An Educational Framework From Which to View Extension Programs for Small-Farm Families in Southern Illinois.

Francis Lyle Brewer

Louisiana State University and Agricultural & Mechanical College

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AN EDUCATIONAL FRAMEWORK FROM WHICH TO VIEW EXTENSION PROGRAMS FOR SMALL-FARM FAMILIES IN SOUTHERN ILLINOIS

The Louisiana State University and Agricultural and Mechanical Col.

PH.D. 1979
AN EDUCATIONAL FRAMEWORK
FROM WHICH TO VIEW EXTENSION
PROGRAMS FOR SMALL-FARM FAMILIES
IN SOUTHERN ILLINOIS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
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in

The Department of Extension Education

by

Francis Lyle Brewer
B.S., University of Illinois, 1969
M.S., University of Illinois, 1972
December 1979
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ABSTRACT

The central purpose of this descriptive study was to develop a socio-economic profile of small-farm families in the fifteen southern counties of Illinois, Extension Region X. The study also reviews existing work by the Cooperative Extension Service with small-farm families in selected states. From this base, a model was developed for the implementation of an educational program for small-farm families in Southern Illinois.

Data was solicited in face-to-face interviews with 100 randomly selected small-farm operators residing in Southern Illinois. In the study, small-farm operators were farmers grossing less than $20,000 per year from farm income. Two and one fourth percent of all small-farm operators in the fifteen county area of Illinois Extension Region X were included in the sample.

Statistical analysis of the data, included procedures to determine differences in the sample on the basis of employment off the farm. Farming practices, management decisions, size of operation, marketing, sources of income, farm goals, farm limitations, use of governmental agencies, and other socio-economic characteristics were the independent variable.

Frequencies were determined for all items for general comparisons. The chi-square test of independence was employed in determining differences between the small-farm operators within three groups. These groups were full-time farmers, who had worked off the farm ten days or less; part-time farmers, who had worked off the farm more than ten
days, but less than 150 days, and; dual-occupation farmers, who worked off the farm 150 days or more. In order that the data convey the extent of association of the significant variables, the .05 level of probability was considered statistically significant.

FINDINGS

The study of small-farm operators in Illinois Extension Region X resulted in the following findings:

1. Small-farm operators are engaged in diverse types of farm production, and most have income from all sources above the poverty level.

2. The use of professional staff, para-professionals, and volunteers with a close, personal relationship between the staff and client have been successful.

3. Risk perception and risk aversion were major performance criteria in determining how the small-farm operator would react to potential means of improving his standard of living.

4. Small-farm operators were not favorable to highly-variable technologies in the short run, even though, income might be high over the long run.

5. The magnitude of the output realized by small-farm operators was dependent upon the production system, the market system, family consumption, and risk aversion.

6. Most small-farm operators were not striving towards commercial scale farm operations.
Chapter 1

The plight of the small American farmer has been discussed and debated much in recent years by farm and city folk alike. For some, it is a matter of nostalgia: the "decline" of the small farm represents the passing of a simple--somehow, more wholesome--way of life. For others, it is a matter of economics: the small farm is simply not an efficient production unit and is destined to go the way of the "Mom and Pop" grocery store. Few deny, however, that the economic and social problems facing small farmers are serious and demand careful thought and attention.

During the past forty years, the United States has moved to a highly-mechanized, technologically-advanced and highly productive agricultural sector, based on the results of agricultural research, extension education and the commercialization of farming operations. While this transformation has provided an abundant food supply for our people and has enabled some farm operators to expand and prosper, many farm families have been "left behind" in this movement and are characterized by low incomes and limited resources. In our nation's attempt to revitalize our rural areas and to alleviate rural poverty, programs have been developed to assist those farm families who lie outside the mainstream of the commercial agricultural sector.

One type of program on which this study focuses is education to improve farm family income, by helping small farmers to learn and adopt improved management practices, intensified methods of operation and new farm enterprises. These programs have often been
based on the use of intensive, one-to-one contact between the program personnel and individual farmers.

The assumption underlying these programs is that low-income, small-farm operators aspire to, and, in fact, can, improve their incomes through adoption of recommended agricultural practices and intensification or expansion of their farming operations. The use of farm resources that are idle or under-utilized, together with special-educational funds, may be less costly and more efficient than direct-transfer payments as a way to raise low farm-family incomes. Furthermore, based on the traditional American value of reward according to work and achievement, programs to help individuals raise their standard of living through education and technical assistance may be considered more desirable than direct payments.

Concern about small farms and the families that live on them recurs intermittently. Since the 1930's, according to Hall, Pagoulatos and Smith, most government programs instituted to deal with the problems of small farms have tried, in effect, to eliminate small farms by converting them, through expansion or consolidation, into commercial farms. Apparently, implicit in the design of these programs was an assumption that economies of size were available in agriculture, and that much of the labor employed in agriculture could earn higher returns in non-agricultural pursuits. Such programs have encouraged consolidation into large units, and the migration of "excess" agricultural labor to non-agricultural employment, since the
improved technology also tended to be labor-saving technology.¹

One of the major characteristics of the attention focused on poverty in the United States in the early 1960's was the greater emphasis given to urban rather than to rural problems. It is not surprising that urban poverty was the chief concern. Although the existence of serious poverty in rural regions, such as Appalachia, was recognized, the crisis proportions of urban problems, associated especially with the poverty of the black ghetto, posed a greater threat to the stability of society. It seems logical, according to Miller, Johnson, Smith and Zeller, that, at the time, the thrust of emerging federal, anti-poverty programs (such as those authorized under the Economics Opportunity Act of 1964) was directed toward eradicating poverty in urban areas.²

Yet, even though the design and emphasis of federal anti-poverty programs were primarily urban in nature, the incidence of poverty was proportionately higher in rural areas. The President's Commission on Rural Poverty described the condition in the following way:

It may surprise most Americans to know that there is more poverty in rural America, proportionately, than in our cities. In metropolitan areas, one person in eight is poor,

¹Harry Hall, Eldon Smith and Angelos Pagoulatos, Public Economics of the Small Farm, Dept. of Ag. Economics Staff Paper 40, (Lexington, Kentucky: University of Kentucky, July 1977), pp. 1-3.

