AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

aHD1491
.U6L48
2004

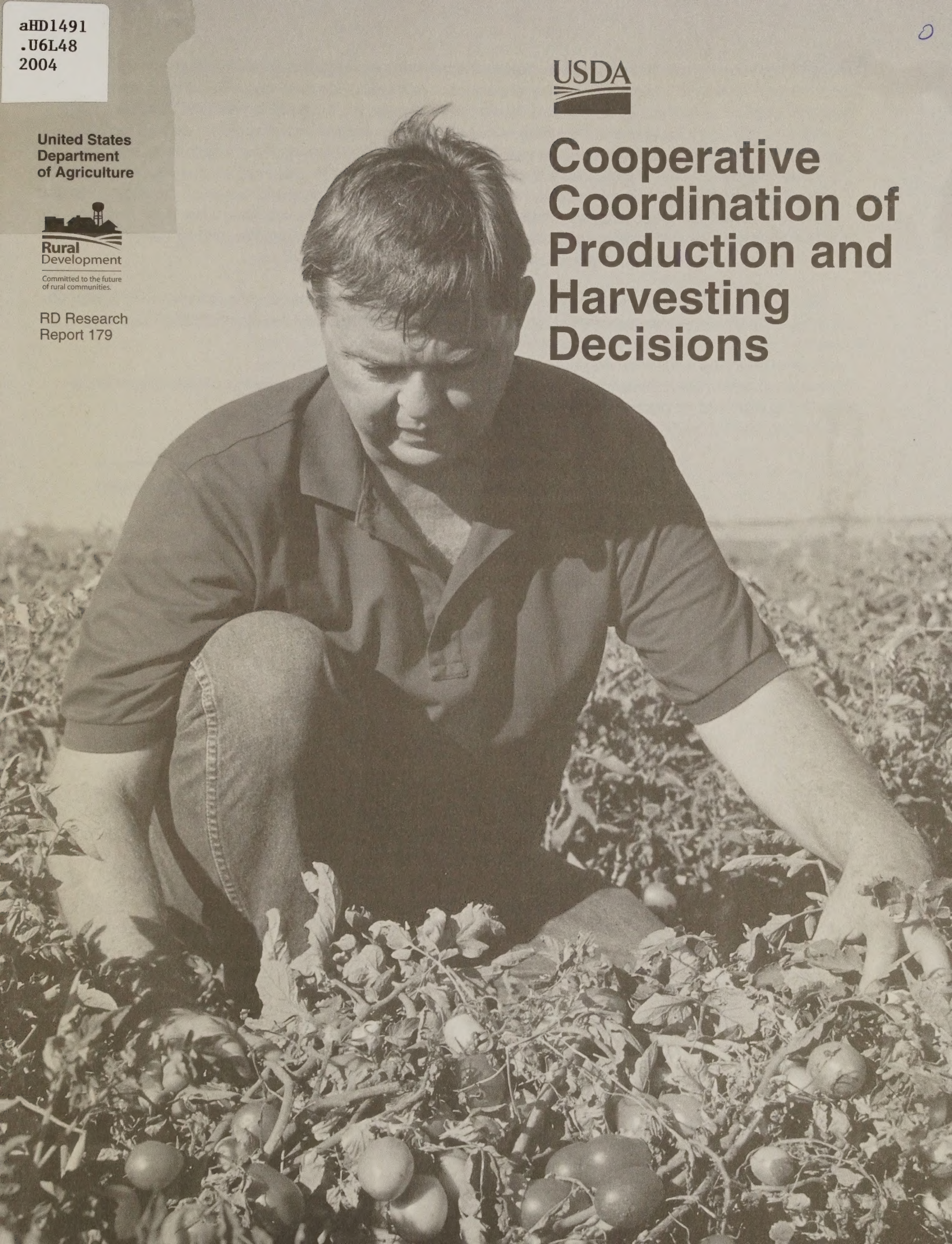
United States
Department
of Agriculture

Rural
Development

Committed to the future
of rural communities.

RD Research
Report 179

Cooperative Coordination of Production and Harvesting Decisions



Abstract

The findings from this report imply that the degree to which cooperatives are involved in the coordination of production and harvesting decisions is less than expected. This study defined coordination as the influence a cooperative has over production practices and harvesting scheduling decisions to match anticipated supply with market demand during a specific period. About 61.8 percent of the respondents said their cooperative practiced some form of coordination. However, when asked about specific areas of coordination, positive responses were notably lower when measuring fruit and vegetable as a total group. The positive responses increased when analyzing the co-ops by types of products handled—fruits and vegetables, and by types of operations—fresh and process markets.

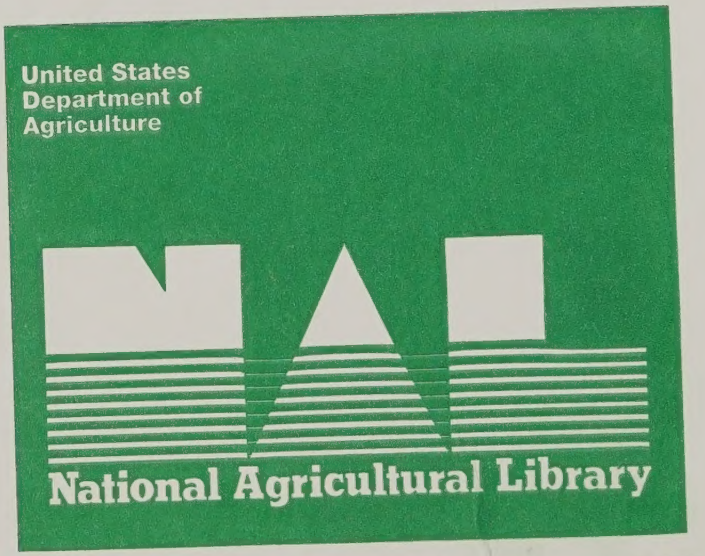
Nearly 30 percent of the cooperatives surveyed said they do not attempt to coordinate producer activities. A majority that practiced some form of coordination said they derived some benefits.

Keywords: Cooperatives, coordination, production, harvesting, marketing, member-growers, communication, benefits.

Cooperative Coordination of Production and Harvesting Decisions

Edgar L. Lewis
Rural Business-Cooperative Service

March 2004



Preface

Coordination of production practices and harvesting decisions from a central source has important implications for the operational efficiency and competitiveness for firms in both fresh and processed fruit and vegetable markets. Many non-cooperative handlers and processors have integrated into production through ownership of supplies or through supply contracts, which give them control over key production and harvesting decisions. In contrast, many cooperatives, maybe due to their democratic nature or various other reasons, can't respond as rapidly to market conditions. Therefore, to improve their competitive position in this changing environment, fruit and vegetable cooperatives may benefit from having more freedom to influence and coordinate the production and harvesting activities of their member-producers.

This is a report from a research survey conducted among U.S. fruit and vegetable cooperatives that sought to determine the extent to which they coordinate production practices and harvesting decisions. This report is also intended to identify the methods used, benefits derived from coordination, and impacts on a cooperative's marketing operation. A review of the literature indicated that little cooperative-specific research has been done in this area. The results of this study should be beneficial to both existing and future produce cooperatives in developing improved marketing operations.

U.S.D.A., NAL
JAN 21 2005
CATALOGING PREP

Contents

U.S.D.A., NAL
JAN 31 1992
CATALOGING PREP

Cooperative Coordination of Production and Harvesting Decisions

Edgar L. Lewis
Rural Business-Cooperative Service

Introduction

Estimates by USDA's Rural Business-Cooperative Service (RBS) indicate there were 220 fruit and vegetable cooperatives operating in the United States in 2001. They market or bargain for their member patrons' production through various structural arrangements. Types of fruit and vegetable cooperatives include those that assemble, pack and market produce, add value through primary and further processing, and act as a bargaining agent on behalf of contract-grower members. Some cooperatives also provide farm management services for members. In all cases, these organizations seek the best possible returns for members' produce moving through marketing channels. One of the important roles cooperatives can play is coordinating supply with market demand.

Grower production units vary in size from relatively small to large acreages. The trend toward consolidation of food processing and distribution firms has increased the disparity in size between these market channel participants and farm production units. As a result, producers continue to seek cooperative organizational opportunities that strengthen their position in the marketplace. This effort is impacted by growth and industrialization within the U.S. food system that has changed the nature of competition within the food marketing system.

Due to the perishability of fruits and vegetables, vertical coordination arrangements have become one of the hallmarks of this industry. This coordination is typified by use of contracts, ownership arrangements and joint marketing partnerships as examples of vertical ties. Rapid growth in consumer demand, value-added processing and export markets has caused investor-owned firms and cooperatives to place greater emphasis on coordinating production and harvesting decisions in response to changes in consumer demand and other marketing conditions.

While cooperatives rely on the production of members for a majority of their produce, some investor-owned firms grow a portion of their own needs and contract with growers for the rest. As a result, many non-cooperative buyers and processors have integrated into production through direct ownership of supply sources or through supply contracts that gives them greater control of key production and harvesting decisions. The net effect is a more closed marketing system and efficiencies gained through closer coordination.

Production functions of cooperatives and investor-owned firms differ in terms of benefit for whom they operate (maximize returns to members vs. maximize profits for investors), but otherwise their marketing functions are much alike. Marketing cooperatives represent a form of horizontal and/or vertical coordination that historically uses coordination tools such as contracts and marketing agreements. However, the extent of coordination of production with harvesting decisions has not been documented.

This study identifies the type and nature of coordination activities employed by fruit and vegetable marketing cooperatives. It also assesses whether fruit and vegetable cooperatives could benefit from a system that employs more influence and/or control of production and harvesting decisions with their member-growers.

Survey Design and Response

RBS collected data from 259 fruit and vegetable cooperatives identified in 1997. Regarding their coop-

erative coordination of production and harvesting decisions, the 144 usable responses represented about 55.6 percent of all fruit and vegetable cooperatives.

Cooperative Characteristics

Marketing fresh fruits and vegetables is different from other agricultural and nonagricultural products. Thousands of individual commodities and varieties are handled. Each product has its particular requirements for production and handling, quality attributes, merchandising methods, and standards of consumer acceptance. Many products are highly perishable and produced far from the final market. Fruits and vegetables are marketed through many firms, including cooperatives. Some co-ops perform only a single function such as storage or transportation. Others provide several functions such as spraying, harvesting, grading, packing, and financing for a full line of fresh products.

The cooperatives studied specialized in fresh or processed fruits and vegetables, and by 2001 had 37,782 members, and net business volume of $8.8 billion (table 1). While the number and membership of these cooperatives have gradually decreased over the past 15 years, the net business volume of those remaining has generally increased. Cooperatives account for about one-quarter of the total sales of fruits and vegetables grown on U.S. farms. Most fruit and vegetable cooperatives are specialized by commodity group.

Distribution by Type—Of the 144 responding, 65.3 percent (94) were identified as fruit cooperatives and 34.7 percent (50) were vegetable cooperatives (figure 1). The identification was based on information regarding commodities handled and the amount of sales they contribute to total revenue. When asked about their primary function, 123 (85.4 percent) were marketing cooperatives, 81 fruit and 42 vegetable. Nineteen (13.2 percent) were primarily bargaining cooperatives, 11 being fruit and eight vegetable cooperatives. Two others were harvesting/storage cooperatives (table 2).

Years in Operation—Additional characteristics of the 144 fruit and vegetable cooperatives are presented in Tables 3-6. Table 3 shows the length of time they have been operating. Six cooperatives (4.2 percent) have been operating less than 1 year while 11 (7.6 percent) have been operating for 81 or more years. The three largest groups in terms of years in operation are 21 (14.6 percent) between 41-50 years, 19 (13.2 percent) between 61-70 years, and 25 (17.4 percent) between 71-80 years.

