B-725
June 1976

vertical coordination in cooperative grain marketing systems in the southern plains

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Vertical Coordination in Cooperative Grain Marketing Systems in the Southern Plains

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The arrangements employed for the movement of grain from a local cooperative to a regional cooperative are becoming increasingly complex. Advancements in the fields of management, transportation and communication continually change the speed and efficiency of the movement of grain through the sequences in the marketing chain. Coordination of the arrangements which control this movement of grain must adjust with the latest technology to utilize efficient procurement, storage, transportation, hedging, and merchandising methods.

Little is known of the nature, implications and potentials of closer vertical coordination among grain marketing cooperatives. Much of the past research has tended to deal with operations at a given marketing level rather than with the entire system. However, it is commonly known that increasing the efficiency with which a function is performed (when considered in isolation) does not guarantee efficiency of the system as a whole. The study presented herein was designed to analyze coordination among activities at two different levels — the regional and local grain marketing cooperatives.

Objectives of the Study

The objectives of this research were (1) to describe existing marketing practices and patterns of local cooperatives in Texas and Oklahoma, (2) to describe coordinating arrangements between local cooperative grain elevators and the regional cooperatives with whom they sell grain, and

Research reported herein was conducted under Oklahoma Station Project No. 1559. This research was supported in part by contract with the Farmer Cooperative Service, U.S.D.A.

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(3) to investigate those possibilities and potentials which may exist or can be developed that would enable grain marketing cooperatives to increase producer returns through closer vertical coordination within the cooperative grain marketing system.

General Organization and Procedure

Because of the large population and the large variation in size of local grain cooperatives in Oklahoma and Texas, a random sample, stratified according to storage capacity size and by state, was selected to represent the grain cooperative population. Because the cooperatives in the Texas sample were separated into two distinct regions, the Texas Plain region and the South Texas region, much of the remaining analysis is presented on a region basis. That is, many comparisons are made among regions rather than between states. Table 1 gives the breakdown in size distribution of the 67 local cooperatives in the three sampled regions.

The managers of each local cooperative in the sample were personally interviewed concerning their operation and their relationship with the regional cooperative through which they sold grain. The questionnaire used in the interviews was designed to extract information pertaining to marketing patterns and the coordination of marketing services and decision factors between the local and regional grain cooperatives. The data were then processed for the computer to facilitate simple statistical and accumulative analysis. This report is designed so that cooperative leaders will have a summary of the research results deemed pertinent to local cooperative operations for comparison with cooperatives in other regions in various size groups. Highlights of the results are presented in the following sections.[1]

Table 1. Size Distribution of Local Cooperatives in the Sample, by Region

Group	*Capacity (bu.)*	*Texas Plains*	*South Texas*	*Oklahoma*
1	Less than 100,000	3	0	2
2	100,000 to 399,999	3	2	7
3	400,000 to 599,999	4	1	7
4	600,000 to 999,999	2	1	8
5	1,000,000 and greater	17	3	7
	Total	*29*	*7*	*31*

[1]For more detailed procedures and results, refer to Baden [1].

Forward Marketing of Grain From Farms To Local Cooperative Grain Elevator Associations

This section deals with existing marketing patterns from the producer to the local cooperative. Items of interest here are the volume of grains marketed through local facilities, the contractual arrangements involved and the methods of grain purchases. Also, the local cooperative's operations after receiving the grain are discussed, i.e., the sources and amounts of operating capital used and the types of storage facilities and contractual arrangements.

Existing Marketing Patterns

Differences between the three regions pertaining to types and volumes of grains marketed through the local association are given in Table 2. The six grains represented in this table were the most important by volume handled by local associations in the sample. Wheat and grain sorghum were the most important grains for Oklahoma and Texas in terms of volume marketed. Of grains marketed through local Oklahoma cooperatives in 1973, 89 percent (959,000 bushels) was wheat and 5 percent was grain sorghum. In Texas the respective percentages were 27 for wheat and 65 for grain sorghum. The sampled associations in the South Texas region handled only grain sorghum.

Local grain cooperative managers have several options to consider when buying grain. The options include (1) pay cash at the time the wheat is brought across the scales, (2) forward contract, (3) buy grain being stored in their own facilities, (4) buy grain from farm storage either for cash or on contract, (5) buy at a delayed price, or (6) buy pooled grain. Tables 3, 4 and 5 show the distribution of grain purchases by methods of purchase for Oklahoma, the Texas Plains and South Texas, respectively. Deferred payment arrangements, which were not an infrequent occurrence in Oklahoma, were not singled out in these tables; rather, they are discussed later as a part of Table 10.

Table 2. Average Volume of Selected Grains Handled by Cooperatives in 1973, by Region[1]

Region	*N*[2]	*Wheat*	*Sorghum*	*Corn*	*Barley*	*Soybeans*	*Oats*
				Thous. bu.			
Oklahoma	31	959	59	5	35	7	16
Texas Plains	29	520	978	117	7	34	4
South Texas	7	0	1211	0	0	0	0

[1]Rye, mungbeans, and other miscellaneous grains were grown in some areas of the population of local associations, however their relative economic importance was small compared with the six grains listed.
[2]Refers to the number of sampled cooperatives.

Table 3. Percentages of Grain Purchased by Various Methods Used by Oklahoma Cooperatives in 1973, by Grain

Methods of Purchase	Wheat	Sorghum	Corn	Barley	Soybeans	Oats
			Percent			
1. Traditional Cash Purchase at Harvest (Cash Delivery)	31	52	62	33	65	30
2. Contracted Prior to Harvest for Delivery and Payment at Harvest	1					
3. Stored for Farmer and Purchased Later	57	39	18	66	33	68
4. Purchased (After Harvest) from Farm Storage						
(i) For Cash	4			1	2	
(ii) On Forward Contract	2					
5. Purchased but with a Delayed Price	1					
6. Grain Pool				1		2
7. Other[1]	3	9	20			
Total[2]	*99*	*100*	*100*	*101*	*100*	*100*

[1]Other methods referred to here are: 1) bought from other firms, 2) purchased from independent truckers and 3) still carried as open storage.
[2]Columns of data may not add to 100 because of rounding error.

Table 4. Percentages of Grain Purchased by Various Methods Used by Texas Plains Cooperatives in 1973, by Grain

Methods of Purchase	Wheat	Sorghum	Corn	Barley	Soybeans	Oats
			Percent			
1. Traditional Cash Purchase at Harvest (Cash Delivery)	55	42	38	64	65	72
2. Contracted Prior to Harvest for Delivery and Payment at Harvest	4	17	6	2	4	
3. Stored for Farmer and Purchased Later	38	37	56	24	31	27
4. Purchased (After Harvest) from Farm Storage						
(i) For Cash	1			9		
(ii) On Forward Contract						
5. Purchased but with a Delayed Price	2	1				
6. Grain Pool						
7. Other[1]		3				
Total[2]	*100*	*100*	*100*	*99*	*100*	*99*

[1]Other methods referred to here are: (1) bought from other firms, (2) purchased from independent truckers and (3) still carried as open storage.
[2]Columns of data may not add to 100 because of rounding error.

