days.

Section 8. - Delivery:

All product shall be delivered by Producer at Producer's expense at the earliest reasonable time after harvesting, or at such time as called for by Cooperative following the regulations on Producer communications stipulated in Section 5 of this Agreement. Producer shall deliver product to Cooperative's principle place of business or to one of Cooperative's authorized buying locations as prescribed by Cooperative. The Cooperative will use its best efforts to locate buying conditions within a reasonable distance from Producer's farm.

Section 9. - Inspection and Grading:

Prior to acceptance by Cooperative, all product shall be inspected and graded according to quality standards and specifications established in Appendix 1 of this Agreement and according to USDA standard rules and regulations. Producer has the right to be present at the time of grading or inspection. All decisions or interpretations related to quality standards and volume belong to the Manager, and Producer agrees to accept Manager's grading decisions. If Producer is not present at time of inspection, he can telephone the Manager to learn the quantity of produce entered into the "*Members' Produce Received*" ledger.

If product deteriorates (due to failure to meet established shelf-life standards) to the point where it can not be sold while in storage and under the possession of Cooperative, it will

be re-graded, and a new quantity will be entered into the "*Members' Produce Received*" ledger. This process can be repeated as many times as need be until the product is sold. Upon sale of the product by Cooperative to a third party, a final entry will be made in the ledger specifying the final volume of Producer product marketed by Cooperative. The Cooperative is only responsible for paying Producer for the quantity of product it was able to sell, and not for volume of product received.

Section 10 - Deductions:

Cooperative agrees to market product for Producer as set forth in section 1 and to pay Producer on a per unit basis according to pooled pricing method set forth in section 7. the amount obtained less the following deductions authorized by Producer:

a) An amount to be determined annually by the board of directors, in the sole discretion of the board, to meet the general contingencies of the business of the Cooperative including salaries and operating expenses.

b) A \$_____ per _____ (unit) capital retain deduction by the Cooperative on the purchase price of each unit of product marketed for Producer. The capital retain may be used to purchase new equipment, hire new personnel, conduct research and development, returned to Producer, or for any other expenses that promote the long-term operation of the Cooperative, as determined annually by the board of directors, in the sole discretion of the board.

Section 11 - Liquidated Damages:

The remedy at law would be inadequate and it would be impracticable and difficult to determine the actual damages to the Cooperative should the Producer fail to deliver the product covered by this Agreement. Therefore, regardless of the cause of such failure, Producer agrees

to pay to the Cooperative for all such product delivered or disposed of by Producer, other than in accordance with the terms of this Agreement, a sum equal to 50% of the fair market value of the product at the close of business on the day the product should have been delivered to the Cooperative, as liquidated damages for the breach of this agreement.

All parties agree that this agreement is one of a series dependent for its true value on the adherence of all the contracting parties to all of the agreements, but the cancellation of any other similar agreement or the failure of any of the parties thereto to comply therewith shall not affect the validity of this agreement.

Failure to deliver the product committed herein due to ACTS OF GOD shall not constitute a breach of this agreement.

Section 12 - Specific Performance:

Producer agrees that in the event of a breach or threatened breach by Producer of any provisions of this marketing agreement regarding delivery of product, the Cooperative shall be entitled to a preliminary restraining order and an injunction to prevent breach or further breach hereof and to a decree of specific performance hereof. The parties agree that this is a contract for the purchase and sale of personal property under special circumstances and conditions and that the Cooperative may, but shall not be obligated to, go into the open markets and buy product to replace any Producer may fail to deliver.

Section 13. - Legal Costs and Expenses:

If the Cooperative brings any action whatsoever by reason of a breach or threatened breach of this agreement, Producer shall pay to the Cooperative all court costs, costs for bonds, travel expenses and all other expenses arising out of or caused by the litigation, including reasonable attorney's fees expended or incurred by Cooperative in such proceedings, and all such costs and expenses shall be included in the judgment.

Section 14 - Termination and Renewal:

After all agreements of this marketing agreement have been completed, concluding with the final payment of Cooperative to Producer for product accepted, this marketing agreement is terminated. It is mutually agreed that each proceeding year a new marketing agreement must be signed by both parties to renew contractual obligations.