Producers and Membership—The cooperatives surveyed indicated that 42,691 producers used their services (table 4). The majority, 36,596, were cooperative members, 2,649 associate members, and 3,446 were non-members (table 4).

The number of producer-members of the cooperatives was almost evenly distributed among seven membership size groupings (see table 4). Although 32 (22.2 percent) of the 144 cooperatives reported less than 10 members, another 32 (22.2 percent) had between 75 and 249, while another 25 (17.4 percent) had 250 and more members. As expected, the 250 and more membership grouping had the largest number of member-producers at 29,961 or 81.9 percent.

For associate-members and non-members, the largest concentration of cooperatives was in the "less than 10" group—135 and 113 cooperatives, respectively. However, the largest concentration of members-producers was in the "250 and more group" for both associate members and non-members, with 2,350 and 2,345, respectively.

Size of Current Producers—Forty-nine of the 144 cooperatives surveyed provided information on the average farm size (acreage) of their current producers. As table 5 shows, the average farm size ranged between less than 10 to 1,000 or more acres. Most

Table 1—**General characteristics of fruit and vegetable cooperatives, 1986-2001** [1]

Year	Cooperative	Membership	Net Bus. Vol.
			Dollars
1986	344	60,000	5,106,099
1987	312	64,093	6,113,602
1988	302	51,650	6,604,044
1989	298	53,185	7,888,001
1990	297	52,897	8,241,419
1991	299	61,034	8,170,251
1992	290	51,410	7,591,016
1993	282	50,901	8,370,958
1994	288	50,583	8,433,787
1995	281	49,112	9,271,953
1996	267	46,799	9,391,996
1997	259	43,975	9,837,141
1998	249	43,953	9,268,189
1999	231	40,876	9,285,557
2000	232	41,052	9,569,963
2001	220	37,782	8,822,247

[1] Represent data from RBS data file.

Figure 1—**Type of cooperatives by product**

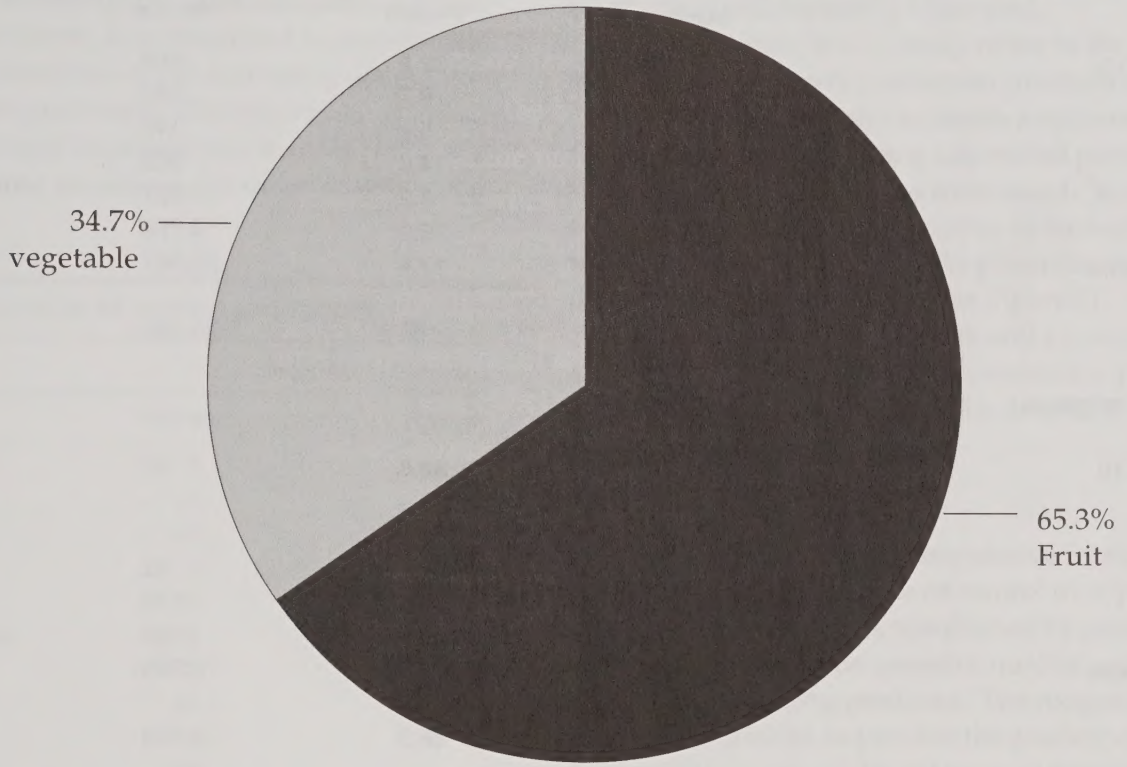


Table 2—**Cooperatives primary functions**

Function	Number	Percent
Marketing:	123	85.4
Fruit	81	65.9
Vegetable	42	34.1
Bargaining:	19	13.2
Fruit	11	57.9
Vegetable	8	42.1
Other [1]:	2	1.4
Total	144	100

[1] Shown as total for confidential purpose.

Table 3—**Length of time cooperative has been in operation**

Time (years)	Cooperative	
	Number	*Percent*
Less than 1	6	4.2
1 - 5	5	3.5
6 - 10	5	3.5
11 - 20	12	8.3
21 - 30	16	11.1
31 - 40	11	7.6
41 - 50	21	14.6
51 - 60	13	9.0
61 - 70	19	13.2
71 - 80	25	17.4
81 and more	11	7.6
Total	144	100

Table 4—**Number of producers using co-op**

Type of member	Cooperatives		Members Producers	
Members	*Number*	*Percent*	*Number*	*Percent*
Less than 10	32	22.2	144	0.4
10 - 14	14	9.7	162	0.4
15 - 24	8	5.6	142	0.4
25 - 49	21	14.6	692	1.9
50 - 74	12	8.3	727	2.0
75 - 249	32	22.2	4,768	13.0
250 and more	25	17.4	29,961	81.9
Total	144	100	36,596	100
Associate members				
Less than 10	135	93.8	42	1.6
10 - 14	-	-	-	-
15 -24- -	-		-	-
25 - 49	1	0.7	42	1.6
50 - 74	2	1.4	115	4.3
75 - 249	1	0.7	100	3.8
250 and more	4	2.8	2,350	88.7
Total	143	99.3	2,649	100
Non-members				
Less than 10	113	78.5	82	2.4
10 - 14	7	4.9	74	2.1
15 - 24	11	7.6	203	5.9
25 - 49	-	-	-	-
50 - 74	6	4.2	349	10.1
75 - 249	3	2.1	396	11.5
250 and more	4	2.8	2,345	68.0
Total	144	100	3,446	100
Total: All Farmers	-	-	42,691	-

cooperatives, 17 (34.7 percent), are in the 25-99.9 acre range, 11 (22.4 percent) are in the 10-24.9 acre range, and 3 have 1,000 or more acres.

Services Provided—The cooperatives offered a wide array of services to their users (members and non-members). Table 6 shows that more than one-half, or 76 (52.8 percent), provide services such as receiving, grading, and shipping, while 56 (38.9 percent) offer financial and other record keeping services. Fifty (34.7 percent) purchase supplies, while 36 (25 percent) limit their activity to buying and selling produce. In addition, 30 (20.8 percent) said they provide "selling only" services and 15 (10.4 percent) provide "bargaining only" services.

Coordination Overview

The survey conducted among U.S. fruit and vegetable cooperatives sought to determine the extent to which they coordinate production practices and harvesting decisions. This research is also intended to identify the methods used, benefits derived from coordination, and impacts on a cooperative's marketing operation.

This report attempts to further identify coordination by types of products handled—how much fruit and vegetable marketing cooperatives coordinate production and harvesting decisions compared with bargaining cooperatives. Also examined is coordination by types of operations—fresh marketing operations compared with processing. The hypothesis established at the beginning of the study was that vegetable marketing operations would require more coordination than fruit tree crops because of the annual production cycle of most vegetable products. Bargaining operations would require less coordination because major emphasis is not marketing orientated.

Coordination in this study refers to the influence a cooperative has over production practices and harvesting decisions in order to match anticipated supply with market demand during a specified period. Cooperative representatives were asked, "does your cooperative coordinate production or harvesting practices"—61.8 percent (89) said they coordinate production and/or harvesting practices (figure 2).

Other sections of this study will examine specific areas of coordination including production practices, harvesting decisions, and benefits derived from coordination.

Table 5—**Average size of current producers**

Acres	Producers	
	Number	*Percent*
Less than 10	7	14.3
10 - 24.9	11	22.4
25 - 99.9	17	34.7
100 - 249.9	6	12.2
250 - 999.9	5	10.2
1000 and more	3	6.1
Total	49	100
No response	95	
Total	144	

Production Coordination

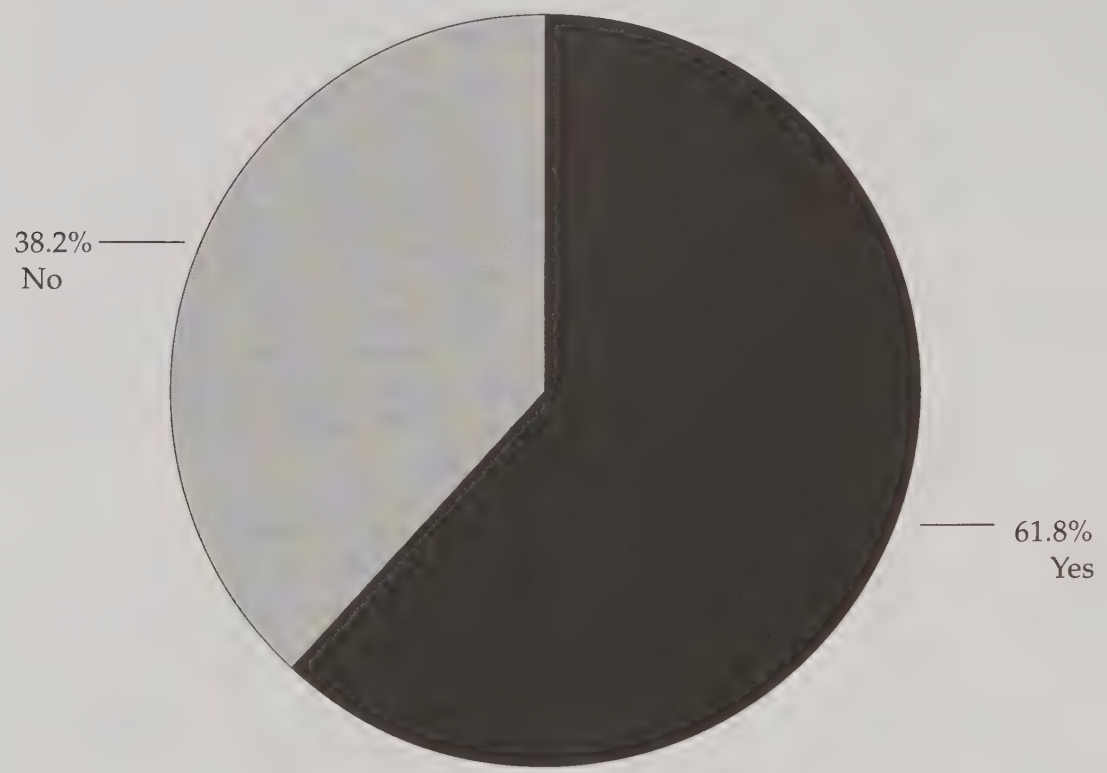
To compete with non-cooperative firms, cooperatives need greater influence or control over production practices. This must be accomplished by gaining influence or control over the quantity, quality, and variety of the products being produced. The cooperative manages these variables to provide the greatest net return to its patron-members. Its enforces standards (for fertilizer, insecticide, pesticide, and other supplies) required to meet final product goals; designs incentive systems (price premiums or penalties) that encourage

Table 6—**Services provided by the cooperatives** [1]

Service		Response
Total surveys (144):	*Number* [2]	*Percent*
Receiving, grading, and shipping produce	76	52.8
Financial and other record keeping	56	38.9
Purchasing supplies	50	34.7
Buying and selling produce	36	25.0
Manufacturing (processing)	33	22.9
Selling only	30	20.8
Selling produce on commission basis	30	20.8
Spraying	11	7.6
Bargaining only [3]	15	10.4
None of the above	1	0.7

[1] Respondents were asked to check all categories that apply
[2] Data will not add to total because respondents were asked to check all that apply.
[3] Some bargaining cooperative repeated involved in other activities.