Very little forward contracting was done in either Oklahoma or the Texas Plains. However, Table 5 shows a major portion of the grain sorghum marketed through local association facilities in South Texas was

contracted on a standard (or given) volume basis prior to harvest for delivery and payment at harvest. A possible explanation of this occurrence is that the regional cooperative, exporting grain sorghum on contract, might be willing to offer a more competitive contracted price to local associations in South Texas thereby making local-producer contracts more appealing since their grain sorghum is closer to export facilities and, hence, cheaper to transport.

Table 5. Percentages of Grain Purchased by Various Methods Used by South Texas Cooperatives in 1973, by Grain

Methods of Purchase	*Wheat*	*Sorghum*	*Corn*	*Barley*	*Soybeans*	*Oats*
			Percent			
1. Traditional Cash Purchase at Harvest (Cash Delivery)		40				
2. Contracted Prior to Harvest for Delivery and Payment at Harvest		44				
3. Stored for Farmer and Purchased Later		14				
4. Purchased (After Harvest) from Farm Storage						
(i) For Cash		1				
(ii) On Forward Contract						
5. Purchased but with a Delayed Price						
6. Grain Pool						
7. Other						
Total[1]		*99*				

[1]Data do not add to 100 because of rounding error.

Table 6. Methods of Purchasing Grain Used by Local Cooperatives Ranked According to Volume of Grain Involved, by Region[1]

Methods of Purchase	*Oklahoma*	*Texas Plains*	*South Texas*
1. Traditional cash purchase at harvest (cash delivery)	2	1	2
2. Contracted prior to harvest for delivery and payment at harvest	6	3	1
3. Stored for farmer and purchased later	1	2	3
4. Purchased (after harvest) from farm storage — for cash	3	5	–
5. Purchased (after harvest) from farm storage — forward contract	5	–	–
6. Purchased but with a delayed price	6	4	–
7. Grain pool	–	–	–
8. Purchased from other firms	4	5	–

[1]The most used method is given a ranking of 1.

Table 6 illustrates the ranking by association managers of the methods of purchasing grain according to total volume of all grains purchased.

Table 7. Percentage Use of Different Methods of Grain Purchases In 1973 Used by the Oklahoma Sampled Cooperatives, by Group and Grain[1]

Methods of Purchase	Size Group[3]	Wheat	Grain Sorghum	Barley	Corn	Soybeans	Oats
				Percent			
Harvest Cash	1	58	75				
	2	24	50	18			
	3	36	59	34	50	100	20
	4	25	56	51	55	70	44
	5	34	43	22	100	50	22
Forward Contract	1						
	2	1					
	3	3					
	4	1					
	5	2					
Elevator Storage	1	28	25				
	2	61	50	82			80
	3	58	20	64			74
	4	56	44	46	45	25	50
	5	55	57	78		50	78
Farm Storage	1	15					
a) For Cash	2	8					
	3	2	1	2			1
	4	3	[2]	1		5	[2]
	5	4					
b) Forward Contract	1						
	2	1					
	3	1					
	4	4					
	5	4					
Delayed Price	1						
	2						
	3						
	4	4					
	5	1					
Grain Pool	1						
	2						
	3						
	4			2			6
	5						
Other	1						
	2	5					
	3		20		50		
	4	6					
	5						

[1]The percentages of methods of grain purchases by grain for each group add to 100 except for possible round-off error.
[2]Less than 1 percent
[3]The groups are defined as follows:

Group	Grain Storage Capacity (bu.)
1	less than 100,000
2	100,000 to 399,999
3	400,000 to 599,999
4	600,000 to 999,999
5	1,000,000 and greater

Differences in the methods of grain purchases used do exist according to the size of the association. Local associations usually contracted more grain as their sizes increased, as shown in Tables 7, 8, and 9 for Oklahoma, Texas Plains and South Texas, respectively.

Table 8. Percentage Use of Different Methods of Grain Purchases in 1973 Used by the Texas Plains Sampled Cooperatives, by Group and Grain[1]

Methods of Purchase	*Size Group*[3]	*Grain*					
		Wheat	*Sorghum*	*Barley*	*Corn*	*Soybeans*	*Oats*
				Percent			
Harvest	1	97	99	100			100
Cash	2	25	70				
	3	62	52				55
	4	15	10		50		
	5	54	33	73	39	70	65
Forward	1	1	1				
Contract	2		3				
	3	5					
	4	1	20				
	5	8	23	3	8	4	
Elevator	1	1					
Storage	2	40	25				
	3	33	42	100	100	100	42
	4	75	25		50		
	5	40	43	24	53	26	35
Farm Storage	1	2					
a) For Cash	2						
	3	2	3				
	4	18		100			
	5						
b) Forward	1						
Contract	2						
	3						
	4						
	5						
Delayed	1						
Price	2	35	5				
	3						
	4						
	5		[2]				
Grain	1						
Pool	2						
	3						
	4						
	5						
Other	1						
	2						
	3						
	4		45				
	5						

[1]The percentages of methods of grain purchases by grain for each group add to 100 except for possible round-off error.
[2]Less than 1 percent
[3]The groups are defined as follows:

Group	*Grain Storage Capacity (bu.)*
1	less than 100,000
2	100,000 to 399,999
3	400,000 to 599,999
4	600,000 to 999,999
5	1,000,000 and greater

Table 9. Percentage Use of Different Methods of Grain Purchases in 1973 Used by the South Texas Sampled Cooperatives, By Group and Grain[1]

Methods of Purchase	Size Group[3]	Grain Wheat	Sorghum[2]	Barley	Corn	Soybeans	Oats
				Percent			
Harvest Cash	1						
	2		48				
	3		40				
	4		20				
	5		42				
Forward Contract	1						
	2		46				
	3		50				
	4		60				
	5		35				
Elevator Storage	1						
	2		5				
	3		10				
	4		20				
	5		20				
Farm Storage	1						
a) For Cash	2						
	3						
	4						
	5		2				
b) Forward Contract	1						
	2						
	3						
	4						
	5						
Delayed Price	1						
	2						
	3						
	4						
	5						
Grain Pool	1						
	2						
	3						
	4						
	5						
Other	1						
	2						
	3						
	4						
	5						

[1]Grain sorghum is the only crop marketed by South Texas sampled associations.
[2]The percentages of methods of grain purchases by grain for each group add to 100 except for possible round-off error
[3]The groups are defined as follows:

Group	Grain Storage Capacity (bu.)
1	less than 100,000
2	100,000 to 399,999
3	400,000 to 599,999
4	600,000 to 999,999
5	1,000,000 and greater

Local Cooperative Operations

Local associations must have strong financial backing, and storage facilities must be managed properly to insure efficient utilization and maximum returns to patrons. The local cooperative must be financed either from its own pool of capital or from outside sources. During the harvest season large amounts of capital are required by local cooperatives over short time periods.