²Miller, Johnson, Smith and Zeller, Approaches to University Extension Work with the Rural Disadvantaged, Office of Research and Development (West Virginia University, September 1972), p. 1.
and in the suburbs the ratio is one in fifteen. But in rural areas one of every four is poor. All the rural poor do not live on farms; most live in small towns and villages.  

Moreover, many of the programs which were not urban in focus dealt inadequately with rural poverty, in large part because comparatively little was known about the nature of and the specific problems of the rural poor, including how best to relate to them within a program context. This problem was particularly severe in large, rural regions, such as Appalachia, which have a long history of unemployment and poverty, in addition to cultural characteristics which are apparently somewhat different from those of the larger society.

In the thirty years after 1940, American agriculture experienced one of its most dynamic periods of growth. Tractor numbers more than tripled . . . spending for fertilizers and lime rose over seven hundred percent . . . and expenditures for pesticides increased more than twentyfold. Result: excess production capacity, surpluses, price-support programs and production controls.

The government's answer to sagging farm incomes was a package designed for operators with goods to sell. The greater an individual's sales, the greater was his advantage. The price support program was essentially a big farm program to the extent that size was measured by sales or production. Federal programs of the fifties and sixties were actually helping to drive small farmers out of business.

According to the President's Commission on Rural Poverty, the

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act of protecting prices encouraged farmers to take full advantage of the postwar technological boom and to compete fiercely for land. The effect was an increase in farm size, as big operators swallowed their smaller brethren. Between 1940 and 1970, farm numbers shrank from 6.1 million to 2.3 million. The value of farm property grew sixfold, and the average farm size more than doubled. Operators unable to make the adjustment vanished.4

According to Stoneberg, in the mid-forties, Congress was not alarmed about the disappearance of farms, but it was interested in providing incentives for displaced farmers to get jobs in the city. After the riots of the 1960's, however, Congressmen again evaluated the situation. Continued urban growth was no longer desirable. The main goal was no longer to entice small operators to leave the countryside. But neither was the goal to get small farmers to join the agricultural mainstream. According to Stoneberg, since the mid-fifties, farm policy has placed less emphasis on the production potential of small farms in favor of the broader issue of rural development.5

RESEARCH PROBLEM STATEMENT

There is a lack of knowledge of the income and demographic characteristics, capabilities, aspirations and resources of small-farm operators. Agricultural census data, in which numbers of small farms

4Ibid., pp. 1-6.

5Stoneberg, Extension Economics (Ames, Iowa: Iowa State University, August 1976), pp. 2-4.
are measured on the basis of gross sales, tells little about the situation of the numerically-identified groups. There is little information concerning the farm resources, off-farm income, employment opportunities, their physical, educational and mental limitations, their aspirations and goals, of the members of these groups. The assumption that "... low-income, small-farm operators aspire to, and, in fact, can, improve their incomes through adoption of recommended agricultural practices or expansion of their farming operations ..." underlies programs to aid small-farm operators. This assumption will be questioned. There is limited information for use in evaluating alternative-program approaches. As a result, a policy debate goes unresolved. Some argue for public programs to help limited-resource farm operators. Others argue that other types of income promotion or subsidization programs hold more promise, citing the limited opportunities to improve small-farm income and other factors, such as age, physical and mental handicaps and the lack of basic education, all of which may pose insurmountable barriers for many small-farm operators. Still others argue that no public policy is necessary in this area due to the substantial non-farm income of small-farm families.

Equally important is the fact that when programs to assist small farmers are developed, they often fail to achieve maximum results due to a lack of an initial inventory of the resources, limitations, opportunities and goals of the farmers participating in the program. Furthermore, evaluation of the effectiveness of such programs is not possible without benchmark information. Detailed information as to
their characteristics and the farming operations of these small farmers is needed in order to assess the validity of the assumption underlying existing small-farm programs. Such information is also needed to clarify issues of public policy and to provide a basis for evaluating alternative approaches to aid small-farm operators.

Small-farm families make up a large percentage of the total farm families in southern Illinois. Many of these families are not able to generate enough income to furnish their families with goods and services at the levels which they feel are satisfactory to provide a reasonable standard of living. The limited-resource farm family has agricultural problems requiring treatments different from those of the larger-farm families, who have good sources of capital, expanded management opportunities and less-limited agricultural resources. The Illinois Cooperative Extension Service and the local county extension councils have a commitment to help all farm families help themselves through education and the application of knowledge in improvement of agriculture, home economics and human development. An accurate profile of the limited-resource farm family will help in designing and directing the development of educational programs to meet their needs.

An agricultural policy concerned with the production of corn, wheat and soybeans often overlooks the poor, limited-resource or poverty-stricken people of rural America, because these people produce so little. But an agricultural policy concerned with people cannot afford to overlook them, because they are so numerous.

Extension prides itself on helping people become more productive members of society through the best use of resources and the
improvement of their level of living. Traditionally, extension programs respond to the needs of people as expressed by the people. Each state has a given or limited amount of resources devoted to farm management and other extension programs. Those administering these resources decide how to best use extension programs. According to Stoneberg, if a higher percentage of the resources are used in programs dealing with low-income farmers, it may necessitate reducing the programs for other groups.⁶

Although some farmers on small units can be reached by regular extension programs, many are not reached, or only occasionally reached, by traditional extension activities. Therefore, to work with limited-resource farm families, a specific program must be tailored to their needs, with features that appeal to them.