Figure 2—**Does your cooperative coordinate production and/or harvesting practices?**



using new production practices; delivers member educational programs that introduce and promote changes in production and processing practices; and provides support mechanisms for producers in newly emerging markets.

The method is best captured in its organizational structure—legal documents such as the bylaws, membership agreements, or marketing agreements. These documents generally specify the quantity, quality, variety, and grade of product that member-producers can market through the cooperative.

Production is coordinated formally or informally. One manager said his cooperative's bylaws give member-producers the exclusive right to decide how much to produce and what cultural practices to use. The assumption was that the output of the typical member-producer was small compared with the total output of the cooperative.

This cooperative could only influence the production of members by producer payment. Cooperatives may also exert influence by informal methods, such as asking producers to volunteer to plant a pre-determined number of acres or units of a particular crop based on market window opportunities or a request from a buyer for a specific variety and volume of a product.

In an effective program, producers must often change their supplies, production and/or handling and storage practices to produce improved quantity and quality, and have them available to meet market demand. These changes frequently involve increased risk and new production practices and may add to the cost. Producers need assurance that their efforts will be compensated.

Consequently, a major strategic question facing cooperatives is what type of incentive system to use to stimulate those changes. For example, should it be a price premium or penalty? Strong cooperative leadership will be needed to explain why the changes would likely be required in this situation. As related to production coordination, cooperative representatives were asked if they coordinate production practices to influence quantity, variety and production inputs. The responses are presented in the three sections below.

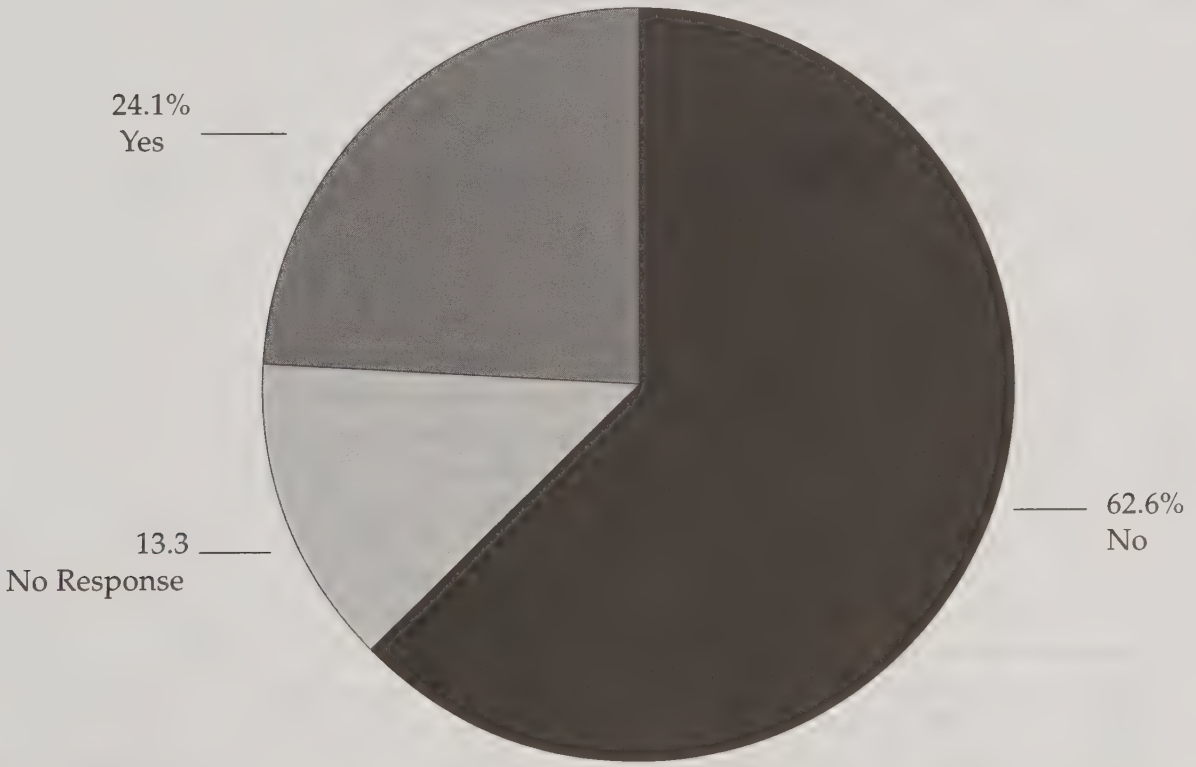
Influence the Quantity—Nearly 44 percent said that they make "no attempt" to influence the quantity of a particular crop produced (table 7). However, those that did influence quantity use a variety of methods.

Table 7—**Methods cooperatives use to influence the quantity of a particular crop produced** [1]

Method	Cooperatives	
Total surveys (144):	*Number* [2]	*Percent*
No attempt	63	43.7
Influence by doing and communicating market analysis	38	26.4
Control by marketing agreement	33	22.9
Influence by suggesting particular planting schedules	28	19.4
Contract for a given acreage/quantity	25	17.4
Influence by pre-season pricing	16	11.1
Influence by promotion and advertising	15	10.4

[1] Data will not add to total because respondents were asked to check all that apply.

Figure 3—**Methods used generally resulted in achieving desired quantity**



Thirty-eight (26.4 percent) conducted and communicated marketing analysis. Another 33 (22.9 percent) control by marketing agreement, and 28 (19.4 percent) influence by suggested planting schedules. Twenty-five (17.4 percent) indicated that the cooperative uses contracts for a given acreage/quantity, 16 (11.1 percent) exert influence by pre-season pricing, and another 15 (10.4 percent) influence by promotion and advertising.

Cooperative representatives were asked if methods used to influence the quantity of a particular crop produced have generally resulted in achieving the

Table 8—**Does cooperative influence or determine the variety of crop planted?**

Answer	Yes	No	Total
		Number	
Influences or determines variety of crop planted	61	83	144
Only accepts certain varieties	30	144	144
Provides advice on varieties	48	96	144
Other influence	3	141	144
		Percent	
Influences or determines variety of crop planted	42.4	57.6	100
Only accept certain varieties	20.8	79.2	100
Provide advice on varieties	33.3	66.7	100
Other influence	2.1	97.9	100

[1] Data will not add to total because respondents were asked to check all that apply.

desired quantity. Figure 3 shows that of the 83 cooperatives that attempted to influence the quantity, 62.6 percent (52) said it didn't achieve the desired result.

Influence Variety—Table 8 shows that less than half (42.4 percent) of the cooperatives influenced or determined the variety of crops planted. Methods varied by cooperative. Twenty-one percent only accept certain varieties. Another 33.3 percent provide advice on varieties.

Survey comments suggest that the decision on what variety of crops to plant also varies by the nature of the particular crop. Other factors were location, market demand, buyers preference, harvesting/processing utilization, and in some cases, producers' preference.

In some areas, climatic or growing conditions limited the number and variety of crops that could be produced. Consequently, the cooperative and members relied on the recommendations from a horticulturist or plant scientist. In many cases, the decision about the variety of crops planted was dictated by the market. Consumers indicate a preference for a particular size, color, or taste through food purchases.

The market also expects a degree of consistency in the supply and quality of products. Additionally, buyers help cooperatives influence or determine the variety of crops planted. Some buyers want certain characteristics in a product such as longer shelf life, shipping quality, package size, or compatibility with transportation modes. Some varieties keep better in storage than others. This information is communicated to the cooperatives and growers to balance supply and demand.

Several processing cooperatives said that being able to influence or determine the variety of crops planted helped improve the efficiency of harvesting and processing. Having some control over when raw products are delivered to the processing facility enables these cooperatives to more effectively manage plant capacity and use.

Cooperative management recognizes that certain crop varieties are better suited for mechanical harvesting, processing, or predicting maturity dates and provide information to growers along those lines. But in the end, growers decide where to put their risk.

Influence Production Supplies—Cooperatives were asked if they influence or control pesticide, insecticide, herbicide, or fertilizer application. The control of production supplies has long been a major problem in the production and distribution of fresh fruits and vegetables.

Surveys by the Food Marketing Institute, Vance Publishing Co., and Kansas State University, among others, show consumers are becoming increasingly concerned about food safety. Their concern extends beyond the occurrence of natural components such as sodium or saturated fats to the presence of pesticide residues, additives, or contaminants.

Fresh fruits and vegetables have come under particular scrutiny because of the chemicals used to control pests—harmful insects, plant diseases, and noxious weeds. The problem is intensifying because new

Table 9—**Cooperative influence or control of pesticide, insecticide, herbicide, or fertilizer application**[1]

Answer	Cooperatives	
Total surveys (144):	*Number* [2]	*Percent*
No influence or control	82	56.9
Co-op provides information on types	38	26.4
Co-op provides information on application method	27	18.8
Co-op limits application practices	15	10.4
Co-op contracts for application	8	5.6
Co-op applies it	6	4.2
Co-op limits brands	4	2.8

[1] Data will not add to total because respondents were asked to check all that apply.

resistant pests and strains are emerging, while the development and testing of new control measures that meet safety standards are becoming more difficult and expensive. Concern is also growing about other effects of chemical pesticide and herbicide use, such as groundwater contamination and hazardous working conditions on farms.

Controlling production supplies is another way cooperatives can coordinate production and harvesting decisions. Table 9 shows that 82 or 56.9 percent of the 144 cooperatives made no attempt to influence the application of various products. However, more than a quarter provided information on the types of supplies and another 27 (18.8 percent) discussed application methods.

The survey information also shows that a smaller number of cooperatives attempt to control or influence use of various products by limiting application practices, contracting for application, having the cooperative apply them, or restricting the brands producers use. Several cooperatives said their influence or control of these crop protectants or fertilizer was good for their business operation. Some buyers (customers) are very concerned about product safety and would prefer doing business with organizations (suppliers) that have production supply management programs.

Cooperative marketers of organic produce said influencing or controlling production supplies such as pesticide, herbicide, and fertilizer is essential to their marketing operation. Several said they require all member-producers to be certified as organic growers and all crops grown under conditions that meet market requirements.

Harvesting Coordination

The orderly flow of produce into the packing shed or marketing facility is very important to the success of a cooperative's marketing plan. The cooperative may provide or manage the harvesting functions or work with member-producers in setting their harvesting schedules. In some cases, and especially with fruit production—tree crops—the local cooperative may provide additional services for producers such as pruning, frost protection, fumigating, and spraying to ensure timely delivery.

Harvesting coordination is more prevalent among fruit cooperatives than vegetable co-ops. Packinghouse management normally decides when fruits will be harvested, often taking charge of harvest operations and arranging to haul fruit from the orchard to packinghouse. Harvest coordination in the vegetable sector is mostly found with crops destined for a processing plant.

Practices Used—Cooperatives surveyed were asked if they determine or influence harvesting decisions for producer-patrons. Cooperatives were asked to check the five responses that apply. Table 10 shows the type of practices they use to influence harvesting decisions.

Fifty-three (36.8 percent) of the respondents said "cooperative calls for given quantities on particular days," 41 (28.5 percent) said "cooperative provides harvesting at its schedule," and 39 (27.1 percent) reported "cooperative limits quantity received on any given day."