Cooperative associations in the Oklahoma sample required an average of $1,222,558 during periods of peak cash requirements. The Texas Plains and South Texas region sampled associations required an average of $1,398,242 and $857,143, respectively. These differences can be attributed to the various sizes of associations within each region, the larger associations requiring more operating capital.

Locals acquire capital from several sources (Table 10) including commercial banks, the Bank for Cooperatives, interest or non-interest bearing cash advances, delayed payments from farmers seeking tax advantages, farmer patron loans, and/or internal capital. Delayed payment to the producer was the most important "source" of operating capital in the Oklahoma sample, whereas the Bank for Cooperatives was the most important capital source in the Texas sample.

A relationship was found to exist between the operating capital requirement of a local association during times of peak cash requirements and five variables. The five variables are (1) annual volume of grain handled by the association, (2) total elevator storage capacity in thousands of bushels, (3) percentage of annual volume of grain purchased by the local at harvest, and (5) percentage of annual volume of grain sold by the

Table 10. Sources of Operating Capital Required by Local Cooperatives at a Point in Time When the Cash Requirement was Greatest in 1973, by Region

Region	Commercial Banks	Bank For Cooperatives	Interest Bearing Advances	Non-Interest Bearing Advances	Farmer Delivery of Grain Under Delayed Payment Arrangements	Internal Capital	Farmer Patron Loans	Total[1]
				Percent				
Oklahoma	6	25	1	1	57	9	0	99
Texas Plains	2	70	2	4	13	9	1	101
South Texas	3	73	0	0	19	5	0	100

[1]Data do not add to 100 because of rounding error.

local for immediate shipment. As all variables except number 5 increased, the peak operating capital needs of local associations on the average also increased. The operating capital requirement generally decreased by approximately $1,400 as the percentage of annual volume of grain sold by the local for immediate shipment increased one percentage point.

Substantial differences existed in the storage capacities and types of storage used by the sampled cooperatives in the different regions (Table 11). Note that Oklahoma cooperatives have predominantly upright storage, whereas the Texas Plains Cooperatives have a high percentage of capacity in flat storage. Flat storage is less expensive than upright storage and offers storage space for additional supplies (e.g., fertilizer, oil, tires and equipment) during the off-season.

Possibly more expansion of elevator facilities has occurred in the Texas Plains over the last two decades, which has resulted in more flat-storage facilities as opposed to the slip-form upright facilities because of those advantages just mentioned. In addition, Table 12 shows those differences in operating space used for grain storage by sampled local associations in 1973, by region. On a volume basis, the Texas Plains on the average used 12 times more operating space for grain storage than Oklahoma or South Texas. This can also be attributed to the larger percentage of flat storage in the plains than in the other regions.

Table 13 illustrates some major differences by region in the percentage of storage space occupied by grain owned by the cooperative and space occupied by grain that is not owned by the cooperative. An average of 11 percent of the grain storage space available to Oklahoma coop-

Table 11. Average Grain Storage Capacity Per Local Cooperative and the Percentage of Capacity According to Upright and Flat Storage, by Region, in 1973

Region	Storage Capacity		
	Average Per Association	Upright	Flat
	(Thou. bu.)	Percent	
Oklahoma	771	90	10
Texas	1,850	52	48
Texas Plains	2,062	47	53
South Texas	970	71	29

eratives, when grain on hand was greatest in 1973, was filled with grain owned by the association. The sampled cooperatives in the Texas Plains owned grain filling 30 percent of their grain storage space, but South Texas associations owned grain filling 78 percent of their grain storage space when grain on hand was greatest in 1973.

These differences in percentages of grain storage space containing grain owned by the cooperatives support earlier findings that South Texas associations contract a larger percentage of their grain than associations in the other two regions. However, all cooperatives on the average, regardless of region, had more than 90 percent of their owned grain under contract in 1973. In contrast, more than 80 percent of the grain storage space utilized by grain stored but not owned by the locals was held on an open basis. The percentages of grain storage space containing owned versus unowned grain stored by the local cooperative did vary somewhat according to the size of the cooperative. Except for South Texas, the larger cooperatives tended to contract more of their own grain (Table 14).

Table 12. Average Operating Space Used for Grain Storage Per Local Association in 1973 by Region and State

Utilization	*Oklahoma*	*Texas as a Whole*	*Texas Plains*	*Texas*
			bu.	
Operating Space	3,068	30,803	37,314	3,827

Table 13. Percentage Distribution of the Sampled Association's Grain Storage Capacities According to Local Cooperative Grain Ownership and Title Arrangements, by Region[1]

Utilization	*Oklahoma*	*Texas Plains*	*South Texas*
1. Grain owned by the local association:	11	30	78
a. Hedged	0	1	0
b. Unhedged and Uncontracted	6	4	7
c. Contracted	94	95	93
Total of Grain Owned	*100*	*100*	*100*
2. Grain not owned by the local association:	89	70	22
a. Warehouse receipted	14	9	17
b. Open	81	83	83
c. Grain Bank	2	1	
d. C.C.C.C.	[2]	4	
e. Terminal or Processor	3	3	
Total of Grain Not Owned	*100*	*100*	*100*
Total of All Grain	*100*	*100*	*100*

[1]These data refer to the point in time when grain on hand was greatest in 1973.
[2]C.C.C. accounts for less than 1 percent of the storage space utilized by grain not owned by the cooperative.

Table 14. Distribution of the Sample Association's Grain Percentage Storage Capacities According to Local Cooperative Grain Ownership and Title Arrangements by Region, 1973[1]

		Oklahoma					Texas Plains					South Texas				
		Size Group					Size Group					Size Group				
		1	2	3	4	5	1	2	3	4	5	1[2]	2	3	4	5
		Percent														
Grain Owned by the Cooperative	Hedged										[3]					
	Unhedged, and Uncontracted			[3]	2	[3]		18	2	8	[3]		11		20	2
	Contracted		5	4	12	13		7	15	17	30		85	71	60	74
Grain Not Owned by the Cooperative	Warehouse Receipted		3	22	3	14			1	[3]	7			4		5
	Open	80	88	64	71	71	100	76	82	60	57		4	25	20	19
	Grain Bank		[3]	3	4	[3]					[3]					
	C.C.C.		[3]	[3]	[3]					3	3					
	Terminal Processor	20		5	8					11	2					
Totals		100	100	100	100	100	100	100	100	100	100		100	100	100	100

[1]These data refer to the point in time when grain on hand was greatest in 1973. The size groups are defined as follows:

Size Group	*Storage Capacity (bu.)*
1	less than 100,000
2	100,000 to 399,999
3	400,000 to 599,999
4	600,000 to 999,999
5	1,000,000 and greater

[2]South Texas had no sample locals in group one.
[3]Less than one percent.

Sale of Local Cooperative Grain

This section is devoted to a discussion of the sale of local cooperative purchased grain — the methods involved, gross margins received, protection against risk of price change, and grain commitment to the regional cooperative.