Section 15. - No Contrary Agreements:

Producer warrants that producer has not contracted to sell, market, consign or deliver and will not contract to sell, market consign or deliver any of product named under this agreement, during the term of this agreement to any person, firm or corporation, contrary to this agreement. Producer may grow additional acreage of similar product to be marketed independently outside the Cooperative, when these additional contractual agreements do not interfere with Producer's ability to comply with this agreement and supply the Cooperative with quantity of product specified in Section 1 of this Agreement.

Section 16. - Forfeiture of Membership:

Violation of this agreement in any material respect by Producer shall be grounds for the Board of Directors to terminate Producer's membership in the Cooperative.

Section 17. - Assignment:

This agreement may be assigned by the Cooperative in its sole discretion. Producer may assign this agreement, but only upon written authorization granted by the board of directors of the Cooperative.

Section 18. - Entire Agreement:

It is agreed that the articles of incorporation, and the by-laws of the Cooperative, now and hereafter in effect, and this marketing agreement constitute the entire agreement between

Cooperative and Producer, and that there are no oral or other conditions, promises, covenants, representations, or inducements in addition to, or at variance with, any terms of this agreement.

Section 19. - Governing Law

This agreement shall be governed by the laws of the State of Virginia.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day, month, year above written:

Producer

Clinch Mountain Cooperative, Inc.

By _____
President

Attest:

Secretary

Appendix 1. To Marketing Agreement

Quality Standards

***this is an example

Tomatoes

- Variety: Mountain Spring
- Kind: String-weave Vine-ripened
- Color: dark red
- Size: extra large
- shape: uniform and round
- harvest: when pink: USDA color specified
- Post harvest handling:
 - do not leave in sun
 - remove as much field heat as possible
- Other Specs: leave on green stems
- delivery: must be within 24 hours after start of harvest
- USDA Classification:
- Discolorations: less than 1 sq. inch of non red blotches on fruit

Green Bell Peppers:

- Variety: Irrigated high-density Bell
- Kind: Bell
- Color: Dark Green
- Size: *** Specific specifications must be determined based on further contractual agreements with produce purchasing agents*
- shape:
- harvest:
- Post harvest handling:
- Other Specs:
- delivery: must be within 24 hours after start of harvest
- USDA Classification:
- Discolorations: less than 1 sq. inch of non green blotches on fruit

Halloween Pumpkins:

*** Specific details are currently be worked out as to specific characteristics desired by the produce purchasing agents.*

- Variety: " _____ "
- Kind: Halloween
- Color: orange _____
- Size: specify diameter
- Weight: specify min. weight
- Shape: uniform and round
- Stem: leave on, min. 3 inch
- Discolorations: less than 10 sq. inch of non orange blotches on fruit
- Harvest: during four week optimum window
- Post harvest handling:
 - store in cool area
 - keep out of sun
 - wash
- Other Specs: _____
- delivery: must be within 72 hours of harvesting
- USDA Classification: _____

Appendix 2. To Marketing Agreement

Production Package

Example

- Planting Dates: - between April 1 and April 19, 1998
- Harvest dates: - between August 22 and September 15, 1998
- Preparation of land: -
- Herbicide kind: - brand names " _____ "
- Herbicide use: - " application specifications"
- Rotations: - not after tobacco, peppers, etc. / good after corn, beans, etc.
- Transplants: - Co-op will purchase in bulk for members, XX needed per acre
- Planting depth:
- Spacing between rows:
- Fertilizer: - Co-op will purchase " name " in bulk for members
- Pesticides: - need to buy XX quantities of brands "Brand #1" or "Brand #2".
- Pesticide use: - apply every XX days, following rains, when flowering, etc.
- Irrigation: - Drip irrigation with plastic mulch
- irrigation requirements:- when soil humidity falls below XX
- Weeding: - dates, times
- Pruning: - dates, times, technique
- Harvesting: - special instructions
- Other requirements:

** This production package is intended to give an idea to the type of detail that is needed. A more detailed, region specific technology must be prepared by horticultural experts.