Another 31 (21.5 percent) said the "cooperative provides pricing information in an attempt to influence quantity delivered," and 12 (8.3 percent) said

Table 10—**Does your co-op determine or influence harvest schedule?** [1]

Answer	Cooperatives	
Total surveys (144):	*Number*	*Percent*
Co-op calls for given qualities on particular days	53	36.8
Co-op provides harvesting at its schedule	41	28.5
Co-op limits quantity received on any given day	39	27.1
Co-op provides pricing information in an attempt to influence quantity delivered	31	21.5
Co-op provides harvesting at producers schedule	12	8.3

[1] Data will not add to total because respondents were asked to check all that apply.

Table 11—**How does controlling harvesting schedules influence you marketing?** [1]

Answer	Cooperatives	
Total surveys (144):	*Number*	*Percent*
Co-op calls for given qualities on particular days	53	36.8
Provides better facilities utilization	54	37.5
Provides better product to market	50	34.7
Provides better labor control	50	34.7
No control or influence attempted	43	29.9
Reduces member time at plant delivering produce	15	10.4
Other	8	5.6

[1] Data will not add to total because respondents were asked to check all that apply.

"cooperative provides harvesting at producers schedules." Other comments were more specific, such as, providing information on best harvesting timing, prorate delivery during the week, percentile buying, pick when ready, harvest by maturity, and weather condition.

Cooperatives were asked specifically how controlling harvesting schedules influenced their marketing. Forty-three (29.9 percent) said their cooperative does not attempt to control harvesting schedules to influence their marketing (table 11). However, 54 (37.5 percent) said that controlling harvesting schedules "provides better facility utilization," 50 (34.7 percent) said that it "provides better product to market," and another 50 (34.7 percent) said it "provides better labor control." Fifteen (10.4 percent) cooperatives said controlling harvesting schedules influenced their marketing facility operation by reducing member's time at plant delivering produce. Eight (5.6 percent) cooperatives listed "other specified" ways of controlling harvesting schedules influenced by their marketing operation.

They said controlling schedules: (1) protects against price collapse; (2) enables harvesting as customers order; (3) keeps cooperative from having to sell at less than profit; (4) helps in setting prices; (5) spreads risk and benefit uniformly to all producers; (6) enables scheduling harvest to match a specific market window; (7) provides product of desired maturity and condition at time of packing, and (8) eliminates product loss.

Other Influences—When asked if they attempt to control or influence their patrons' production and harvesting decisions in any other ways, 23.6 percent or 34 said they had attempted other ways to control or influence production and harvesting decisions (figure 4), while 67.4 percent (97) said they didn't get involved in patron decisions.

Figure 4—**Does the cooperative attempt to control production or harvesting decisions in any other way?**

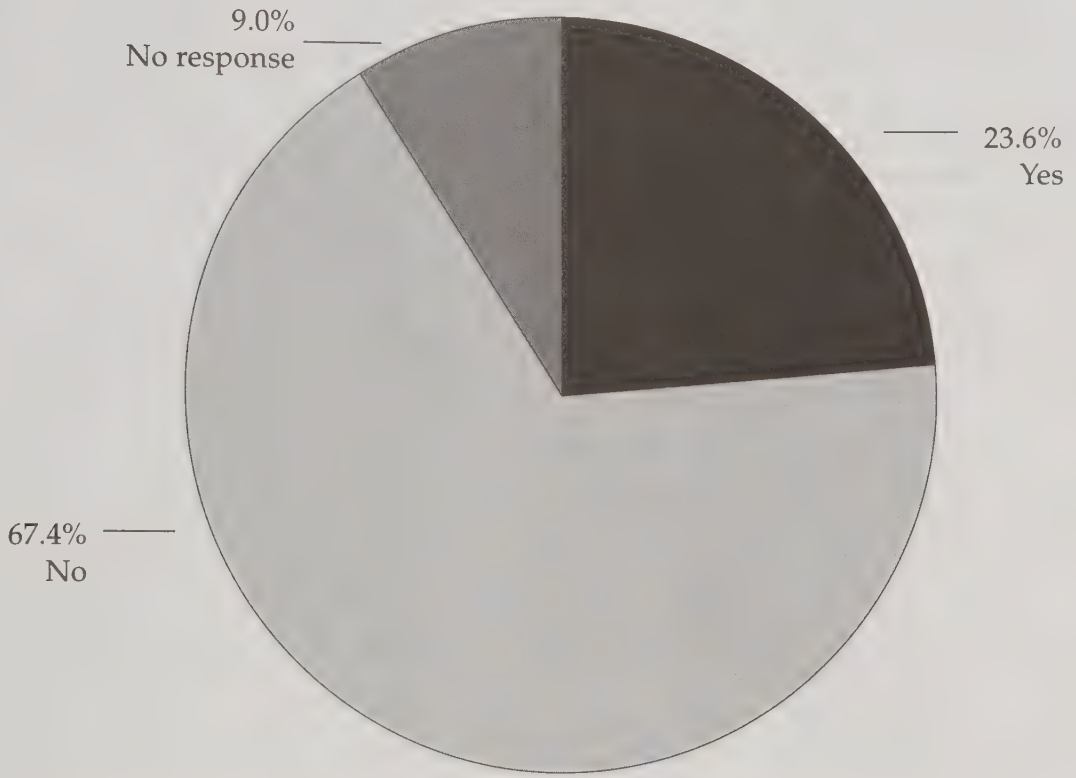
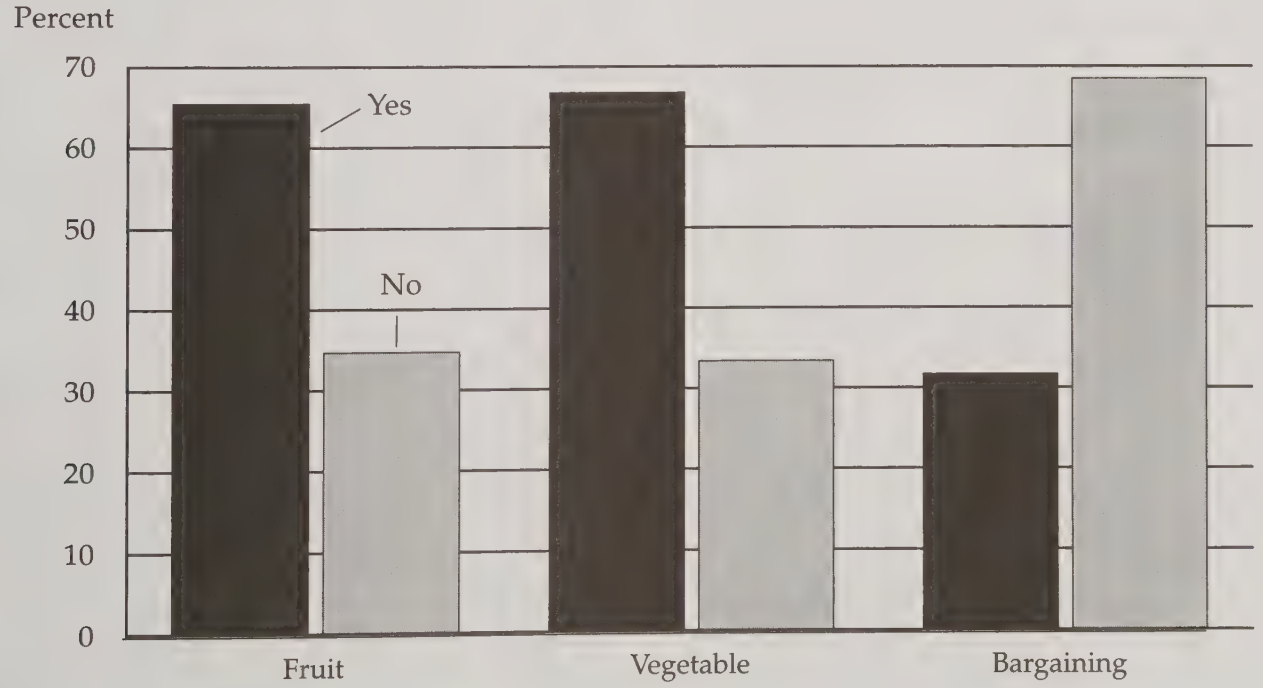


Figure 5—**Cooperative coordinates production and harvesting practice by type of products handled and bargaining activities**



Several respondents mentioned specific ways cooperatives attempted to control or influence production or harvesting decisions, such as specific quality standards, levying dockage for inferior product, and encouraging good control practices. Also mentioned were coordinating with market demand, setting contract pricing and planting, tying harvesting premiums to dates, using newsletters to encourage pruning and trimming, and recommending minimum size to be harvested.

Coordination by Products Handled and Types of Operations

This report attempts to further identify the extent to which fruit and vegetable marketing cooperatives coordinate production practices and harvesting decisions based on products handled and types of operations. Products handled refer to fruits and vegetables while types of operations denote fresh and process markets and bargaining activities.

The analysis of data in this section will examine the degree of coordination of fruit marketing cooperatives compared to vegetable and bargaining cooperatives. The hypothesis established at the beginning of the study was that fruit marketing cooperatives, mainly handling tree crops, would have a higher rate of coordination compared with vegetable row crop and bargaining cooperatives because of their annual production cycle. Also, production quantity and quality is easier to project for fruit prior to the marketing season. In addition to analyzing coordination data for fruit and vegetable marketing cooperatives and bargaining activities, this study also compares the responses of cooperatives that have fresh marketing operations versus processing operations.

Coordination by Products Handled

Data presented below show the degree to which fruit, vegetable, and bargaining marketing cooperatives coordinate production practices and harvesting decisions. As figure 5 shows, 65.4 percent (53) of the fruit marketing cooperatives said they practice some form of production and/or harvesting coordination, while 34.6 percent (28) said they do not coordinate. Of the vegetable marketing cooperatives, 66.7 percent (28) practiced coordination, versus 33.3 percent (14) that did not coordinate.

Based on the initial hypothesis, it was assumed that bargaining cooperatives would have a lower rate of production and or harvesting coordination due to the nature of their operation. Of the bargaining cooperatives, 31.6 percent (6) said they coordinate, while 68.4 percent (13) did not practice coordination. This confirms the hypothesis.

While figure 5 showed the level of production and harvesting coordination for fruit and vegetable marketing cooperatives, figure 6 shows the level of coordination when asked specifically about production coordination. The response was that 49.4 percent of the fruit cooperatives surveyed said they coordinate production practices and 50.6 percent do not coordinate. For vegetable cooperatives, 69 percent said they coordinate production while 31 percent do not. Of the fruit and vegetable cooperatives involved in bargaining activity, 57.9 percent coordinated some production compared with 42.1 that did not.

Figure 7 shows the response from fruit and vegetable marketing cooperatives when asked specifically if they coordinate harvesting decisions. Sixty-nine or 85.2 percent of the fruit cooperatives said they coordinated, while only 14.8 percent (12) said they did not. For the vegetable cooperatives, 73.8 percent or 31 coordinated harvesting decisions compared with 26.2 percent or 11 which did not. For the 19 fruit and vegetable cooperatives that conduct bargaining activities for their member-producers, 31.6 percent or 6 said they coordinate harvesting decisions while 68.4 percent (13) said they did not.

Coordination by Types of Operations

Coordination of production and harvesting decisions is very important to matching markets with demand or fully utilizing marketing facilities and labor. The same is true whether it is a fresh market operation or processing operation. However, it is assumed that more coordination is required and employed with processing marketing operations than with fresh marketing operations. This section will examine the level of coordination by types of marketing operations. Table 12 data show responses to coordination of production practices and harvesting decisions as it relates to fruit and vegetable fresh and processing marketing operations and bargaining activities.