Texas and Oklahoma local cooperatives sell grain to many different independent grain firms as well as to regional grain cooperatives. Two of the important regional grain cooperatives in the area are Producers Grain Corporation of Amarillo, Texas, and Union Equity of Enid, Oklahoma.

Existing Market Patterns

One of the most important areas of interest in cooperative grain marketing is the commitment[2] of grain to the regional cooperative. Figure 1 illustrates the local associations' percentage commitment of grain in 1973 to the regional cooperatives in Oklahoma and Texas, along with the number of local associations marketing each grain. All local associations have been doing business with their respective regional for over 25 years, except for the sale of soybeans in the Texas Plains. Local associations in the Texas Plains have been marketing soybeans, a relatively new cash crop to the area, for an average of 15 years. South Texas was not shown separately in Figure 1 since those local associations only marketed grain sorghum; 72 percent of this grain sorghum was committed to the regional in 1973.

Figure 1 shows that 95 percent and 74 percent of the wheat handled by Oklahoma and Texas Plains sampled local associations, respectively, were committed to the regional cooperative. However, Texas Plains local cooperatives far exceeded Oklahoma cooperatives in their percentage commitment of the other five grains to the regional cooperative.

The percentage of grain committed to the regional cooperative generally decreased on the average, particularly for Oklahoma cooperatives, as the size of the local associations increased (Table 15).

Marketing practices, distance to market, and many other factors affect the gross margins received in the sale of grain. Table 16 illustrates gross margins received by the local for the various grains, along with the number of local associations dealing with each grain in each region. The gross margins were very similar between regions except for wheat and soybeans. On the average, Oklahoma local associations received 18.8 cents per bushel as gross margin for wheat whereas Texas Plains sampled local associations received 27.1 cents per bushel. And Oklahoma and the Texas

[2]The word commitment is used in this report to mean the marketing of grain from local to regional cooperatives, and does not necessarily imply a formal contractual arrangement.

Plains associations, on the average, received 32.7 cents and 25.8 cents per bushel, respectively, for soybeans. Wide variations in gross margins are prevalent according to size of the local cooperatives. When a trend was apparent in the gross margins by size of cooperative, the lower gross margins were usually associated with the smaller size cooperatives, e.g., the Texas Plains wheat gross margins increased with cooperative size (Table 17).

The method of price protection most commonly used by grain association management was the sale of a cash contract with the regional cooperative or other grain firms (Table 18). The use of futures market hedging was reported by only two associations in Oklahoma. The lack of hedging in the futures market may be due to a lack of information about

Table 15. The Average Percentage of the Total Grain Volume Handled by Local Associations Committed to Regional Cooperatives in 1973 by Grain, Group, and State[1]

	Size Group				
Grain	*1*	*2*	*3*	*4*	*5*
			(Percent)		
OKLAHOMA:					
Wheat	100	99	99	91	89
Sorghum				3	10
Barley			10	52	10
Corn					
Soybeans					
Oats				52	
TEXAS:					
Wheat	92	70	74	45	76
Sorghum	85	25	62	80	55
Barley	100				100
Corn				80	56
Soybeans				50	40
Oats	85		99		100

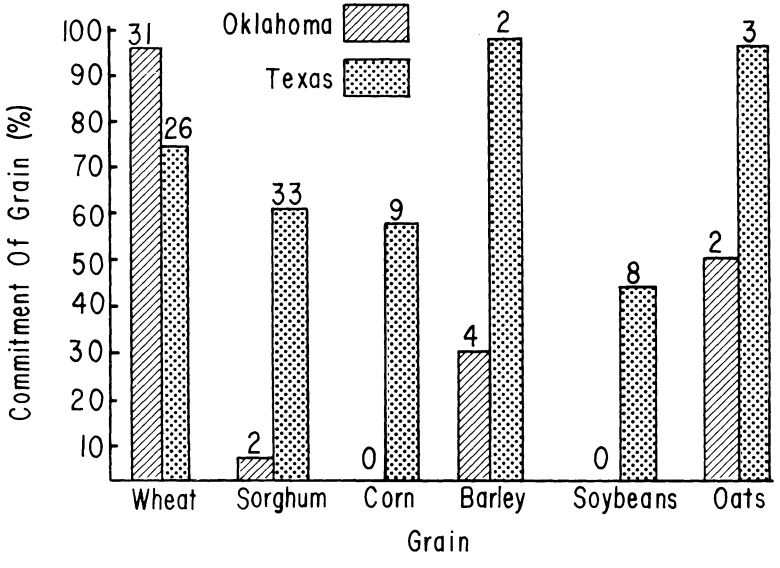
[1]The groups are defined as follows:

Group	*Grain Storage Capacity (bu.)*
1	less than 100,000
2	100,000 to 399,999
3	400,000 to 599,999
4	600,000 to 999,999
5	1,000,000 and greater

Table 16. Average Gross Operating Margins and the Number of Local Associations Marketing Each Grain in 1973, by Region

Location	*Wheat*	*Sorghum*	*Corn*	*Barley*	*Soybeans*	*Oats*
			Cents			
Oklahoma (31)[1]	18.8 (31)	16.0 (20)	16.1 (8)	22.5 (27)	32.7 (4)	18.4 (22)
Texas						
Plains (29)	27.1 (28)	20.0 (26)	20.3 (12)	20.4 (10)	25.8 (13)	14.3 (6)
South Texas (7)	(0)	15.3 (7)	(0)	(0)	(0)	(0)

[1]Numbers in parentheses indicate the number of local associations marketing respective grains.



The Average Percentage of Grain Volume Handled by Local Associations Committed to Regional Cooperatives in 1973, by Grain and State. The numbers within the bar graph refer to the number of sampled local cooperatives involved in that grain. For grains other than grain sorghum in Figure 1, Texas Plains is the appropriate region for Texas since South Texas sampled cooperatives only market grain sorghum.

the operations of the futures market, the margin requirements associated with futures market trading, and/or restriction in the firms' bylaws. However, cooperative association managers indicated that forward contracting with another grain firm offered more security than hedging in the futures market.

Various methods of selling grain can be used by local cooperative grain elevators. They can (1) retail grain back to farmers for feed or as whole grain, (2) sell to a grain merchandiser at an agreed price with delivery stipulations at specified time periods, (3) pool their grain, or (4) consign their grain.[3] No grain pooling or consignment methods, however, were employed by any sampled associations. Tables 19, 20, and 21 illustrate for the three regions that in 1973 most grain was sold according to a target delivery contract, i.e., an agreed price with specified delivery periods. Oklahoma and the Texas Plains sampled associations sold wheat in a similar manner, however, a greater percentage of grain sorghum sold in Oklahoma was sold to farmers (89 percent) than was the case in the

[3]Consignment grain sales refer to grain sales on a commission basis.