Appendix 7
Job Descriptions for all Personnel that Addresses all Identified Tasks

The Role of the Board of Directors

The board of directors is elected to represent the members in decisions relevant to the operation of the cooperative. The Board sets policies and establishes specific goals for the cooperative to aim for. The role of the Board is to understand the needs of the members, establish policies, and make decisions that will help members obtain the goals of the Cooperative.

The production and marketing of horticultural goods involves a number of complex tasks. The board of directors should be elected so that professionals from all aspects of the production and marketing process are represented on the Board. Specific professional expertise that should be considered include: producers, business managers, credit specialists, farm machinery representatives, post-harvest handling experts, horticulturists, and marketing specialists, as well as growers. Ensuring a diversity of directors with varying professional expertise will allow the Board to make optimal decisions at all points along the production and marketing process.

The board will write the cooperative by-laws which will be the legal documentation that governs the operation of the cooperative. The by-laws should reflect the overall mission of the cooperative and represent the needs and desires of its members. The by-laws will specify the number of directors, term limits for directors, eligibility requirements, and duties of the elected directors. The board will meet periodically with the manager (usually monthly) to review the progress of the cooperative, plan for future events, make decisions that affect the daily operations of the cooperative, and attend to any special needs as they arise

The Board of Directors will elect amongst itself, special committees designed to address specific tasks during the time between board meetings. Some of the special committees that may need to be created include: by-laws committee, business plan committee, marketing strategy committee, finance committee, budget committee, audit committee, and purchasing committee. The Board will elect amongst itself directors to serve as President, Vice-president, Secretary and Treasurer. Each of these will have specific functions pertaining to the operation of the cooperative.

Specific functions of the Board includes hiring a manager who will oversee the day to day operations of the cooperative. The manager will carry out specific tasks developed by the Board that will lead to achieving the goals and objectives established by the Board. The Board is responsible for protecting the financial investment of its members. This protection can best be assured by annual audits. The directors have the responsibility of contracting an independent auditor to review the cooperative's books and report back to the board. The Board is also responsible for equitably distributing benefits among the members. This distributional process will be outlined in the by-laws and will provide returns to the co-op members based on the specific criteria established by the Board. Most frequently members are rewarded based on their use of the co-op or the quantity of produce that they provide to the cooperative.

The Board also acts as the central decision making body of the cooperative. The Board must make decisions that reflect the objective stated in the by-laws and the changing needs and desires of its members. The Board also has the responsibility of communicating with the members to learn of their desires, and to report to the members at the annual assembly the progress and future of the cooperative.

Specific duties of the Board include:

- elect officers (president, vice-president, secretary, treasurer)
- write by-laws
- amend by-laws
- develop mission statement
- develop short, medium, and long-term goals and objectives
- develop business plan
- create special task committees as needed
- develop marketing strategy
- develop annual budgets
- develop marketing agreement
- create policies that represent the needs and desires of the members
- hire a manager
- oversee operations of the manager
- approve purchases of cooperative
- meet with board and manager monthly
- meet with all members at annual assembly
- prepare annual report for annual assembly
- hire independent auditor for yearly audit
- present results of yearly audit to members
- obtain all necessary bonds and insurance
- set membership policies
- approve membership of each individual member
- develop job descriptions for employees
- establish pricing policies
- establish payment policies
- ensure quality standards are known and understood by all parties
- oversee financial aspects of cooperative
- assure fair distribution of earnings
- make sure members know their responsibilities
- carry out self evaluations
- know taxation laws and pay taxes
- hire and supervise attorney
- install internal controls for handling money

Chairman of the Board [Co-op President]

- write initial vision statement
- govern co-op/decide how co-op resources are allocated
- represent members/ meet and talk with members to learn needs
- attend all board meetings
- originate and approve policies
- make sure co-op conducts business according to bylaws and articles of Incorporation.
- contract manager-set salary
- outline duties and job description of manager
- set sound policies to guide manager
- review progress of cooperative regularly
- with manager set short and long term plans
- review and approve manager's proposed operating budget
- evaluates annually manager's performance
- determines pricing policies and income distribution
- determines reinvestment policy
- understand financial statements, approve financial matters