Recognition is given to the fact that the use of these terms "small farmers, limited-resource farmers or low-income farm families" will suggest a rather heterogeneous group. It will include young farm families who just started farming recently, older farm families who have made limited financial progress and many farmers who are working off the farm.

Farm and rural society has changed dramatically in the past half century. The uneven application of technology and management skills has resulted in a heterogeneous farm audience. Advances in communication and transportation have resulted in a rural population that is

⁶Ibid., pp. 4-12.
highly diverse in terms of occupations, education and productiveness. Extension's support has come chiefly from the responsive sector of the rural population and from community leaders who have seen extension's task contributing to the well-being of society. The traditional educational and value system of most extension workers has been compatible with this audience. Many of extension's traditional missions have been aimed at meeting the educational needs of those who are motivated to learn and to adopt improved practices.7

RESEARCH PURPOSE AND OBJECTIVES

The purpose of this study is to develop an agricultural and social profile of small, emerging, farm families in the fifteen counties of Extension Region X in southern Illinois, and to use that information in developing an educational program and delivery system designed to help these farm families. The objectives are specific in providing information and findings relative to the audience being studied in this part of Illinois. The study is also general in generating information and findings which are applicable to small-farm problems throughout the Midwest.

The primary objectives of this study were the following:

1. To develop an agricultural and social profile of the small-farm families in southern Illinois.

2. To evaluate and review existing work done with, and

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programs for small-farm families in Illinois and in other states.

3. To develop guidelines for the development and delivery of educational programs by the Cooperative Extension Service for small-farm operators, based on their available resources and aspirations.

4. To identify the factors which cause divergence between potential and present farm income levels for these operators.

5. To determine whether subsectors within the small-farm population can be identified.

IMPORTANCE OF STUDY

This study is oriented towards providing information which will be the basis for the development of educational programs by the Illinois Cooperative Extension Service for small-farm families. Extension personnel will be able to identify the weaknesses and the strengths of existing programs in the area of farm management, to understand needs as identified by the audience, to overcome program barriers in working with small-farm operators and to provide the development of a benchmark against which program progress can be measured in the future.

Furthermore, although these data are area specific, they should provide generalizable findings of the characteristics of small-farm operators in the Midwest. As educational programs for small-farm
families in Illinois expand to other counties outside Region X, the results of this study will provide guidelines for planning and implementing program objectives and activities elsewhere.

The situation of small-farm operators is affected by innumerable factors, including: social and economic characteristics, farm and non-farm opportunities and a variety of direct and indirect government policies and programs. This study will focus on the development of educational programs, by change agents. In that the study will emphasize educational programs to meet the needs of the limited-resource farm operators, definite comprehensive policy recommendations will be beyond its scope. However, implications should emerge from the study relative to many aspects of small-farm public policies and programs.
Chapter 2

REVIEW OF LITERATURE ON THE SMALL-FARM SITUATION

In this chapter, the situation of small farmers will be examined, and a review of relevant literature will be presented. Particular emphasis will be placed on mid-west United States. Economic theory and analysis will be utilized to provide a framework for examining historical trends in farm numbers and sizes. Attention will be focused on public-policy issues related to farm opportunities available to small farmers for improving family income; also, barriers to achieving potential farm income will be examined.

SMALL-FARM FAMILY DEFINED

In researching the area of small-farm operations, one finds the term "small-farm family," is most often cited by the literature. Other terms are also cited, including: the marginal farmer, emerging farm families, low-income farm families, limited-resource, developing farm families, low-resource and less-than-intensified farm families.

In the Extension Committee on Organization and Policy Report, 1967, low-income farmers are defined as those operating farm businesses grossing less than ten thousand dollars annually, even though there may be variations in total net family incomes. In this report, limited-resource farmers are viewed as either: (1) full-time farm operators grossing less than ten thousand dollars annually, but with a resource base sufficient to improve their income from agriculture in the years
ahead, or (2) part-time farm operators with too few physical resources to derive a satisfactory level of living from full-time farming, but who can use their resources more efficiently to supplement off-farm income.\(^8\)

During the past few years, attention has begun to be focused on the plight of the small-farm operator. Even with this increased attention, a general consensus has not been reached as to the definition of a small farm. A co-worker likes to define a small farmer as one who stands less than five feet, three inches in height and weighs less than one hundred, twenty pounds. Although this provides a very definite criteria for defining a small farmer, it gives us very little insight into the economic situation of and the problems faced by the small-farm population. Neither the physical size of the operator nor the physical size of the farm operation is very helpful in defining the economic problem faced by small-farm operators. The 1969 Census of Agriculture\(^9\) reports that there are approximately one hundred, eighty thousand farms that contain more than one hundred, forty acres, yet have gross sales of less than two thousand, five hundred dollars.

The statistics on gross sales of agricultural products are probably not much more helpful in providing insight into the economic position of the farm family. However, this information is readily available and is an economic measure that can be more easily translated


to reflect the family's economic condition. The distribution of farm incomes is a continuous distribution. Therefore, any division between large and small farms is necessarily arbitrary. Tweeten and Schreiner estimated that in 1965, the break-even point for farms coincided with a value of sales level of over thirty thousand dollars annually. Smaller farms were regularly losing money and were continuing to survive only because the operators were willing to accept lower returns for their labor and equity than they would receive in other forms of employment. At that time, the level of ten thousand dollars in gross farm sales appeared to be a useful breaking point between marginal and commercial farms. Since price levels have more than doubled since 1965, it would seem appropriate, at this time, to use a base figure of at least twenty thousand dollars in annual sales of agricultural products as an arbitrary dividing point between the small and the not-so-small farm operations. Data from the Census of Agriculture indicates that two-thirds of the nation's farms have gross sales of less than twenty thousand dollars annually. Realized net farm incomes from this group averaged two thousand, three hundred dollars in 1975. Off-farm income, which averaged twelve thousand dollars, was the major source of