Table 17. Local Elevator Margins Received by Local Associations in Marketing Grain in 1973, by Size of Firm, Region, and Grain[1]

Size Group[2]	Wheat	Sorghum	Barley	Corn	Soybeans	Oats
			cents/bu.			
			Oklahoma			
1	27(2)	10(2)				
2	15(7)	18(2)	21(6)	15(1)		16(4)
3	18(7)	9(4)	17(6)	15(2)	20(1)	16(6)
4	22(8)	23(6)	34(8)	21(3)	33(6)	26(7)
5	17(7)	15(6)	15(7)	10(2)	7(3)	13(5)
			Texas Plains			
1	14(3)	10(2)	10(2)			10(2)
2	16(2)	12(2)				
3	20(4)	26(3)	44(1)	28(1)	29(1)	18(2)
4	20(2)	16(2)	22(1)	15(1)	32(1)	
5	33(17)	21(17)	20(6)	20(10)	25(11)	15(2)
			South Texas			
1						
2		15(2)				
3		7(1)				
4		14(1)				
5		19(3)				

[1]Data in parentheses pertain to the number of cooperatives involved.
[2]The groups are defined as follows:

Group	*Grain Storage Capacity (bu.)*
1	less than 100,000
2	100,000 to 399,999
3	400,000 to 599,999
4	600,000 to 999,999
5	1,000,000 and greater

Table 18. Number of Sampled Local Cooperatives Using Price Protection Methods in 1973, by Region

	Oklahoma	*Texas Plains*	*South Texas*
1. No method	1	1	0
2. Hedge in the futures market	2	0	0
3. Sell a cash contract with another grain firm	12	18	6
4. Other[1]	0	1	0
Total Reporting	*15*	*20*	*6*

[1]The other method referred to here is selling a cash contract with a feedlot.

Texas Plains (20 percent), or South Texas (1 percent). This difference in producer grain sorghum buying can be attributed to differences in production levels of grain sorghum in these three regions, i.e., on the average Oklahoma, the Texas Plains, and South Texas local associations marketed 59,321, 978,022 and 1,210,969 bushels of grain sorghum, respectively, in 1973.

Table 19. Percentages of Grain Sold by Various Methods Used by Oklahoma Local Cooperatives in 1973, by Grain

Method of Sales	Wheat	Sorghum	Corn	Barley	Soybeans	Oats
			Percent			
1. Retailed back to farmers as whole grain or in feed	[1]	89	100	84	0	86
2. Sold at agreed price for shipment:						
(1) Immediately (on track or to arrive), up to 15 days	56	7	0	5	75	3
(2) 15 to 30 days	12	0	0	8	8	3
(3) After 30 days	28	3	0	2	17	7
3. Other[2]	3	0	0	0	0	1
Total[3]	*99*	*99*	*100*	*99*	*100*	*100*

[1]Less than 1 percent
[2]The other methods of sales referred to here are: (1) stored with the regional cooperative, (2) sold at agreed price for shipment with no time stipulation, and (3) grain bank.
[3]Columns of data may not add to 100 because of rounding error.

Table 20. Percentages of Grain Sold by Various Methods Used by Texas Plains Local Cooperatives in 1973, by Grain

Method of Sales	Wheat	Sorghum	Corn	Barley	Soybeans	Oats
			Percent			
1. Retailed back to farmers as whole grain or in feed	4	20	4	39	6	62
2. Sold at agreed price for shipment:						
(1) Immediately (on track or to arrive), up to 15 days	59	16	32	27	43	28
(2) 15 to 30 days	25	19	25	0	14	0
(3) After 30 days	12	46	38	34	36	10
3. Other	0	0	0	0	0	0
Total[1]	*100*	*101*	*99*	*100*	*99*	*100*

[1]Columns of data may not add to 100 because of rounding error.

Existing Coordinating Arrangements

This section is devoted to the coordination of services, informational programs and competitive decision factors that exist between the local and regional cooperative. Emphasis is placed on the availability of regional cooperative services, their importance and use. Also discussed is the influence which certain marketing decision factors have on local managers' decisions as to whom he markets his grain and the performance of the regional with respect to these decision factors.

Table 21. Percentages of Grain Sold by Various Methods Used by South Texas Local Cooperatives in 1973, by Grain

Method of Sales	*Wheat*	*Sorghum*	*Corn*	*Barley*	*Soybeans*	*Oats*
			Percent			
1. Retailed back to farmers as whole grain or in feed		1				
2. Sold at agreed price for shipment:						
(1) Immediately (on track or to arrive), up to 15 days		21				
(2) 15 to 30 days		42				
(3) After 30 days		36				
3. Other		0				
Total		*100*				

Table 22. The Availability of Various Marketing Services from the Regional, Whether the Service is Free, and it's Frequency of Use by 36 Texas Local Cooperatives in 1973

	Is Service Available?			*Is Service Free?*			
	Yes	*No*	*Don't Know*	*Yes*	*No*	*Don't Know*	*Average Frequency of Use*[1]
	Frequency of Response			*Frequency of Response*			*Percent of Time*
1. Rail car scheduling	10	22	4	10	0	0	34 (7)
2. Truck scheduling	15	18	3	15	0	0	46 (10)
3. Barge scheduling	0	32	4	--	-	-	-- (0)
4. Advice on rail freight rates and tariffs	28	7	1	28	0	0	91 (22)
5. Market information	35	1	0	35	0	0	92 (35)
6. Brokerage services	10	22	4	7	1	2	100 (3)
7. Grain hedging services	8	22	6	4	3	1	100 (2)
8. Auditing and/or billing services	9	23	4	5	3	1	100 (4)
9. Financial planning assistance	16	15	5	14	0	2	69 (9)
10. Assistance with stock and bond sales and credit procurement	10	18	8	9	1	0	33 (7)
11. Investment opportunities	17	16	3	17	0	0	29 (9)
12. Engineering assistance	12	21	3	11	1	0	67 (6)
13. Public relations assistance	25	9	2	25	0	0	83 (19)
14. Management and personnel training programs	18	14	4	11	7	0	52 (14)
15. Board of director development programs	18	17	11	18	0	0	69 (15)
16. District informational meetings directed toward your problems and needs	31	5	0	31	0	0	84 (29)
17. District informational meetings directed toward the regional's operation	33	3	0	32	1	0	85 (31)

[1]The numbers in parentheses refer to the number of managers using the service.