- require and review monthly financial reports and operating statements
- employ qualified auditor to audit books and report findings to Board
- work with manager on annual meeting plans
- review insurance annually to make sure co-op is properly covered
- contract local attorney for legal advice
- understand all leases, loans, supply and marketing contracts
- facilitate Board decision making process and support majority decisions
- evaluate all aspects of co-op and look for ways to improve operations
- keep co-op members working together
- directs meetings
- sign all legally binding contracts
- sign membership certificates

Vice-president

- fulfill role of president when president is unavailable
- cooperate with president in all of president's duties
- lead specific committees as needed
- offer advice to president
- lead marketing research committee

Secretary

- record minutes at all meetings
- draft all written documentation
- sign membership certificates
- maintain communications with members
- maintain data base on member's contributions, sales, earnings, etc.
-

Treasurer

- set up co-op accounting system
- select bank and open checking account
- establish line of operating credit
- collect membership dues
- record member's equity in co-op
- authorize manager or others to sign checks and make deposits
- approve major expenditures
- keep co-op financial records
- prepare financial statements for board decisions
- prepare year end financial report
- work with auditor on annual audits
- install internal controls for handling money

The Role of the Manager

The general responsibility of the manager is to execute the business plan and policies established by the Board of directors. The manager oversees the daily operations of the

cooperative and fulfills the role of coordinator between members, extension, board of directors, broker, employees, and produce buyers.

The manager's principle tasks include: supervision, planning, designing budgets, monitoring daily earnings and expenses, coordination, organization, and ensuring the cooperative's goals and objectives are being met. The key role of the manager is one of central coordinator. The manager must assist the board in developing short and long term plans and make sure that all members, employees, extension agents, and directors are working to meet these plans.

As central coordinator, the manager must ensure good communications and the flow of information to all participating members of the cooperative. Communications involve working with the broker and members to establish quality standards for the produce. Communication involves working with extension and the members to determine the best production practices. Communication involves working with the members and employees to determine quantities of produce, delivery dates, and payment schedules. Communication also involves making sure that all parties are aware of the policies set by the board of directors and that they are taking the steps necessary to abide by these policies and meet short and long-term goals.

Specific Duties of the Manager:

- implement and carry out policies established by Board
- obtain state operating license and permits
- install internal controls for handling money
- hire, manage, supervise market personnel
- develop job descriptions for employees
- provide training for employees
- provide informational programs for members
- prepare yearly operating budget
- assist directors in developing overall goals and objectives
- with director set short and long term plans
- work with treasurer to make financial projections
- work with secretary to establish member contribution data base
- receive produce at farmers' market
- oversee grading, packing, cooling storage of produce
- quality control of outgoing produce
- accounting of produce entering & leaving facility

- payment to farmers
- purchases of equipment
- purchase supplies for growers (i.e. seeds, transplants, etc.)
- pay all warehouse expenses (i.e. utilities, employees, etc.)
- coordinate with broker and ensure market requirements are met
- work with extension to prepare production "package"
- coordinate and communicate with growers
- coordinate planting, harvesting dates with growers
- arrange transport to buyer's delivery point
- ensure growers sign marketing agreements
- coordinate deliveries of supplies to growers
- assist growers in obtaining, managing, and housing migrant laborers
- work with director on annual meeting plans
- report to members on operating results for year

The Role of the Broker

The broker serves as the direct link between the cooperative and the produce purchasers. The role of the broker is to establish relationships with buyers, evaluate alternative marketing opportunities, determine quality standards and post-harvest handling requirements, and obtain the best price for the members.

The broker works closely with the manager to make sure that the producers are implementing the correct technologies to produce a product that meets industry standards. The Broker must also determine the grading, packing, cooling, and delivery requirements, and work with the manager to ensure that the produce is being prepared according to industry specifications.

The major function of the Broker is to find produce purchasers that desire long-term relationships, pay a competitive price for locally produced goods, are located near the co-op headquarters, and are interested in long-term relationships with the co-op.