10 Tweeten, Luther and Schreiner, "Economic Impact of Public Policy and Technology on Marginal Farms and on the Non-Farm Rural Population," Benefits and Burdens of Rural Development (Center for Agriculture and Economic Development: Iowa State University, Iowa State University Press, 1970).


family income. Although this group of farm operators controls thirty-eight percent of all land in farms, they receive less than eleven percent of the total cash receipts from farming.\textsuperscript{13}

A precise definition of a "small-farm operator" is difficult; Webster's definitions of "small" and "farmer" are not particularly helpful. Recognizing that no definition will be agreed upon by everyone, the current consensus appears to be that "a small farmer is a farm operator whose gross farm sales are insufficient to provide an adequate family income." In recent Congressional hearings, a "small-farm operator" was more specifically defined as an individual operating a farm with gross, annual, farm sales of less than twenty thousand dollars and annual off-farm income of less than five thousand dollars.\textsuperscript{14}

The difficulties with this definition are obvious: (1) differences between gross farm sales and net farm incomes among different types of farm enterprises are not considered; (2) it is difficult to find statistics which cross-tabulate farm sales and off-farm incomes; and, (3) there is more than a little room for value judgements in what is an adequate family income.

Accepting the current working definition of a "small farmer" as one whose gross, annual, farm sales are less than twenty thousand dollars, it is recognizable that there are many sub-groups among these farm operators. These sub-groups cannot be discerned from secondary

\textsuperscript{13}Ibid., pp. 14-15.

\textsuperscript{14}Arden Colette, \textit{The Relevance of Agricultural Policy Directed Toward Small Farmers} (Ga\'inesville, Florida: University of Florida, August 1977), p. 3.
statistics such as those in the Census of Agriculture reports, but the
differing problems and potentials of the farmers in the sub-groups
must be recognized by government programs.

The definition of the "small farm" has taken several turns since
the founding of the Republic. One ERS historian says: Today's small
farm is often seen as "... the place with poor land and poor
prospects; the home of the people left behind...". The Food and
Agriculture Act of 1977 defines "small farmers" as those who market
agricultural products worth less than twenty thousand dollars a year.

According to the 1974 Census of Agriculture, our 1.5 million
small farmers, or two out of three, operate twenty-nine percent of our
farmland, and they control about a third of all farm assets. On the
other hand, they accounted for just a tenth of the nation's total farm
sales in 1974, about five thousand, four hundred, seventy dollars per
farm.

They keep a hand in farming while rounding out their incomes
from non-farm jobs. In fact, these farm families had an average income
of over fifteen thousand dollars in 1976, almost as much as all families
in the United States, and over three times the official poverty thresh-
hold for a farm family of four.

Contrary to popular notion, small farmers do not primarily raise
berries, melons, vegetables and tobacco. The 1974 Census of Agriculture

16Ibid., p. 16.
shows that four out of ten operated livestock farms, and three in ten operated cash grain farms. By farm type, tobacco, fruits and nuts, and field crop operations, in that order, were most likely to be small. Least likely to be small were dairy, poultry, vegetable and horticultural operations.  

Every region has many small farms. Nearly four-fifths of the farms in the south are small farms. In the northeast, about sixty percent of the farms are small, while in the north-central states, more than half fit the small-farm definition. Nationally, the south has almost half of all small-farm units. About forty percent are located in the north-central region and only five percent in the northeast.

James Lewis, ESCS-USDA, has analyzed the distribution of small farms on the basis of farm sales and family income. Though the criteria is not sufficient for identifying the small farms, such analysis does provide a perspective. From his data, we find the following percentage of small farms in the total farm operations for the states in the north-central region.


TABLE I
NUMBER AND PERCENT OF FARMS IN THE NORTH-CENTRAL REGION WHICH GROSSED LESS THAN $20,000 IN 1973

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Farms Grossing Under $20,000</th>
<th>Percent of All Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>57,448</td>
<td>50</td>
</tr>
<tr>
<td>Indiana</td>
<td>61,627</td>
<td>66</td>
</tr>
<tr>
<td>Iowa</td>
<td>48,951</td>
<td>38</td>
</tr>
<tr>
<td>Kansas</td>
<td>46,383</td>
<td>57</td>
</tr>
<tr>
<td>Michigan</td>
<td>51,443</td>
<td>75</td>
</tr>
<tr>
<td>Minnesota</td>
<td>54,254</td>
<td>52</td>
</tr>
<tr>
<td>Missouri</td>
<td>92,039</td>
<td>76</td>
</tr>
<tr>
<td>Nebraska</td>
<td>30,132</td>
<td>44</td>
</tr>
<tr>
<td>North Dakota</td>
<td>16,737</td>
<td>39</td>
</tr>
<tr>
<td>South Dakota</td>
<td>19,806</td>
<td>45</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>54,638</td>
<td>59</td>
</tr>
</tbody>
</table>

SMALL FARMER CHARACTERISTICS

In February, 1972, a conference entitled "Methods of Working With Limited-Resource Farmers" was held at Chattanooga, Tennessee, under the sponsorship of the Tennessee Valley Authority, United States Department of Agriculture. This conference set the stage for many papers, studies and conferences which were to follow in the area of limited-resource farmers. The conference compiled the characteristics of a
limited-resource farm family as follows:

1. The limited-resource family in the south is most likely to be farming a rather small unit of five to fifty acres in size, with often only twenty to forty percent of this clear land suitable for crop production. A fairly high percentage of these families will own the land which they operate. One of their main goals is to earn a satisfactory living.