Marketing Services

The number and quality of marketing services provided the local cooperative by the regional cooperative is directly associated with the coordination of grain marketing between the local and regional cooperatives. Managers of local cooperatives were presented a list of marketing services and were asked whether the service was available to them, and if available, was it free (Tables 22 and 23). Also, those managers who said the services were available were asked to what extent they used the services. An area of interest here is the differences of opinions between managers in each state as to the availability of the services. For example, 22 managers of local cooperatives in Texas (Table 22) felt that grain hedging services were not available and six managers did not know. Of those

Table 23. The Availability of Various Marketing Services from the Regional, Whether the Service is Free, and it's Frequency of Use by 31 Oklahoma Local Cooperatives, in 1973

	Is Service Available?			*Is Service Free?*			
	Yes	*No*	*Don't Know*	*Yes*	*No*	*Don't Know*	*Average Frequency of Use*[1]
	Frequency of Response			*Frequency of Response*			*Percent of Time*
1. Rail car scheduling	8	20	3	8	0	0	54 (7)
2. Truck scheduling	27	4	0	27	0	0	65 (21)
3. Barge scheduling	2	26	3	2	0	0	-- (0)
4. Advice on rail freight rates and tariffs	27	2	0	29	0	0	97 (28)
5. Market information	31	0	0	31	0	0	98 (31)
6. Brokerage services	26	2	3	10	10	6	34 (8)
7. Grain hedging services	25	1	5	11	7	7	3 (2)
8. Auditing and/or billing services	22	8	1	6	15	1	72 (8)
9. Financial planning assistance	16	11	4	12	3	1	72 (6)
10. Assistance with stock and bond sales and credit procurement	9	14	8	7	0	2	70 (3)
11. Investment opportunities	29	1	1	25	1	3	52 (20)
12. Engineering assistance	13	12	6	12	0	1	30 (6)
13. Public relations assistance	27	3	1	25	1	1	73 (25)
14. Management and personnel training programs	22	6	3	12	9	1	74 (19)
15. Board of director development programs	22	6	3	20	2	0	84 (18)
16. District informational meetings directed toward your problems and needs	28	2	1	27	0	1	91 (27)
17. District informational meetings directed toward the regional's operation.	30	1	0	30	0	0	86 (30)

[1]The numbers in parentheses refer to the number of managers using the service.

eight managers responding that the regional provided grain hedging services, four felt the service was free and two managers used it 100 percent of the time.[4]

Oklahoma managers exhibited similar differences in their information on regional cooperative services. Responses to item 1, rail car scheduling, in Table 23, reveal that 20 Oklahoma cooperative managers who were sampled, believed this service was not available. Eight indicated that this service was available, and three did not know. All eight of those managers stating that this service was available felt that the service was free. Seven managers used rail car scheduling an average of 54 percent of maximum.

Responses to item 15 in Table 23 reveal that 22 Oklahoma cooperative managers felt that board of director development programs were available from the regional cooperative. Six managers stated that this service was not available and three did not know. Of those 22 managers stating the service was available, 20 felt that the service was free and two said it was not free. Eighteen of the managers used the service an average of 84 percent of maximum.

The percentage of local managers interviewed who stated that the services outlined above were available from their regional cooperative

Table 24. Percentage of Sampled Cooperatives Signifying an Availability of Regional Cooperative Services to Local Cooperatives, by State, in 1973

		Oklahoma	*Texas*
		Percent	
1.	Rail car scheduling	26	28
2.	Truck scheduling	87	42
3.	Barge scheduling	6	0
4.	Advice on rail freight rates and tariffs	94	78
5.	Market information	100	97
6.	Brokerage services	84	28
7.	Grain hedging services	81	22
8.	Auditing and/or billing services	71	25
9.	Financial planning assistance	52	44
10.	Assistance with stock and bond sales and credit procurement	29	28
11.	Investment opportunities	94	47
12.	Engineering assistance	42	33
13.	Public relations assistance	87	69
14.	Management and personnel		
14.	Management and personnel training programs	71	50
15.	Board of director development programs	71	50
16.	District informational meetings directed toward your problems and needs	90	86
17.	District informational meetings directed toward the regional's operation	97	92

[4]The frequency of use is expressed as a percentage of the maximum that the manager could have used the service.

varied by state (Table 24). For instance, 87 percent and 42 percent of the Oklahoma and Texas managers, respectively, responded that truck scheduling is provided by their regional cooperative. The importance of these percentages in Table 24 was clarified during interviews with management personnel of regional cooperatives. During these interviews, it was confirmed which of those services listed in Table 24 were available from regional cooperatives in Oklahoma and Texas. Among the services provided by both regional cooperatives are rail car and truck scheduling.

Sixty-four percent and 61 percent of the sampled local cooperatives in Oklahoma and Texas respectively, were not aware of the rail car scheduling services provided by each regional cooperative. Thirteen percent and 50 percent of the sampled local cooperatives in Oklahoma and Texas, respectively, were not aware of the truck scheduling services provided by each regional cooperative. Generally, for services other than rail car and truck scheduling, sampled local cooperatives indicated that more services were provided by regional cooperatives in each state than were actually offered. (Percentages are based on data in Tables 22 and 23.)

Each manager rated each item in the list of services according to their importance in 1973 and expected importance in 1978, using a 1-99 scale with 99 signifying the highest possible score of importance and 1 the least (Table 25). On the average, all managers interviewed felt that the services listed will increase in importance from 1973 to 1978, with possible exceptions of barge scheduling (especially in Texas) and market information. These services were ranked extremely unimportant and extremely important, respectively.

Marketing Decision Factor

Besides the regional cooperative services just mentioned, local cooperatives have other criteria to consider when deciding with whom and how they market their grain. Factors such as price, premiums and discount practices, and time and manner of payment to the local are not services as such, but are means by which grain buying firms compete for local association grain.

The local association managers in the sample rated each of seventeen marketing factors as to the importance of the factor in determining with whom the local grain cooperative marketed its grain in 1973 and the importance which local managers expected each of these factors to have in 1978. The managers also rated performance of the regional cooperative as to how well it performed with respect to the competitive decision factors in 1968 and 1973 so that any improvement in performance from 1968 to 1973 could be determined.

Each of these 17 marketing factors were rated using the 1-99 scale, with 99 signifying the highest possible rating as to the importance of

Table 25. The Mean Scores of Importance to Local Cooperative Managers of Various Region Cooperative Marketing Services in 1973 and Expected in 1978 by Region[1]

Areas of Service	Oklahoma 1973	Oklahoma 1978	Texas Plains 1973	Texas Plains 1978	South Texas 1973	South Texas 1978
1. Rail car scheduling	45	60	68	74	12	32
2. Truck scheduling	64	74	50	58	32	51
3. Barge scheduling	36	43	14	14	9	9
4. Advice on rail freight rates and tariffs	82	83	76	80	15	37
5. Market information	95	95	98	98	89	96
6. Brokerage services	28	37	20	21	33	35
7. Grain hedging services	23	38	6	12	22	63
8. Auditing and/or billing services	45	49	34	37	26	33
9. Financing planning assistance	50	60	48	52	32	58
10. Assistance with stock and bond sales and credit procurement	39	44	18	20	36	42
11. Investment opportunities	41	44	5	5	17	29
12. Engineering assistance	24	41	25	26	30	49
13. Public relations assistance	50	58	56	59	48	70
14. Management and personnel training programs	49	62	49	50	44	70
15. Board of director development programs	50	59	52	54	42	63
16. District informational meetings directed toward your problems and needs	67	73	72	73	63	70
17. District informational meetings concerning the regional's operations	77	78	72	73	63	70

[1]The numbers originated from a 1-99 rating scale with a 99 rating signifying the highest possible importance.

the factor. Rating means for the 12 highest rated factors are given in Tables 26, 27, and 28 for Oklahoma, Texas Plains, and South Texas local cooperatives, respectively. In general, these 12 decision factors remained important and influential to the managers' decision making processes and increased in importance in 1973 to 1978 with one exception. Managers expected that the size of the dividends, patronage refunds and investment opportunities may be slightly less important in 1978 in influencing with whom the local grain cooperative markets its grain in 1978.