Fruit—For fruit fresh market cooperatives, 31 or 59.6 percent said they coordinate, while 21 or 40.4 percent do not. Fruit processing marketing, 21 or 80 percent have some form of coordination program as compared with only 4 or 16 percent that said they do not coordinate. Of fruit marketing cooperatives that reported both fresh and processing operations, 50 percent said they practice coordination.

Figure 6—**Cooperative coordinates production and harvesting practice by type of products handled and bargaing activities**

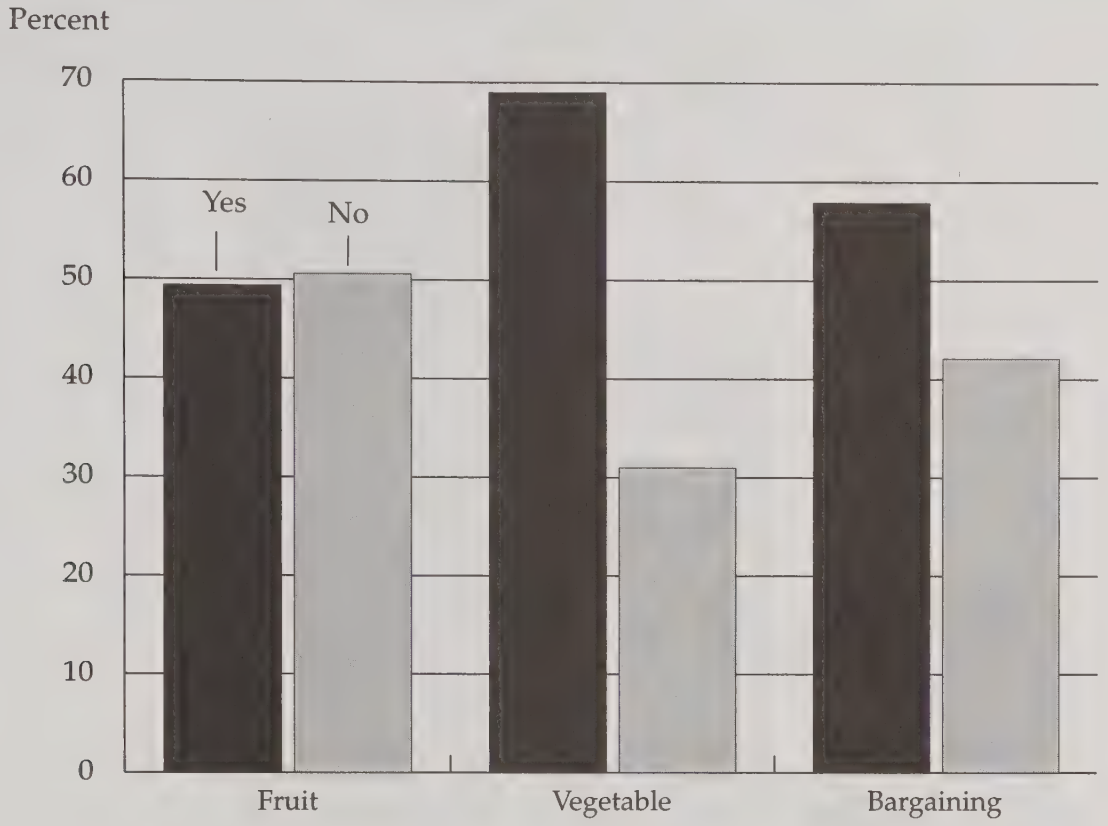


Figure 7—**Cooperative coordinates harvesting schedule by type of products handled and bargaing activities**

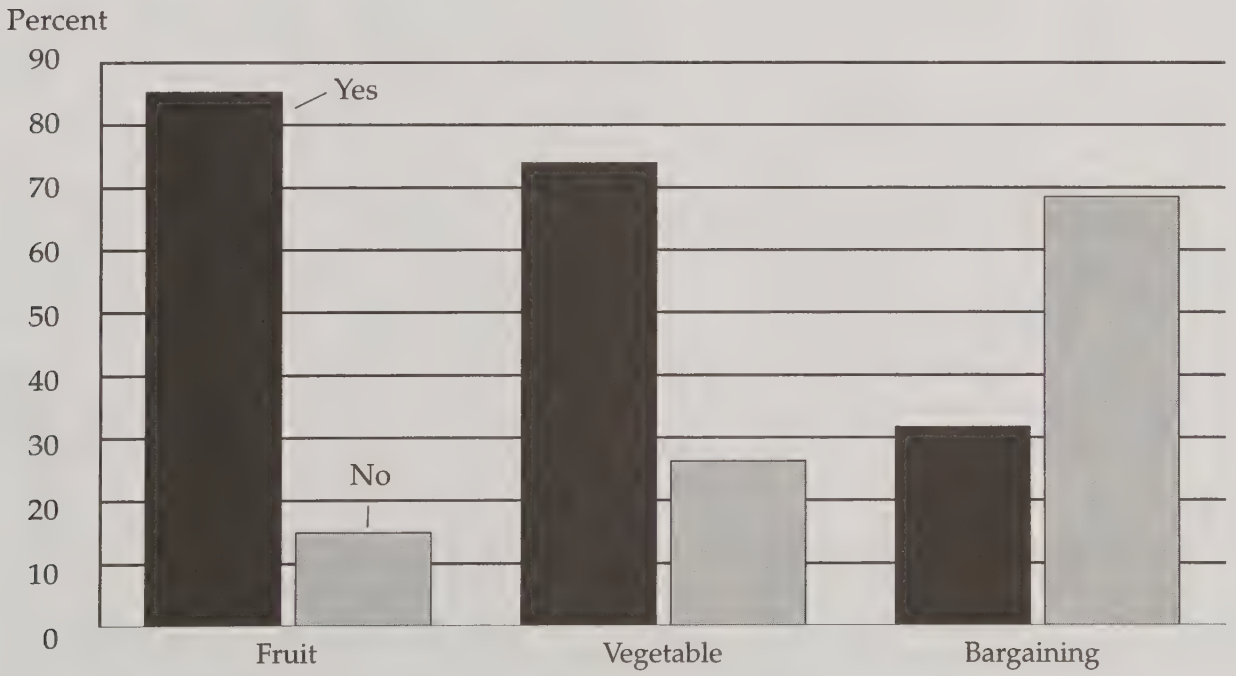


Table 12—**Coordination of production and harvesting practices by type of cooperative operation** [1]

Type of cooperative	Coordination					
	Yes	No	Total	Yes	No	Total
	Number			*Percent*		
Fruit:						
Fresh market	31	21	52	59.6	40.4	100
Process market	21	4	25	84.0	16.0	100
Both fresh & process	2	2	4	50.0	50.0	100
Vegetable:						
Fresh market	20	13	33	60.6	39.4	100
Process market	2	0	2	100.0	0.0	100
Both fresh & process	6	1	7	85.7	14.3	100
Bargaining:						
Fresh market	4	9	13	30.8	69.2	100
Process market	2	4	6	33.3	66.7	100
Both fresh & process	0	0	0	00.0	00.0	00

[1] Data will not add to total because respondents were asked to check all that apply.

Vegetable—Coordination for vegetable fresh marketing operations is similar to fruit fresh market. Almost 61 percent of the cooperatives said they practiced some form of production and or harvesting coordination. While only two vegetable processing market cooperatives responded to the survey, both coordinated production and or harvesting practices. Of vegetable marketing cooperatives that do both fresh and process marketing, more than 85 percent said they coordinated.

Bargaining—Less than one-third of bargaining cooperatives that handle products for fresh and processed markets coordinate harvesting. Four of the 13 (30.8 percent) fresh marketing cooperatives said they coordinate while only two of six process marketing cooperatives (33.3 percent) said they coordinated production and/or harvesting decisions. None of the bargaining cooperatives surveyed coordinated products for both fresh and process markets. Thus, fruit, vegetables, and bargaining cooperatives all tended to coordinate if they also processed.

Coordination's Impact

The production of fresh fruit and vegetables destined for the domestic market had a farm value of about $28 billion in 1997. The estimate of the value added at each stage indicates the relative importance of the marketing functions and the impact coordination of production practices and harvesting decisions could have on the cooperative marketing program.

Matching Supply with Demand—The ideal long-term situation for cooperative management and producers is to have balanced supply and demand. A number of producer associations are using a combination of tools such as Government marketing orders, standards and commodity group promotion, and advertising for better coordination. Eighty (55.6 percent) said they supported or tried to use Government grades and standards, 56 (38.9 percent) supported commodity group promotion and advertising, and 31 (21.5 percent) favored Government marketing orders (figure 8).

Methods Used—To match supply with demand, cooperative management needs to control or influence the quantity and quality of produce handled. Table 13 lists methods used, along with the number of cooperatives, to influence the quantity and quality of produce handled. Ninety-seven (67.4 percent) of the cooperatives used grading to influence quantity and quality, 84 (58.3 percent) used producer meetings, and 68 (47.2 percent) used a field person. In addition, 63 (43.8 percent) used newsletters, 61 (42.3 percent) used the telephone, and 8 (5.6 percent) used legislative action.

Balancing Obstacles—Many private businesses and cooperatives have trouble balancing the supply of

Figure 8—**Does the co-op support or try to use methods to help match supply with demand?**

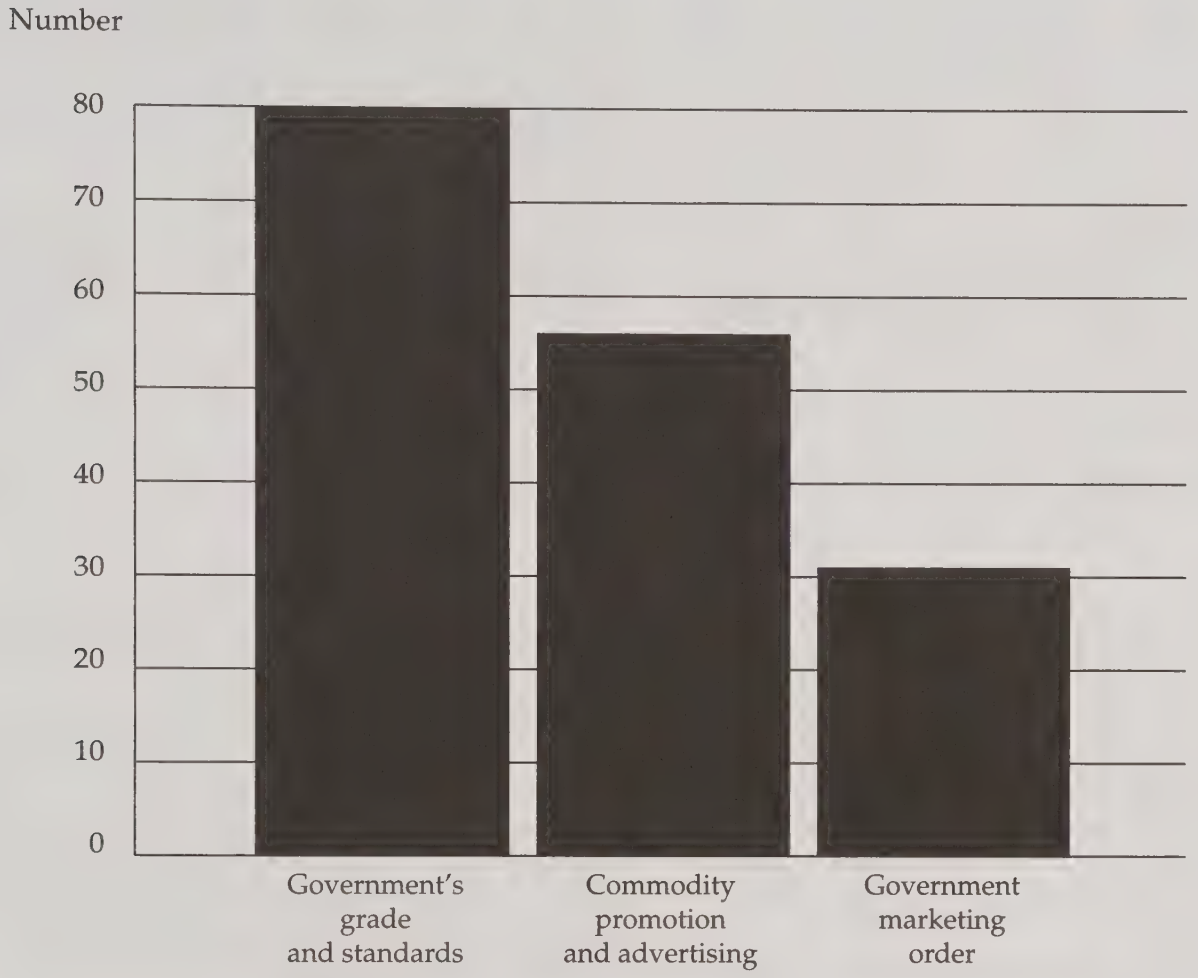


Table 13—**Methods used in an attempt to influence quantity or quality of produce handled** [1]

Methods	Cooperatives	
Total surveys (144):	*Number*	*Percent*
Grading	97	67.4
Producer meeting	84	58.3
Fieldperson	68	47.2
Newsletter	63	42.4
Telephone	61	42.4
Legislation	8	5.6

[1] Data will not add to total because respondents were asked to check all that apply.