2. In the middlewest or northern states, families in this category are more likely to be scattered throughout a county or area and not be highly concentrated. The highest percentage of low-income farm families will usually be found in the areas with the lowest-priced land. Also, a higher percentage of these families will be renting part or all of the land they operate.

3. In the southern states, the families in the lower-income categories may be either black or white families. In the northern states, since only a very small percentage of the farmers are black, most of the low-income farm families will be white.

4. The factor most widely used as a measure of the income level of the family is gross income. Although this is not a perfect guide as to net income of these families, it is often the best tool available to judge the income potential of these families.

5. The situation will vary greatly by county, area or state.
The local situation needs to be identified and evaluated when attempting to develop programs for limited-resource farmers. Although some program elements may be successful in most situations, other programs will be successful in only very specific situations. Thus, educational programs need to be tailored as much as possible to the local situation.

SMALL FARMER AGE AND EDUCATION

While there is little or no information on some personal characteristics of farm operators, there is data on age and education.

According to census data, the operators of small-farms are older, a median age of 53 in 1974, than those who run larger units, a median age of 50. Slightly over one in five small-farm operators were at least 65. Small farmers also have had less schooling than the operators of the larger farms. Sixty-seven percent had not finished high school, compared with sixty-two percent for all farmers.20

To researchers and policy-makers, the age difference suggests that many older, small-farm operators need programs to help them to

19 E. G. Stoneberg, op. cit., pp. 22-24

prepare for retirement, to transfer their estates to heirs, or to become successful landlords. Younger operators, on the other hand, may be more interested in programs to expand their farming operations, or to obtain an off-farm job.

OFF-FARM INCOME

According to a study by Larson and Lewis, the lower the farm receipts, the more likely is that the operator had outside income. Those with sales of $5,000 to $19,999 reported that they derived four-fifths of their income from non-farm sources. In the $10,000 - $19,999 sales class, the proportion was slightly over half. In every sales category, a sizable percentage reported off-farm income of more than $10,000. Through only four percent of all small-farm operators belong to minority groups, nearly ninety percent of all minority farmers operate small units. These minority families were found to depend more on farm earnings, and thus are more likely to be poor. Larson and Lewis also found that, as a rule, minority operators are older than other farmers, work fewer days off the farm, have smaller farms and mainly produce crops.  

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The theory of perfect competition provides a theoretical framework for economic analysis. It is the explanatory model that leads to the most efficient combinations of resources, to optimum output, and to maximum success in meeting the wishes of millions of individuals making independent decisions concerning what products they most desire. Through the pricing system, the quantity of a goods supplied is equated with the quantity of a goods demanded. Competition forces firms to continually seek greater efficiency by adopting lower-cost production processes. As this occurs, less-efficient firms go out of business, and their resources shift to other uses.

As an explanatory model of real-world, economic activities, perfect competition has some serious limitations. In the static model, achievement of the optimum allocations and returns to resources, as well as optimum distribution among final goods, depends on assumptions of homogeneity, numerous firms, perfect resource mobility and perfect present and future knowledge of alternative prices and opportunities. In the real world, such homogeneity does not usually exist. Secondly, although production of goods and services may be maximized, the necessary resource reallocations may lower the perceived well-being of people by forcing them out of preferred occupations or situations. Third, one driving force of the model, the search for cost-reducing, production processes, may result in the emergence of large-size firms that attain the least-cost means of production. If these firms force smaller firms out of business and are then able to restrict competition, an
inconsistency arises; technology can run into "bottlenecks" or create unacceptable hardship. Neither are people or land homogeneous. Factors such as age, lack of education or lack of appropriate skills may limit opportunities for some people to move out of agricultural production or make the cost of so doing exceed the benefits.²²

According to Bardowe,²³ all rational individuals try to maximize their value returns and the satisfaction they enjoy from life. There are wide differences between individuals in the ways in which they measure their satisfactions in monetary returns. Most people regard monetary returns as an intermediate goal rather than a final use goal. For them it is not the money, but rather what it will purchase as an ultimate goal. When the profit-maximization process conflicts with these ends, they will often settle for less money and more leisure time, more security or more of some other goal. This fact helps explain why landowners and farmers frequently fail to behave in a strictly economic manner, even when it is very clear that they could use their land, labor or capital in a different manner from the way they presently use them to maximize returns.

Operators seldom enjoy perfect security in their economic expectations. Risk and uncertainty, coupled with previous unfavorable experiences of themselves or others they knew, have made many operators


hesitant about a given management decision. Practically all individuals find that they must operate partly in the dark. Even when they are supplied with information, they must make decisions with limited certainty concerning the outcome. In making these decisions or failing to make the decisions, they and their families must bear the consequences, either good or bad.

According to Bardowe, farm families differ considerably in their ability and willingness to make economic decisions. Some are inclined to take calculated risks or perhaps even to gamble on an occasional long shot, while others place more emphasis on security. This basic difference in willingness to take risks often has an important effect upon behavior. Some operators who take long chances succeed in developing pennies into fortunes; others end in poverty.24

There is a conflict between the maximizing of returns from resources and the maximizing of security. When a farmer makes a decision to buy thirty head of feeder steers to finish out, and the price drops to below-purchase price when the steer are marketed, the result could mean a four thousand dollar loss off a net of twenty-five thousand dollars for operator A, or a loss of four thousand dollars off a net of six thousand dollars for operator B. The loss is the same for both operators, but the risk is much greater for operator B, whose family's well being may be in jeopardy because of this income decision.