Specific duties of the Broker

- establish relations with produce purchasers
- find markets for co-op produce
- determine market standards and requirements
 - volumes
 - varieties
 - size
 - colors
 - packaging
 - cooling
- identify industry trends
- coordinate deliveries with buyers
- bargain for best price on behalf of growers
- identify latest grading/packaging technologies
- collect payments from produce purchasers
- record and keep daily price data from various sources
- prepare business profiles of competitors
- responsible for advertising brand name
- responsible for test marketing produce

The Role of the Members:

The members are the most important component of the cooperative. Members are the owners of the cooperative. Ownership depends on the amount that the cooperative is used. The cooperative has been established to meet the needs of the members, therefore, the members must make sure that policies established by the Board and manager reflect their needs.

The members must elect a board of directors, who will serve as their representatives. A high percentage of the Board's directors should be member/producers to ensure that member's needs are being met. Members must participate in the annual assembly where they, elect board members, approve policy decisions, voice their opinions and help set short and long-term goals.

Producers are numerous and geographically disperse. Each member must make a conscience effort to maintain close communications with the manager. The members must initially be approved for membership, pay dues and sign a marketing agreement in order to use the services of the co-op. Each member must agree to abide by the decisions of the democratically elected board of directors and fulfill all the member obligations outlined in the marketing agreement.

The members are the producers of the goods that the cooperative will be marketing. They must produce a high quality product that meets industry standards and the specifications detailed by the broker and manager. Each member must sign the marketing agreement and comply with the regulations set forth in the agreement. Specific member/producer obligations set forth in the marketing agreement include: production technologies, irrigation, plant variety, communication specifications, and delivery specifications. The ability of the members to comply with co-op regulations and produce a top quality product that meets industry standards is the most important function of the cooperative.

Specific duties of the Members/Growers

- be approved for membership
- elect board of directors
- participate in general assemblies and decision making process
- make needs and requirements known to board
- maintain close communications with the manager
- sign marketing agreements
 - specify acreage to sell to co-op
 - specify planting dates
 - specifies delivery and payment schedules
- order supplies from manager
- coordinate migrant labor requests with manager
- follow specified production "package"
- request extension support from manager
- irrigate produce
- produce a high quality product
- keep manager informed of quality
- keep manager informed of quantities
- deliver produce to cooperative
- remove culls from co-op

The Role of Extension

Extension must fulfill the role of providing technical expertise in horticultural production to the members. The extension agent must work with the broker and manager to establish production guidelines. The extension agent is responsible to prepare the production "package" which will outline the specific steps that growers must follow in order produce an acceptable product.

The extension agent will be responsible for all issues related to agricultural production. The agent must be knowledgeable in the production of the specified product mix and visit growers, as needed, to assist in specific technical issues. The extension agent will also serve as coordinator between grower and manager, keeping the manager informed of the quality of produce, and expected harvest dates of the growers visited.

Specific Duties of Extension

- work with manager to develop production "package"
- assist growers with technical issues through communications and on-farm visits
- conduct field trials of experimental varieties and crops
- participate in general assembly
- identify and implement latest technological developments
- serve as informational liaison between manager and grower
- prepare informational brochures and pamphlets related to technical issues

The Role of the Warehouse Secretary

The secretary has the key responsibility of assuring a proper informational flow between directors, manager, members, and extension. The secretary will specifically serve the manager in the day to day operations of the cooperative. The secretary will be responsible for all communications with outsiders and the cooperative such as incoming and outgoing telephone calls, letters, documents, bills, and receipts.

Among the major duties of the secretary are maintaining daily records such as the amount of produced received, graded, and shipped out. The secretary will control the daily ledgers which specify the amount of money owed to members, and the amount of accounts receivable outstanding. A function of the secretary is to perform many of the office tasks such as typing and record keeping thus freeing up the manager to fulfill his many duties. The secretary plays a very important role in ensuring a proper flow of communication between all interested parties.

Specific Duties of the Secretary

- assist manager in daily operations of the co-op
- keep ledgers of incoming product
- keep records of outgoing product
- maintain records of members (membership, addresses, phone, etc.)
- keep records of member's production and delivery dates
- receive communications of co-op and distribute to appropriate party
- dispatch and keep records of outgoing communications
- keep records of bills and expenses
- maintain co-op files
- assist broker in marketing responsibilities.