Table 14—**Obstacles cooperative face in balancing supply with demand for products marketed** [1]

Obstacles	Cooperatives	
Total surveys (144):	*Number*	*Percent*
Size of farm:		
Too small	28	19.4
Too diverse	24	16.7
Farms were too large	6	4.2
Getting producers to harvest on schedule	48	33.3
Getting producers to use the "correct" production practice	35	24.3
Determine quantity needed	28	19.4
Getting producers to plan the "correct amount"	25	17.4
Other	24	16.7

[1] Data will not add to total because respondents were asked to check all that apply.

products available with market demand. Cooperatives were asked to identify the types of obstacles they faced (table 14).

Twenty-eight (19.4 percent) indicated that farm size (too small) was an obstacle, 24 (16.7 percent) said farms were too diverse, and 6 cooperatives reported that farms were too large. Less than 20 percent of the cooperatives believe farm size is an obstacle to balancing supply with demand for products their cooperative markets.

A higher percentage of the cooperatives said getting producers to follow the coordination plan was a major obstacle. Forty-eight (33.3 percent) of the cooperatives said "getting producers to harvest on schedule," 35 (24.3 percent) said "getting producers to use the correct production practices," and 28 (19.4 percent) said the cooperative had problems "determining quantity needed." Additionally, 25 (17.4 percent) cooperatives said "getting producers to plant the correct amount" was an obstacle and 24 (16.7 percent) cooperatives listed "other" obstacles.

Several cooperatives said weather was a factor in balancing supply and demand and considerably influenced the size and quality of products. Another obstacle listed was the need to educate member-producers on the dynamics of marketing. Some of the experiences reported by cooperatives are: (1) when the supply of produce is scarce, members don't want to sell through the cooperative, but want to use the cooperative when supply is large; (2) getting more patrons to produce during off-peak periods; (3) planting marketable varieties; (4) matching timing of deliveries with market demand; and (5) too many packers and too much capacity in the industry. One cooperative said there weren't enough organic producers. Others cited labor difficulties and high retail markup.

Methods Used to Communicate—Implementing strategies that effectively communicate a coordination program is very important to fruit and vegetable marketing cooperatives. When developing a coordination strategy for production practices and harvesting scheduling decisions, management must realize that member-producers have a stake in the program. Therefore, members need full and accurate information.

Members benefit most when they are informed. They gain a better appreciation of what their cooperative does for them, better understand their investment in the business, and develop a realistic expectation for returns on that investment.

Members lacking complete, coherent, and consistent information may lose a clear perspective on cooperative decisions and become skeptical or confused. Lack of confidence in their cooperative can undermine the organizational climate and the credibility of management and the board can be threatened.

A marketing cooperative needs a loyal membership to effectively administer a coordination program. A membership base not solidly committed can undermine a cooperative's ability to fulfill its marketing role. Member-producers should be shown how their ownership interest makes a difference. Members' perception of the performance and direction of the cooperatives either reinforces loyalty or causes them to seek alternative avenues for marketing their products.

Cooperative representatives were asked to select from five methods (field person, producer meetings, newsletter, telephone, and binding agreements) used to communicate their influence or control of various coordination efforts and to identify all of the methods that applied to their association. Many indicated that they used more than one method of communication.

Table 15—**Methods used to communicate influence or control**[1]

Methods	Cooperatives	
Total surveys (144):	*Number*	*Percent*
Field person	33	22.9
Producer meetings	30	20.8
Newsletter	30	20.8
Phone	21	14.6
Binding agreements	12	8.3

[1] Data will not add to total because respondents were asked to check all that apply.

Table 15 shows 33 (22.9 percent) used a fieldperson, while producer meetings and newsletters each were selected by 30 (20.8 percent) cooperatives. Another 21 (14.6 percent) used the telephone and 12 (8.3 percent) used binding agreements (contracts).

While the cooperatives used several methods to communicate influence or control for coordinating production practices and harvesting schedules, the question remains on how they affected cooperative marketing efforts.

Figure 9 shows that 39 (27.1 percent) of the cooperatives increased quality of the product available for marketing. Another 35 (24.3 percent) said provided marketable produce, nine (6.2 percent) said it provided "no help," while four (2.8 percent) reported that influence or control only helped producers and not the cooperative.

Five (3.5 percent) cooperatives provided a variety of additional comments relating to influence or control: (1) customers relate better—this could imply that the buyers have some indication of the quality of the products handled by the cooperative; (2) safety factor— cooperatives feel this gives the buyers additional confidence in the safety and quality of the product. In comments related to organic production, cooperatives

Figure 9—**Does influence or control affect co-op marketing efforts?**

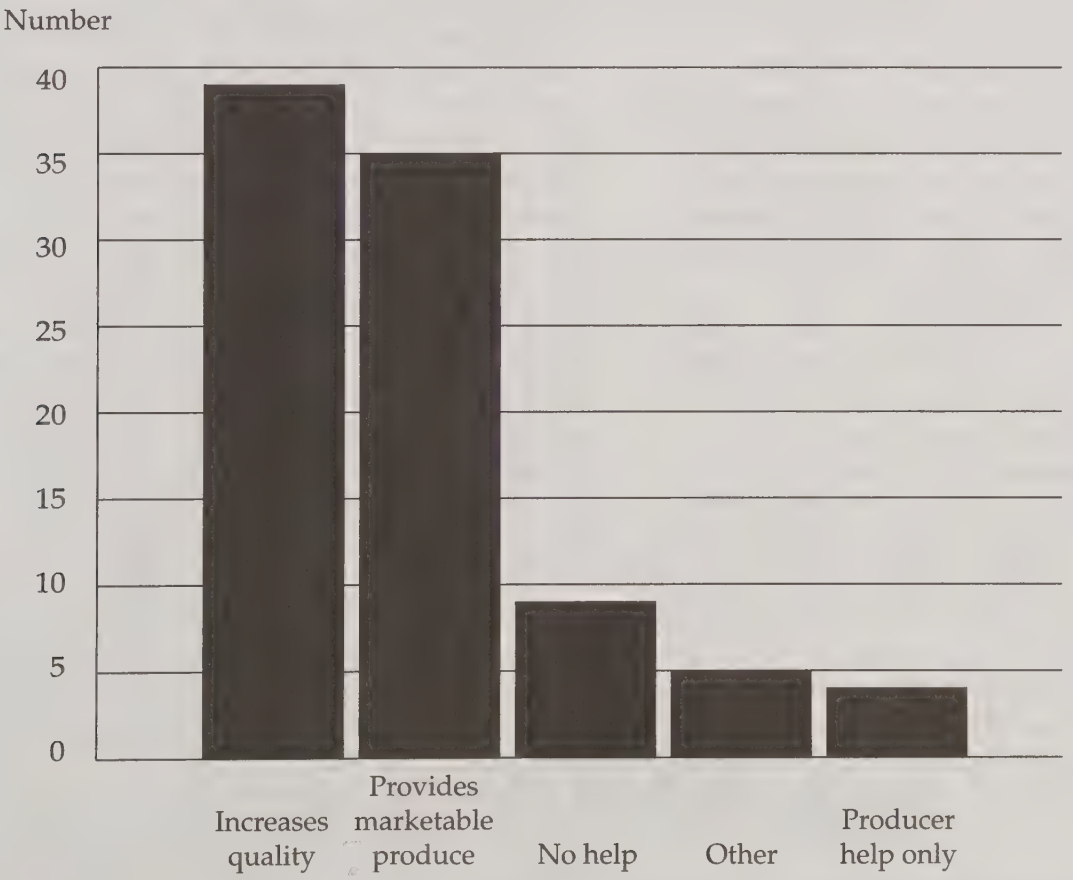


Table 16—**How has coordination of production or harvesting helped your cooperative?**[1]

Answer	Response	
Total surveys (144):	*Number*	*Percent*
Resulted in higher dollar value	58	40.3
Provided reduced operating cost	52	36.1
No coordination	41	28.5
Resulted in higher prices	37	25.7
Increased quantity sold	37	25.7
Provided more markets	33	22.9
Other positive influence	21	14.6

[1] Data will not add to total because respondents were asked to check all that apply.

said produce must be certified organic by an approved agent; all crops must be grown organically; and influence or control secures growers' identity as organic producers.

Benefits Derived

Another objective of this study was to identify and measure how those cooperatives benefit that coordinate production and harvesting decisions. Cooperatives were asked how those decisions helped them. Table 16 shows that 41 (28.5 percent) did not coordinate production or harvesting decisions. However, for those cooperatives that do coordinate, 58 (40.3 percent) said it had "resulted in higher dollar value," 52 (36.1 percent) said it "provided reduced operating cost," and two groups of 37 (25.7 percent) said it "resulted in higher prices received for product sold" and "increased quantity sold."

Other cooperatives listed other positive influences from coordination of production and harvesting decisions—uniformity of returns to producers; sustained year-round employment of hourly workers; longer marketing season; ability to survive price swings; and maximize use of loans. Other benefits reported were a better mix of products, matching harvest with sales, improving the quality of product sold, spreading the season out, and building a reputation for business.

Coordination also provided more freedom to operate said 72.8 percent (75) of the 103 cooperatives responding. Another 7.8 percent (8) disagreed, 15.5 percent (16) were "not sure" and 3.9 percent (4) did not respond (figure 10).

Coordination also better enabled cooperatives to respond to market conditions according to 74 (71.8 percent) cooperatives. Seven (6.8 percent) felt it made no difference, another 16 (15.5 percent) were not sure, and 6 (5.8 percent) didn't respond (figure 11).

Of the 41 cooperatives that did not coordinate production and harvesting decisions, 61 percent (25) said they would benefit from coordination (figure 12). In contrast, 39 percent (16) said their cooperatives would not benefit.

Products Handled and Bargaining Activity— Figure 13 analyzes data based on benefits derived from coordination by products handled and bargaining activity. Sixty-two (76.5 percent) of the 81 total fruit marketing cooperatives said they benefited from coordination, compared with 23.5 percent (19) of the fruit cooperatives that did not benefit. For the vegetable cooperatives, 71.4 percent (30) of the total 41 vegetable marketing cooperatives said they benefited from coordination while only 28.6 percent (12) did not benefit. While more than 70 percent of the fruit and vegetable marketing cooperatives derived benefits from coordination, less than 20 percent (18.8) of the bargaining cooperatives said they benefited from coordination, compared with 81.2 percent that did not benefit.

Negative Effects—Previous research has shown that cooperatives' organizational structure may hamper their ability to develop and implement successful coordination programs. There is less coordination in a cooperative than in an integrated non-cooperative firm.