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The small-farm problem is generally expressed in one of two ways: one, the existence of the very large number of farm units that receive a very low return; and two, the rapid decline in the number of farms included in the category. The 1969 Census of Agriculture reports that in the United States, two million, one hundred seventy-seven thousand, five hundred sixty-eight farms had gross sales of less than twenty thousand dollars. This accounted for 79.8 percent of all farm units. The 1974 Census of Agriculture reports one million, six hundred sixty-six thousand, nine hundred three farm units with gross sales of less than twenty thousand dollars. During this same period, total farm numbers decreased by only two hundred eighty thousand, one hundred twenty-five farms. This difference indicates that not all of the reduction in small-farm numbers is because farms have been forced out of agriculture. Many of the units that are no longer included in this category are included in higher-income categories, either because of the enlargement in the size of the operation or because of the effect of inflation on agricultural prices.

Economists like to assume that profit maximization is the primary goal of "rational man." Since small-farm operators are


\(^{26}\)Ibid., p. 10.
rational beings, then profit maximization should be their primary goal. However, it has been observed for some time that farmers, especially small-farm operators, appear to make management decisions that tend to increase security and certainty of expectation rather than to maximize profit. Or, viewed another way, they maximize profits, subject to certain constraints, such as security, certainty and the time available. These characteristics are closely associated with a reluctance to adopt new ideas and technologies. Smith and Capstick surveyed one hundred, eleven farmers in northeast Arkansas in an effort to test if profit maximization was the primary goal. In ranking the ten goal alternatives in the survey, farmers place profit maximization seventh. In order of ranking, the ten goals were: (1) stay in business, (2) stabilize income, (3) increase efficiency and production, (4) provide a college education for children, (5) improve standard of

27 John A. Schnittker, "Distribution of Benefits from Existing and Prospective Farm Programs," Benefits and Burdens of Rural Development (Iowa State University, Center for Agriculture and Economic Development, Iowa State University Press, 1970).


living, (6) reduce borrowing, (7) maximize profit, (8) increase leisure time, (9) increase net worth, and (10) increase farm size. Consideration of this goal ranking indicated that stability and certainty were much more important in the value structure of small-farm operators than profit maximization. The development of policies, procedures and programs should take this indication into consideration and focus on these goals, rather than on strict profit maximization.

Since the goal rankings indicate that security, certainty of expectation, and current income level hold a higher priority than profit maximization or the accumulation of wealth, agricultural policies should be geared to reach these goals. Policies that reduce the magnitude of price fluctuations and encourage an orderly supply will improve the certainty of expectation. Policies that assist the farmer in receiving an adequate return will improve the income situation. Education and training programs improve the efficiency and productivity of the resources utilized by small farmers. This policy increases the income situation and provides an alternative of off-farm employment to the better-trained individuals. Encouraging the development of industries in rural areas increases the opportunity for new careers or part-time employment.

Enormous adjustments have occurred in agriculture since before World War II. The changes that have taken place in the United States in the number of farms, in the average farm size and in farm population since 1935 are presented in Table II.
### TABLE II

FARM NUMBERS, SIZES AND POPULATION IN THE UNITED STATES, 1935 - 1975

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Farms in U.S. (thousands)</th>
<th>Size of Average Farm (acres)</th>
<th>Farm Population No. (thousands)</th>
<th>Percent of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935</td>
<td>6,812</td>
<td>155</td>
<td>32,161</td>
<td>25</td>
</tr>
<tr>
<td>1940</td>
<td>6,102</td>
<td>175</td>
<td>30,547</td>
<td>23</td>
</tr>
<tr>
<td>1945</td>
<td>5,859</td>
<td>195</td>
<td>24,420</td>
<td>18</td>
</tr>
<tr>
<td>1950</td>
<td>5,388</td>
<td>216</td>
<td>23,058</td>
<td>15</td>
</tr>
<tr>
<td>1954</td>
<td>4,782</td>
<td>242</td>
<td>19,019</td>
<td>12</td>
</tr>
<tr>
<td>1959</td>
<td>3,710</td>
<td>303</td>
<td>16,592</td>
<td>9</td>
</tr>
<tr>
<td>1964</td>
<td>3,158</td>
<td>352</td>
<td>12,954</td>
<td>7</td>
</tr>
<tr>
<td>1969</td>
<td>2,954</td>
<td>373</td>
<td>10,307</td>
<td>5</td>
</tr>
<tr>
<td>1975</td>
<td>2,814</td>
<td>385</td>
<td>8,900</td>
<td>4</td>
</tr>
</tbody>
</table>


The number of farms has declined by four million in forty years. The farm population has decreased by twenty-three million people during a period when the total population grew by over seventy-five million people. Average farm size increased two hundred, forty-eight percent
during the period. The total amount of land in farms has not declined as rapidly as has the number of farms. In Figure 1, the changes in the number of farms and in their size since 1950 are graphically depicted.

Analysis of changes since 1960 by farm sales class provides further insight into the nature of the adjustments that have occurred. As indicated in Table III, farms with annual gross sales of over twenty thousand dollars have almost tripled in number in the nation. On the other hand, those with sales of less than twenty thousand dollars have decreased by almost fifty percent. Nevertheless, "small farms" still accounted for 64.5 percent of the total number of farms in 1973. They controlled substantial resources. In 1965, farms with gross sales of less than ten thousand dollars contained thirty-nine percent of the land in farms, contained thirty-four percent of the productive assets of all farms, and used thirty-eight percent of the total agricultural labor. The contribution of these farms to the national agricultural output was lower than either the number of the farms or the control of their resources would indicate.

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32 Census of Agriculture, 1974, op. cit.

33 Jerry C. West and K. C. Schneeberger, "Research and Education Needs of Those Living on Small Farms," The Missouri Small-Farm Program (Publication 36, Department of Agricultural Economics, University of Missouri: Columbia, Missouri, 1972).