Further analysis of these tables reveals that according to those local managers that were interviewed, the regional cooperative tended to perform well in providing those decision factors that were most influential to the managers' marketing decisions. Although the relative importance of a factor in determining with whom the local grain cooperative marketed its grain is not expected to change from 1973 to 1978, the regionals' performance in providing these services has not improved appreciably from 1968 to 1973.

Table 26. Mean Scores for Both the Influence Levels in 1973 and Expected in 1978 of Selected Factors on Local Managers Marketing Decisions, and the Respective Performance Level of the Regional, on These Decision Factors in 1968 and 1973, Oklahoma Region[1]

Decision Factors	*Influence on Marketing Decisions*		*Performance of the Regional on These Decision Factors*	
	In 1973	*Expected In 1978*	*In 1968*	*In 1973*
1. Price	71.5	75.7	86.8	90.2
2. Source of Market Information	74.8	77.7	87.8	90.3
3. Cooperative Loyalty	76.8	77.6	79.2	79.0
4. Source of Frequent and Consistent Bids	72.9	76.6	89.3	90.4
5. Contractual Arrangements for Cash Grain Delivery	78.3	80.5	82.6	79.5
6. Time and Manner of Payment to the Local	71.9	73.3	85.6	72.3
7. Weights and Measures	66.9	68.2	80.1	78.2
8. Regional Personnel Expertise	70.3	77.5	82.4	89.2
9. Terminal Processor Facilities	72.9	75.2	90.0	91.1
10. Premium and Discount Practices	47.5	53.9	67.1	59.8
11. Size of Dividends, Patronage Refunds and Investment Opportunities	54.1	52.9	54.6	77.6
12. All Transportation Services	62.9	64.5	73.0	70.3

[1]These numbers originated from the 1-99 scale, with 99 signifying most influential or best possible performance.

Table 27. Mean Scores for Both the Influence Levels in 1973 and Expected in 1978 of Selected Factors on Local Managers Marketing Decisions, and the Respective Performance Level of the Regional, on These Decision Factors in 1968 and 1973, Texas Plains Region[1]

Decision Factors	*Influence on Marketing Decisions*		*Performance of the Regional on These Decision Factors*	
	In 1973	*Expected In 1978*	*In 1968*	*In 1973*
1. Price	86.3	87.4	81.0	79.9
2. Source of Market Information	72.6	78.7	81.4	81.5
3. Cooperative Loyalty	70.4	80.4	79.8	74.6
4. Source of Frequent and Consistent Bids	71.4	76.7	82.0	81.7
5. Contractual Arrangements	60.6	64.6	80.9	80.2
6. Time and Manner of Payment of the Local	67.1	73.6	85.0	86.4
7. Weights and Measures	55.7	55.7	84.8	82.4
8. Regional Personnel Expertise	63.3	65.6	77.1	79.5
9. Terminal Processor Facilities	48.2	50.1	85.7	80 6
10. Premium and Discount Practices	63.7	65.2	71.4	72.8
11. Size of Dividends, Patronage Refunds and Investment Opportunities	44.8	50.1	55.8	63.7
12. All Transportation Services	43.4	45.7	55 4	54.5

[1]These numbers originated from the 1-99 scale, with 99 signifying most influential or best possible performance.

Table 28. Mean Scores for Both the Influence Levels in 1973 and Expected in 1978 of Selected Factors on Local Managers Marketing Decisions, and the Respective Performance Level of the Regional, on These Decision Factors in 1968 and 1973, South Texas Region[1]

Decision Factors	Influence on Marketing Decisions		Performance of the Regional on These Decision Factors	
	In 1973	Expected In 1978	In 1968	In 1973
1. Price	69.3	72.1	71.3	74.1
2. Source of Market Information	68.7	70.9	78.4	81.3
3. Cooperative Loyalty	68.6	74.3	68.6	65.7
4. Source of Frequent and Consistent Bids	71.4	72.1	81.1	84.0
5. Contractual Arrangements for Cash Grain Delivery	76.9	81.1	84.0	84.0
6. Time and Manner of Payment to the local	76.9	76.9	78.0	85.1
7. Weights and Measures	57.1	57.1	72.7	84.1
8. Regional Personnel Expertise	73.4	74.0	74.0	74.0
9. Terminal Processor Facilities	61.4	69.3	66.4	59.3
10. Premium and Discount Practices	44.4	47.3	58.6	62.9
11. Size of Dividends, Patronage Refunds and Investment Opportunities	81.1	82.6	75.4	76.9
12. All Transportation Services	33.0	34.4	54.3	52.9

[1]These numbers originated from the 1-99 scale, with 99 signifying most influential or best possible performance.

Table 29. Rankings of Marketing Factors According to Influence on Managerial Marketing Decisions in 1973, by Region

Marketing Factors	Oklahoma	Texas Plains	South Texas	All Regions Combined[1]
1. Price	7	1	6	1
2. Source of market information	3	2	7	2
3. Cooperative loyalty	2	4	8	3
4. Source of frequent and consistent bids	5	3	5	4
5. Contractual arrangements for cash grain delivery	1	8	2	5
6. Time and manner of payment to the local	6	5	3	6
7. Weights and measures	9	9	11	7
8. Regional personnel expertise	8	7	4	8
9. Terminal processor facilities	4	10	9	9
10. Premium and discount practices	15	6	12	10
11. Size of dividends, patronage refunds and investment opportunities	12	11	1	11
12. All transportation services	10	12	14	12

[1]Rankings of all regions combined are weighted by the number of local cooperatives in each region.

Table 29 shows the rankings of these 12 factors for each region according to the factors' influence on marketing decision, and the ranking of all regions combined, with a rank of one being the most influ-

ential. In general, there was little difference between regions in the ranking of these factors. All three regions, combined, selected price as the highest ranking marketing factor according to the influence on managerial marketing decisions in 1973. Other marketing factors in a sequentially lower order of ranking are source of market information, cooperative loyalty, source of frequent and consistent bids, and contractual arrangements for cash grain delivery.

Summary and Conclusions

The cooperative grain marketing system is designed to benefit agricultural producers who deal with and support their local cooperatives. Thus, any improvement in the efficiency with which local and regional cooperatives operate will not only benefit the cooperatives involved, but also the producer-owners of the business. Increasing the marketing efficiency at one level of the system, however, does not necessarily increase the efficiency of the marketing system as a whole. Information concerning the nature, implications, and potentials of closer vertical coordination among grain marketing cooperatives and their members is not available in sufficient quantities. Thus, a need prevails for research which includes at least two levels of the cooperative grain marketing system. Only then can more realistic conclusions be drawn which conform to the basic idea that systems research, as opposed to research of only one marketing level, might offer insights for improved coordinating relationships between marketing levels, thereby increasing grain cooperative member returns.