Cooperatives must depend on member contracts or marketing agreements that provide for surrender of coordination to the cooperative and usually these con-

Figure 10—**Does coordination give the cooperative more freedom to operate?**

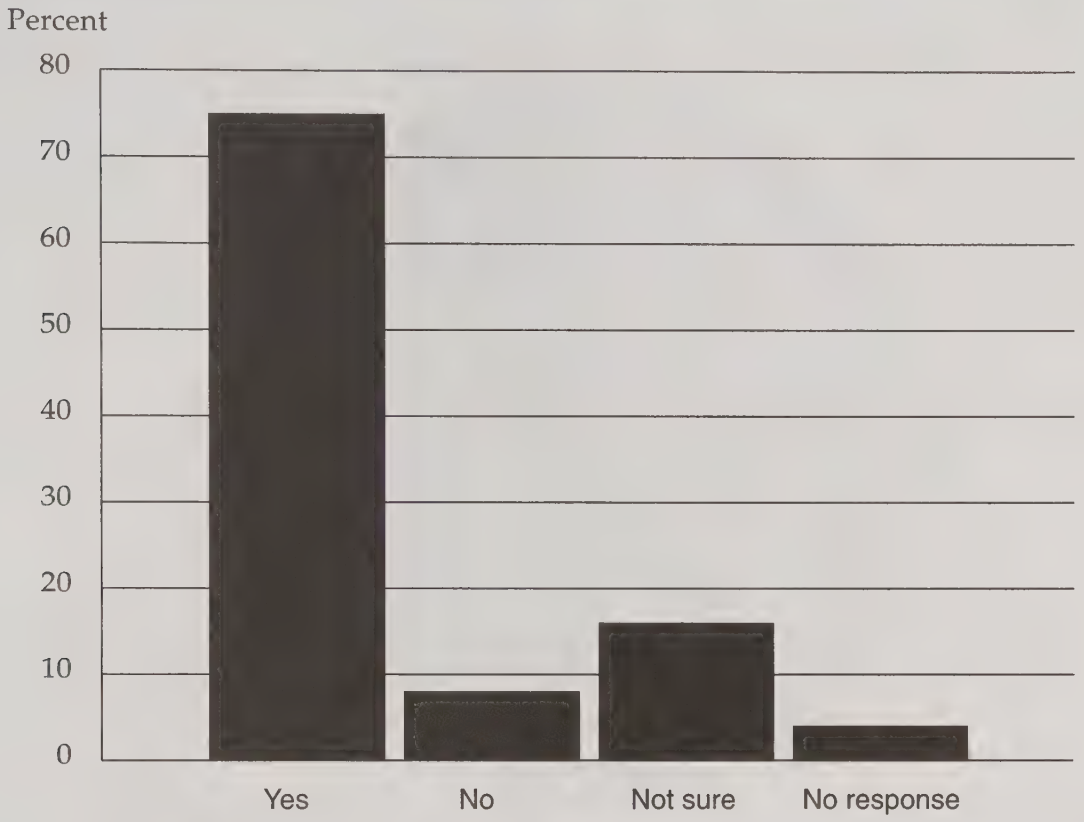


Figure 11—**Has coordination better enabled your co-op to respond to market?**

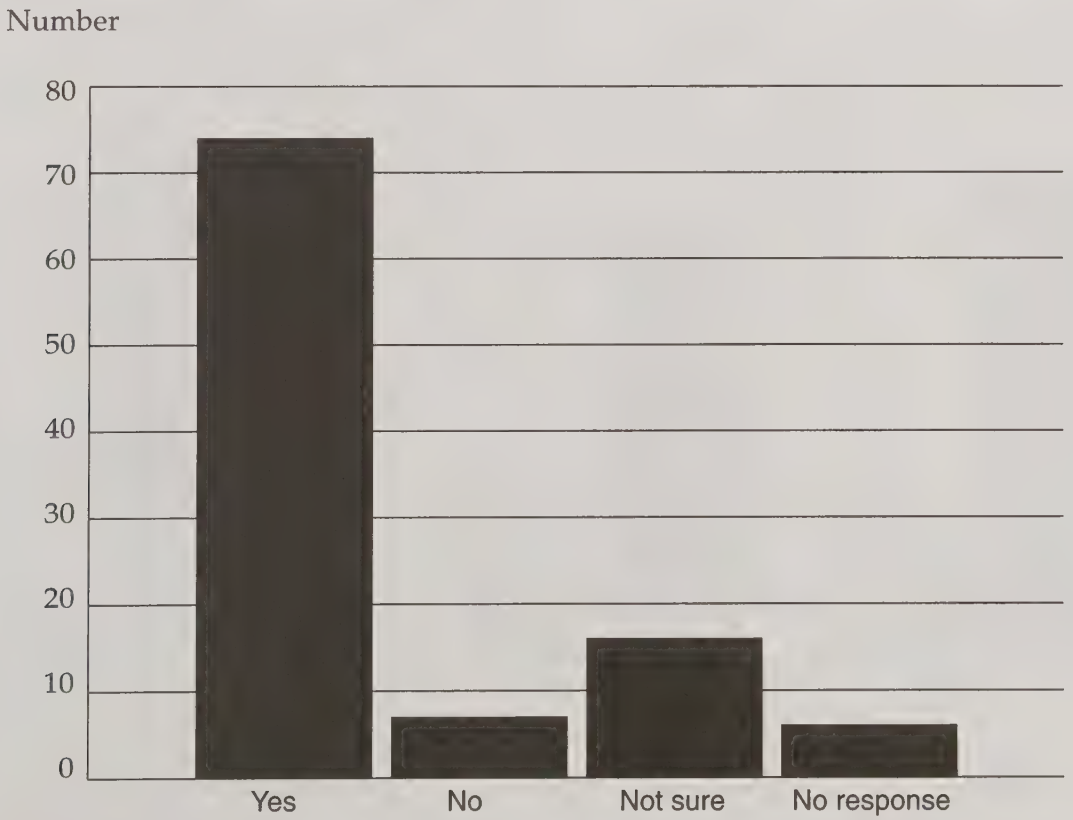


Figure 12—**Could your cooperative benefit from a coordination plan?**

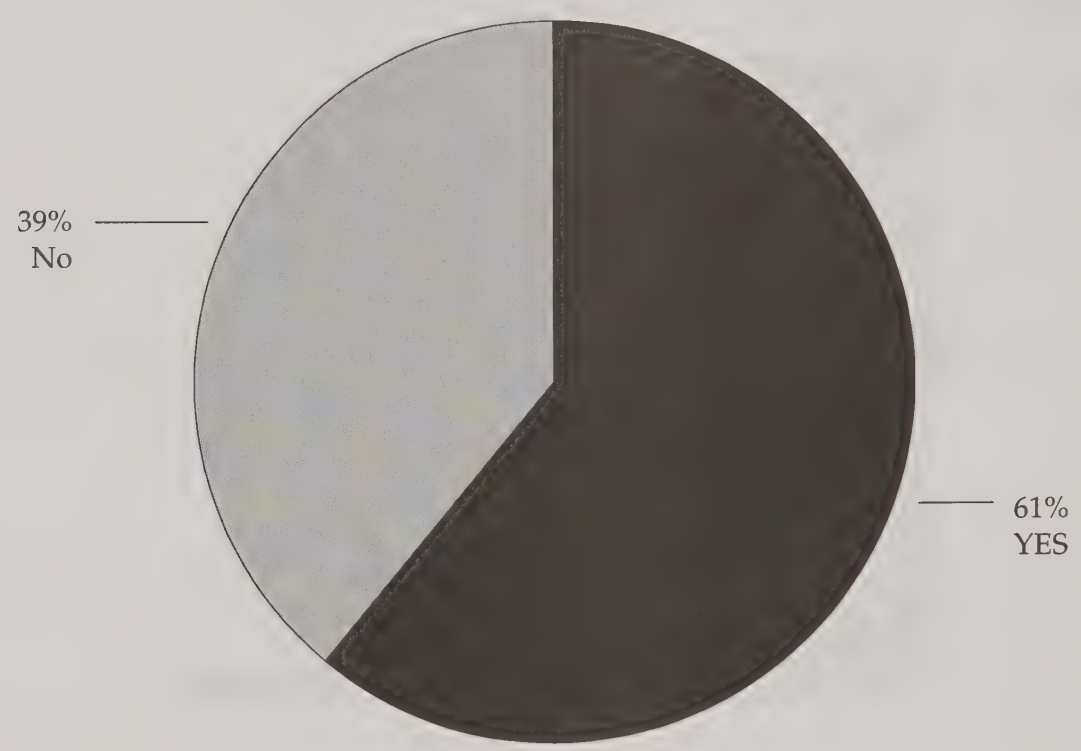


Figure 13—**Cooperative coordinates production and harvesting practice by type of products handled and bargaing activities**

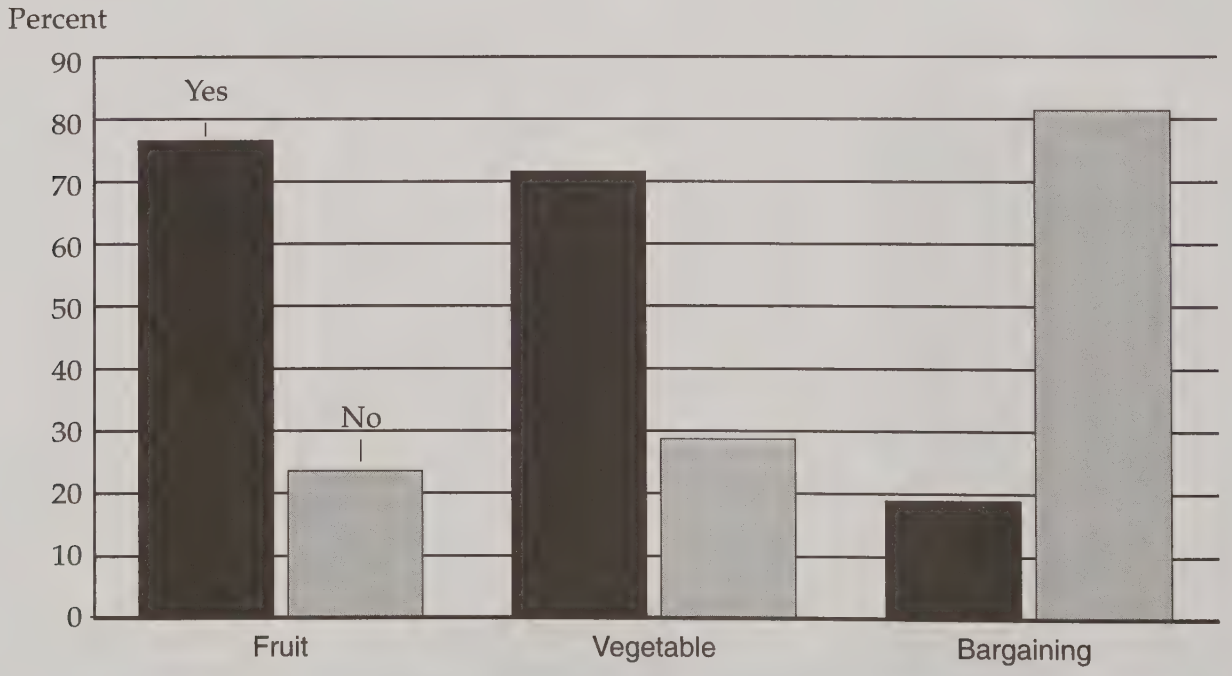


Table 17—**Has coordination resulted in any negative effects?** [1]

Answer	Response	
Total surveys (144):	*Number*	*Percent*
Resulted in higher dollar value	58	40.3
No negative effects	50	54.9
Member complaints	30	33.0
Increased cost	5	5.5
Resulted in bad match of supply and demand	6	6.6
Total	91	100

[1] Data will not add to total because respondents were asked to check all that apply.

tracts are limited by State statute. Members who resist changes in production practices make it difficult for the cooperative to promote such changes or implement price differentials. In this case, cooperatives respond too slowly to market information and may lag rather than lead the market.