Figure 1
TRENDS IN FARM NUMBER AND FARM SIZE IN THE UNITED STATES, 1950-1975

NUMBER OF FARMS IN THE UNITED STATES

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>5,647,800</td>
</tr>
<tr>
<td>1955</td>
<td>4,653,800</td>
</tr>
<tr>
<td>1960</td>
<td>3,962,520</td>
</tr>
<tr>
<td>1965</td>
<td>3,356,170</td>
</tr>
<tr>
<td>1970</td>
<td>2,954,200</td>
</tr>
<tr>
<td>1975</td>
<td>2,810,000</td>
</tr>
</tbody>
</table>

AVERAGE FARM SIZE IN ACRES IN THE UNITED STATES

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>213</td>
</tr>
<tr>
<td>1955</td>
<td>258</td>
</tr>
<tr>
<td>1960</td>
<td>297</td>
</tr>
<tr>
<td>1965</td>
<td>340</td>
</tr>
<tr>
<td>1970</td>
<td>373</td>
</tr>
<tr>
<td>1975</td>
<td>385</td>
</tr>
</tbody>
</table>

### TABLE III

**NUMBER OF FARMS BY ECONOMIC CLASS IN THE UNITED STATES, 1960-1973**

<table>
<thead>
<tr>
<th>Gross Annual Sales Categories</th>
<th>Number of Farms</th>
<th>Percent Change, 1960-73</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expanding Farm Sector:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$40,000 and over</td>
<td>113,000</td>
<td>446,000</td>
</tr>
<tr>
<td>$20,000 to $39,999</td>
<td>227,000</td>
<td>563,000</td>
</tr>
<tr>
<td>Total</td>
<td>340,000</td>
<td>1,009,000</td>
</tr>
<tr>
<td>Declining Farm Sector:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,000 to $19,999</td>
<td>497,000</td>
<td>332,000</td>
</tr>
<tr>
<td>$5,000 to $9,999</td>
<td>660,000</td>
<td>262,000</td>
</tr>
<tr>
<td>$2,500 to $4,999</td>
<td>617,000</td>
<td>488,000</td>
</tr>
<tr>
<td>Less than $2,500</td>
<td>1,849,000</td>
<td>753,000</td>
</tr>
<tr>
<td>Total</td>
<td>3,623,000</td>
<td>1,835,000</td>
</tr>
<tr>
<td>Total</td>
<td>3,963,000</td>
<td>2,844,000</td>
</tr>
</tbody>
</table>


### EXTENSION'S HISTORICAL ROLE WITH SMALL FARMS

In this section, research and extension programs and national agricultural policy are reviewed. The original task assigned to Cooperative Extension was to help rural people become more productive members of society. There was a commitment to develop a commercial type of agriculture that would support higher levels of living. The
development of commercial agriculture served the goals of assuring a developing nation an adequate supply of agricultural products and of releasing human resources from agriculture to produce other goods and services. At the beginning, the rural audience was rather homogenous. But, differences in the responsiveness of families to education and to service programs became evident. Cooperative Extension proved its ability to lead people within agriculture into higher economic and social classes of American society. The consequences of freeing land and human resources from agricultural production strengthened the total economy and benefited many families who found greater opportunities in other kinds of employment.

The farm and rural society has changed dramatically. The variable resources available to farmers and the uneven application of technology and management skills have helped to develop a heterogeneous farm audience. Today's rural population is highly diverse in terms of occupation, education, level of living and productiveness.

According to a "Project III" report, extension's support has come chiefly from the responsive part of the rural population and from individuals who have seen extension's work contributing to the well-being of society. The traditional education and value system of most extension workers has been compatible with this audience. Even much of extension's traditional methodology has developed to meet the educational needs of those who are motivated to learn and to change practices.

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In *A People and A Spirit*, the Cooperative Extension Service is defined as an agency for change, a catalyst for individual and group action. Extension's job is defined as informal education; to help people help themselves. And, further, it is stated that extension programs follow the guidelines of national objectives, but permit a wide latitude in adapting them to local needs. A broad-scale educational effort with emerging farmers can have a positive impact on the economic and social development of both rural and urban areas and can improve the quality of life for individual families.\(^{36}\) The joint study committee which prepared *A People And A Spirit* believed the future allocations for extension work with low-income farmers should be increased by approximately one hundred percent.

In August of 1965, the Extension Committee on Organization and Policy (ECOP) released a report of the Project III Committee entitled "Extension's Responsibility to Commercial Farmers and Ranchers.\(^ {37}\) In this report, it was pointed out that extension's mission with commercial farmers and ranchers is to help them to be efficient producers of food and fiber and effective managers of the businesses they control. This mission was to be pursued primarily through an educational function. The report directs the Extension to continue to serve commercial farmers

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and ranchers, but it recognizes that obtaining new, public, fiscal resources for this work will become increasingly difficult, and further, that commercial farmers and ranchers will need to assume some of the cost of educational programs.

In May of 1967, a sequel report was prepared by the Project III Committee of ECOP. This publication was entitled "Extension's Responsibility to Farmers and Ranchers with Gross Farm Income Less Than $10,000." The report examined the needs of low-income farmers and recommended ways in which extension could better serve them.

The report states that the welfare of disadvantaged rural families will continue to receive major consideration in national politics and will be reflected in substantial support for educational and service activities. Society's mission with these people, as well as with other disadvantaged individuals and families, is to help them to participate more fully in the production activities and in the developmental goals of America and be rewarded accordingly. Further, the report suggests that the Cooperative Extension Service has had, and continues to have, the responsibility to serve this group of citizens.

In January of 1973 a report was prepared for ECOP entitled "Suggestions for Meeting Educational Needs of Young Farmers." This report suggests that extension must continually evaluate its effectiveness in providing well-balanced programs in all areas where it has

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38 Project III Committee, op. cit., pp. 2-6.

identifiable education responsibilities. The report raises the question, "Does the extension program regarding agriculture have an identifiable component concerned with the development of viable farm units?" It then states "The agricultural focus should not be restricted to techniques of production and marketing-specific commodities, but should include the policy issues important to producers and businessmen associated with farming."