Summary

The objectives of this research were (1) to describe existing marketing practices and patterns of local cooperatives in Texas and Oklahoma, (2) to describe coordinating arrangements between local cooperative grain elevators and the regional cooperatives with whom they sell grain, and (3) to investigate those possibilities and potentials which may exist or can be developed that would enable grain marketing cooperatives to increase producer returns through closer vertical coordination with the cooperative grain marketing system.

Because of the large population and the large variation in size of local grain cooperatives in Oklahoma and Texas, a random sample, stratified according to storage capacity size, and by state, was selected to represent the grain cooperative population. The managers of local cooperatives in the sample were personally interviewed concerning their operation and their relationship with the regional cooperative through which they sold grain. The questionnaire used in their interviews was designed to extract information pertaining to marketing patterns and the

coordination of marketing services and decision factors between local and regional grain cooperatives. The data were then processed for the computer to facilitate simple statistical and accumulative analyses.

The source of operating capital varied by location with Bank for Cooperatives and farmers delivering grain under delayed payment arrangements being the most often used sources. A larger percentage of grain is forward contracted by South Texas sampled associations than sampled associations in the other two regions.

Ninety-five percent and 74 percent of the wheat marketed by the Oklahoma and Texas sampled managers, respectively was committed to the regional cooperative. Oklahoma, Texas Plains, and South Texas interviewed managers committed six percent, 58 percent, and 72 percent respectively, of their grain sorghum to the regional. Oklahoma associations received an average of 18.8 cents gross margin per bushel when marketing wheat while Texas Plains associations on the average received 27.1 cents per bushel. Sampled managers rely on cash contracts with another grain firm as their primary method to protect themselves against risk of adverse price fluctuations. Most local cooperative marketed grain is sold at an agreed price for shipment within 15 days.

Large discrepancies exist between managers as to the availability of services originating from the regional cooperative. For example, 61 percent of the sampled managers of local cooperatives in Texas felt that grain hedging services were not available. Sixty-four and one-half percent of the sampled managers of local cooperatives in Oklahoma believed that rail car scheduling services were not offered by their regional cooperative. The relative importance of those services studied, as a whole, was similar between regions. All managers interviewed felt that services, as a whole, would become more important in the future with exceptions of barge scheduling (especially in Texas), and market information.

The sampled managers were in consistent agreement about the types of marketing factors to which they rely on to determine with whom they market their grain. The regional cooperative, according to the managers, tended to focus upon the factors which local association managers indicated were most important to their decision making in selling grain.

Conclusions

Discrepancies are prevalent at the local cooperative association level as to the knowledge of the availability of certain marketing services from the regional cooperative. A possible explanation of this is a lack of coordination between the two levels in rendering and accepting marketing services.[5] As local association managers receive more information on

[5]Another explanation is a possible misinterpretation during the interview of the questions pertaining to this issue.

market forces and relationships, new grain transfer methods, regional contractual arrangements, hedging operations and other services, all of which the regionals may provide, they can more efficiently manage modern cooperative grain marketing businesses.

A lack of knowledge concerning regional operations and services at the producer level may give rise to the leakage of grain out of the cooperative grain marketing system. If local managers are not aware of the many benefits of cooperative grain marketing accruing from various services of regional cooperatives, then the full benefits of cooperative grain marketing may not be explicitly apparent to grain producers. With this possibility in mind a tighter more highly coordinated system could increase cooperative members' returns through improved bargaining power by committing through the local and regional cooperative a larger percentage of the total production of grain.

The six most important criteria involved in a local grain cooperative association's decision of with whom the association markets its grain are such marketing decision factors as the price of the commodity under consideration, market information, cooperative loyalty, the source of frequent and consistent bids, contractual arrangements for cash grain delivery, and time and manner of payment to the local. It appears that regional performance in providing these marketing decision factors as a group has not improved in the eyes of those managers interviewed, even though the importance of these decision factors has basically been the same for the time horizon considered in this study. The regional grain cooperatives can become more viable and competitive in the market place, particularly with respect to price and contractual arrangement, and thereby provide for the cooperative grain marketing system to be increasingly appealing to member locals, member producers, and prospective members.

Local cooperative management will place increasing importance in the future on certain services from the regional cooperative. Included are grain hedging services, advice on rail freight rates and tariffs, and scheduling. In addition, advanced financial planning and engineering assistance; high quality informational meetings aimed at improving the expertise of local management, personnel and members of the board of directors, and intricate truck scheduling assistance will be sought by local cooperative grain association managers. Since some local cooperatives use services available as a criteria for the amount of grain they will commit to the regional, it may be beneficial to the regionals to provide more information about those services they offer and their cost to locals.

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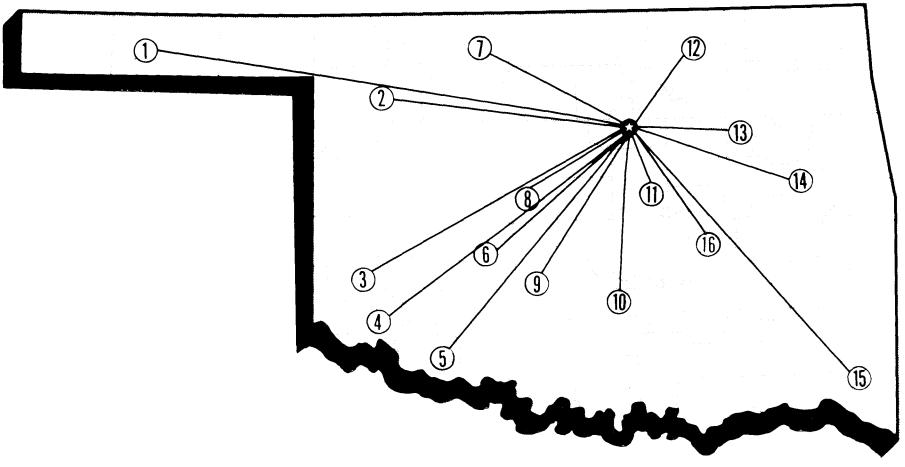
OKLAHOMA

Agricultural Experiment Station

System Covers the State



Main Station — *Stillwater, Perkins and Lake Carl Blackwell*

1. Panhandle Research Station — *Goodwell*
2. Southern Great Plains Field Station — *Woodward*
3. Sandyland Research Station — *Mangum*
4. Irrigation Research Station — *Altus*
5. Southwest Agronomy Research Station — *Tipton*
6. Caddo Research Station — *Ft. Cobb*
7. North Central Research Station — *Lahoma*
8. Southwestern Livestock and Forage Research Station — *El Reno*
9. South Central Research Station — *Chickasha*
10. Agronomy Research Station — *Stratford*
11. Pecan Research Station — *Sparks*
12. Veterinary Research Station — *Pawhuska*
13. Vegetable Research Station — *Bixby*
14. Eastern Pasture Research Station — *Muskogee*
15. Kiamichi Field Station — *Idabel*
16. Sarkeys Research and Demonstration Project—*Lamar*