Appendix 8 Optimal Production Schedules

Year 1 (1998)

	1-May	2-May	3-May	1-May	1-Jun	2-Jun	3-Jun	4-Jun	1-Jul	2-Jul	3-Jul	4-Jul	1-Aug	2-Aug	3-Aug	4-Aug	1-Sep	2-Sep	3-Sep	4-Sep	1-Oct	2-Oct	3-Oct	4-Oct	1-Nov	2-Nov	3-Nov
Peppers																											
Tomatoes																											
Pumpkins																											

Year 2 (1999)

	1-May	2-May	3-May	1-May	1-Jun	2-Jun	3-Jun	4-Jun	1-Jul	2-Jul	3-Jul	4-Jul	1-Aug	2-Aug	3-Aug	4-Aug	1-Sep	2-Sep	3-Sep	4-Sep	1-Oct	2-Oct	3-Oct	4-Oct	1-Nov	2-Nov	3-Nov
Peppers																											
Tomatoes																											
Pumpkins																											

Year 3 (2000)

	1-May	2-May	3-May	1-May	1-Jun	2-Jun	3-Jun	4-Jun	1-Jul	2-Jul	3-Jul	4-Jul	1-Aug	2-Aug	3-Aug	4-Aug	1-Sep	2-Sep	3-Sep	4-Sep	1-Oct	2-Oct	3-Oct	4-Oct	1-Nov	2-Nov	3-Nov
Peppers										20	20	20	20														
Tomatoes															25	25	25	25									
Pumpkins																							10	10			

Year 4 (2001)

	1-May	2-May	3-May	1-May	1-Jun	2-Jun	3-Jun	4-Jun	1-Jul	2-Jul	3-Jul	4-Jul	1-Aug	2-Aug	3-Aug	4-Aug	1-Sep	2-Sep	3-Sep	4-Sep	1-Oct	2-Oct	3-Oct	4-Oct	1-Nov	2-Nov	3-Nov
Peppers										5	20	20	20	20													
Tomatoes																25	25	25	25	10							
Pumpkins																								10	10		

Year 5 (2002)

	1-May	2-May	3-May	1-May	1-Jun	2-Jun	3-Jun	4-Jun	1-Jul	2-Jul	3-Jul	4-Jul	1-Aug	2-Aug	3-Aug	4-Aug	1-Sep	2-Sep	3-Sep	4-Sep	1-Oct	2-Oct	3-Oct	4-Oct	1-Nov	2-Nov	3-Nov
Peppers										10	20	20	20	20													
Tomatoes																25	25	25	25	20							
Pumpkins																									12	13	

* shaded area indicates feasible harvesting dates

** numbers indicate acreage harvested at that particular time

VITA

Paul Trupo was born on February 14, 1962 in Findlay, Ohio. He was raised just outside of Cleveland, Ohio where he attended Padua Franciscan Highschool. In 1985 Paul graduated from the University of Akron with a B.A. in Finance. Upon completing his college career (so he thought), Paul signed up for a two year commitment with the United States Peace Corps. Much to the dismay of his friends and family, this two year commitment grew into a ten year adventure spanning the countries of Costa Rica, Dominican Republic and Bolivia.

While in Bolivia, Paul met his wife Susana Maria Villegas and they were married in 1993. A year later on March 22, this happy family was blessed with the arrival of their greatest joy, their Cochabamba born son Joshua. Shortly thereafter, while canoeing down the Amazon, Pablo decided it was time to return to his Mother Land. Paul decided to broaden his knowledge about international development and returned to the United States to pursue a degree in International Economic Development at Virginia Tech. Paul finished his academic requirements for a M.S. in Agricultural and Applied Economics in June of 1996. While Paul and family are currently seeking employment with an international development organization that will permit them to return to Latin America, he has accepted a short-term position with the Virginia Tech Department of Agricultural and Applied Economics researching the impact of migrant and seasonal farm workers on the Virginia Economy.

Paul S. Trupo