When asked if coordination had any negative effect, 91 of the 103 cooperatives that reported some form of coordination (table 17) responded. Fifty (54.9 percent) said that coordination had "no negative effect." Another 41 disagreed, claiming coordination had some negative effect. Among those cooperatives, 30 (33 percent) listed member complaints, 5 (5.5 percent) reported increased cost, and 6 (6.6 percent) said "it resulted in a bad match of supply and demand." Others said "need more organizational support;" "new producers have a hard time getting market share sometimes;" and "off-peak harvesting season increased cost to producers."

Effectiveness of Performance Standards—What should a cooperative expect from its coordination program? Ideally, it would be a system that delivers the correct quantity and quality of products at the time and place that maximizes the benefit to grower-members from the resources available.

The study indicated 103 of the total 144 cooperatives surveyed reported having some sort of production and harvesting schedule coordination program. However, only 36 (35 percent) of the cooperatives said their performance standards measured the success of their coordination process (figure 14). Twenty-seven (26.2 percent) said their performance standards did not measure success, 28 (27.2 percent) were "not sure", and another 12 didn't respond.

Cooperatives used a variety of performance standards: (1) producer return versus other handler's quantity; (2) net return to producers; (3) USDA standards and above; (4) return on fruit versus competition; (5) net margin from all operations and earnings to member producers; (6) net on-tree price of fruit; (7) yield grade standards; (8) highest quality at reasonable cost; (9) average sale price per carton, and (10) net margins from operation and earnings to member-producers.

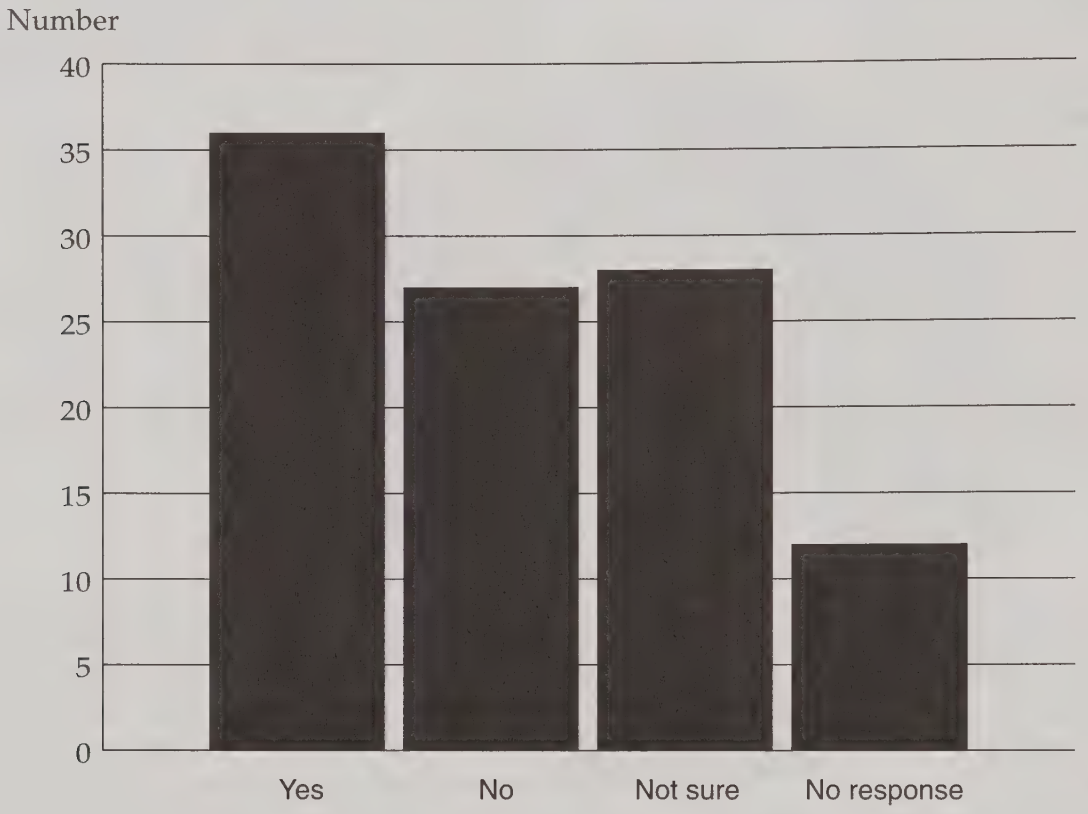
Summary and Conclusions

This study sought to determine the degree fruit and vegetable cooperatives coordinated their production practices and harvesting scheduling decisions to match anticipated supply with market demand during a specific period.

The study showed 55.6 percent (144) of the 259 cooperatives identified responded. They varied in type, size, and the variety of functions and services provided to member-producers. The number of cooperatives that said they used some form of coordination is greater than the number of those who provided specifics about their coordination when asked.

Sixty-two percent (89 of 144) said they practiced some form of coordination. However, both the proportion of cooperatives and the degree of activity or coordination decreased when cooperatives were asked about specifics such as influence or controll of production practices (quantity of crop produced, variety planted, and production supplies), harvesting deci-

Figure 14—**Does co-op's performance standards measure the success of the coordination process?**



sions, and impacts on marketing. In these specific areas, the rate of participation ranged from 23.6 percent to 42.4 percent.

Forty-two percent of the cooperatives said they attempted to influence or control the quantity of a particular crop planted. Another 42 percent said they did not influence or determine the variety of crops planted, and 57 percent said they had no influence or control over supplies used by member-producers.

Cooperatives used various methods in coordinating harvesting scheduling decisions. About one-third, (53 of the participating cooperatives) said their management calls for a given quantity on a particular day. Other methods include providing harvesting at the member-producer's request and price information, in an attempt to control or influence the quantity delivered. Cooperatives also used harvesting schedules to influence the efficiency of the marketing facility's operation—better control of labor, reducing producer's delivery time at the plant, and helping match volume to a specific market window.

The level of coordination by products handled (fruit versus vegetable) was similar to that for all fruit and vegetable cooperatives. The hypothesis established at the beginning of the study was that fruit marketing cooperatives, mainly tree crops, would have a higher rate of coordination compared with vegetable-row crops and bargaining cooperatives. Based on the findings from the survey data, fruit and vegetable marketing cooperatives reported similar rates of coordination. Over sixty-five (65.4) percent of the fruit marketing cooperatives said they practice some form of production and/or harvesting coordination, compared with 66.7 percent of the vegetable marketing cooperatives, and only 31.6 percent of the bargaining cooperatives.

When asked specifically about production coordination versus harvesting coordination, 49.4 percent of the fruit cooperatives surveyed said they coordinated production practices, compared with 69 percent for vegetable cooperatives. Of bargaining cooperatives that handled both fruit and vegetables, 57. 9 percent said they coordinated production.

Harvesting coordination decisions for fruit and vegetable cooperatives were higher compared with production coordination. Sixty-nine or 85.2 percent of

the fruit cooperatives coordinated harvesting decisions, compared with 73.8 percent for vegetable cooperatives and 31.6 percent for bargaining.

Coordination of production practices and harvesting decisions by type of operations—fresh and processing fruit and vegetable cooperatives' marketing operations were examined in this study. The results show that 59.6 percent of the fruit fresh marketing cooperatives said they coordinated production and/or harvesting decisions, compared with 84 percent of the fruit processing cooperatives.

Coordination of vegetable fresh marketing operations was similar to that of fruit fresh marketing operations—61 percent said they practice coordination. Only two vegetable processing cooperative operations responded to the survey; both said they coordinated production and/or harvesting.

The survey data identified some coordination methods cooperatives used to impact their marketing operations, and some of the benefits derived from coordinating production practices and harvesting decisions. Eighty cooperatives (55.6 percent) said they supported or tried to use Government grades and standards to match supply with demand to impact their market operation. Another 56 used commodity group production and advertising, and 31 favored Government marketing orders. Nearly 72 percent of the cooperatives said coordinating production and harvesting schedules helps in responding to marketing conditions. However, some cooperatives reported obstacles in balancing supply with demand such as farms that were too small and operations that were too diverse. A small number of cooperatives said that farms were too large.

Fruit and vegetable cooperatives have the organizational structure that allows them to integrate production, harvesting, and marketing just like non-cooperative businesses. However, communicating the cooperative's coordination of production practices and harvesting schedule strategy to member-producers is very important to the success of the overall marketing program. Cooperative management must realize that member-producers have a stake in the cooperative as users and owners.

Cooperatives used several methods to communicate influence or control of the coordination strategic plan, including a field person, telephone, producer meetings, newsletters, and binding agreements. Most cooperatives used more than one method.

Identifying the benefits derived from coordination was an objective of this study. Forty-one cooperatives did not coordinate production and harvesting schedules. But, of those cooperatives that did, 58 said "coordination resulted in higher dollar value," 52 said "coordination reduced operating cost," and two groups of 37 cooperatives reported higher prices and increased quantity sold. Overall, the analysis shows that for those cooperatives that practiced some form of coordination, 76.5 percent of the fruit cooperatives benefited compared with 71.4 percent of the vegetable cooperatives. For fruit and vegetable cooperatives that engaged in bargaining activities, less than 20 percent (18.8) benefited. However, 41 cooperatives reported some negative effect from coordination such as members' complaints, increased cost, and bad match of supply and demand.

In conclusion, even with the seemingly low rate of cooperative coordination of production and harvesting schedules, the study indicates that the coordination process can be an advantage to both the cooperative and member-producers.

In this competitive and changing environment, fruit and vegetable cooperatives benefited from having more freedom to influence and/or control production practices and harvesting decisions, but there is room for improvement.

Communication is a key factor in developing and maintaining a successful coordination program. Member-producers and cooperative management must be aware of all the details of this working relationship. Under such an arrangement, cooperative management must make and implement decisions that will benefit all member-producers and provide incentives for member-producers to relinquish some of their decision-making power and control.

For example, cooperatives will need to provide additional services or functions for member-producers as a way of compensating them for yielding some of the control over crops. To make this coordination

process work, the cooperative will have to develop sound communication techniques as well as performance standards for measuring the success of the coordination process. As one chief executive officer of a large marketing cooperative said, "Coordination works best when member-producers are free to do what they do best, namely production. The board of directors concentrates on policy and budget, and the cooperative acts as the marketing agency."

References

American Cooperation, Journal Of Agricultural Cooperation, Volume 8, National Council of Farmer Cooperatives, 1993.

Cotterill, Ronald W., Competitive Strategy Analysis for Agricultural Marketing Cooperatives, Boulder, C0, Westview Press, 1994.

How, R. Brian, Marketing Fresh Fruits and Vegetables, New York City, NY, Cornell University, Van Nostrand Reinhold, 1991.

Jacobs, James A., Fruit and Vegetable Cooperatives, Washington, D.C.: USDA/ACS, CIR Report 1 Section l3, 1990.

Marion, Bruce W., The Organization and Performance of U.S. Food System, Canada, NC117 Committee, 1986.

Mueller, Willard F., Peter G. Helmberger, and Thomas W. Paterson, The Sunkist Case: A Study in Legal-Economic Analysis, D.C. Heath and Company, 1987.

NATIONAL AGRICULTURAL LIBRARY
1022564003

U.S. Department of Agriculture

Rural Business—Cooperative Program

Stop 3250

Washington, D.C. 20250-3250

Through its Rural Business–Cooperative program, USDA Rural Development provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The cooperative segment of Rural Development (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs. RBS also publishes research and educational materials and issues *Rural Cooperatives* magazine.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.