The publication Hard Tomatoes, Hard Times \(^{40}\) accused the Extension Service and land grant schools of ignoring the small farmers, farm workers, small towns, rural residents and small-town governments. Although controversial in authenticity, it has drawn much national attention to the limited-resource, farm family with quotes such as,

"Had the land grant community chosen to put its time, its money, its expertise and its technology into the family farm, rather than into corporate pockets, then rural America today would be a place where millions could live and work in dignity . . . "

According to a 1976 ECOP subcommittee report, \(^{41}\) many large farmers of today were once small farmers; with extension's help they have gradually expanded to their present size. Extension has always been concerned about people and their problems. \(^{42}\)


\(^{42}\) Ibid., pp. 1-3.
A study by the Washington News in 1975 concluded that in 1985 there could be between one million and 2.4 million farms, depending on the direction of public policy. Critics of research policy claim that too little has been done to investigate the alternatives for displaced farmers, or, more specifically, to find how farm operators, who are put at a relative disadvantage by changes in technology, can adjust their farm operations successfully. The General Accounting Office (GAO) concluded, in 1975, that "... USDA and the land grant colleges have not made a concerted effort to solve problems impending the economic improvement of small-farm operators...".

Particular research needs in relation to small farmers have been identified by several sources. Kadlec concluded that small farmers have some research needs in common with larger farms, but that they also need different information concerning labor, intensive production systems, growth management strategies and the adoption of new and appropriate technology. Ladwig concluded that research concerning small-farm operators should investigate the geographic location, goals, attitudes and physical capabilities of small farmers, the applicability of their farms to the production practices and technology recommended for larger farms; the feasibility of exotic crops for small farms; and

44 Jerry West and K. C. Screeberger, op. cit., pp. 4-5.
how marketing procedures can be improved for small farms.\textsuperscript{47}

The role of disseminating and promoting the adoption of research results has been the responsibility of the Agricultural Extension Service. Schultz concluded that "the key variable in explaining the differences in agricultural productivity is the human agent: i.e., the differences in the level of the acquired capabilities of farm people."\textsuperscript{48}

Since knowledge is such an important resource, Beer concludes the failure of the Extension Service to reach small farmers contributes to their relative disadvantage.\textsuperscript{49} Stewart found that among low-income Kentucky farmers, only twelve percent had contact with the Extension Service.\textsuperscript{50} Similarly, Wardle found in two New York counties that only one-half of a group of small dairy farmers were working with the Extension Service.\textsuperscript{51}

Several models have been proposed to explain why small farmers


\textsuperscript{48} Theodore Schultz, \textit{Transforming Traditional Agriculture}, op. cit., p. 17.


do not seek extension assistance. Many of these involve explanations based on culture-linked characteristics, including lack of education, alienation and lack of motivation. For example, Hughes concluded that "people with a poverty background do not seem to be motivated or to be able to acquire, analyze and organize available knowledge and resources . . . "  

Schultz, on the other hand, argues that economics can explain the behavior, and states that lags in the rate of adaptation "can be explained satisfactorily by profitability." Furthermore, it is the absolute, not relative, increases that pay the costs of new inputs. While some extension recommendations are applicable to small-farm operations, often new production processes require more operating capital, purchased inputs and high-quality land to be profitable. Mechanization requires investment capital and a sufficiently high volume of production to lower per-unit costs. Often these resources are not available to small farmers, and, as a result, they often cannot adopt new research results profitably. Surveys in Illinois and Indiana, and in New York, indicate that many farmers, large and small, feel extension programs do not meet the needs of small farmers. There may be a rational economic basis for this attitude, which in turn would explain the failure of small farmers to use extension services.

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53 Theodore Schultz, Transforming Traditional Agriculture, op cit., p. 164.

54 Charles Beer, op. cit., p. 3.

SUMMARY

Within the community of those interested in rural America, there has been no shortage of controversy about the extent to which the needs of small farmers have been served. Several critics of the land grant system have asserted that the research that was being done by experiment stations was of little relevance to small farmers. Similarly, the Extension Service has been accused of not serving the needs of small farmers. A GAO report in 1975 indicated that less than three percent of extension's time was devoted to small-farm projects. There are other sides to these issues. Land grant universities have developed programs for small farms for many years. There have been and still are several states who offer farm and home development programs. Land grant universities have developed new, and, in some cases, larger technology. But they are not the decision unit which discontinues the production of smaller-scale technology.

Congress passed the Rural Development Act of 1972 to deal with the social and economic problems of rural areas. A subsection of Title V was aimed at the development of extension and research programs for small farmers. In the first five years of this act, funds were not made available for this subsection. In the Food and Agriculture Act of 1977, Congress included an amendment (Subtitle F--Small Farm Research and Extension) to the Rural Development Act of 1972, calling for the addition of small-farm research and extension programs and authorizing up to twenty million dollars for FY 78 and 79. No funding for the program was included.
Chapter 3

EXTENSION WORK CONDUCTED FOR SMALL-FARM CLIENTELE

During recent years there have been several pilot projects aimed at improving the farm incomes of small farmers. They have been conducted by various state extension services. Their basic approach has been to provide technical assistance on a one-to-one basis to selected farmers. The use of professional staff, para-professional "technicians," and volunteers has been successful in some cases. Experience indicates that careful planning, cooperation among businesses, government and individuals within the community, the adequate training of the program staff, and resources to conduct demonstrations and to subsidize the initial expenses are all important in developing a successful program. Although there are technical programs, they involve close personal relationships between people. In gaining the trust, respect and attention of small farmers, the program staff members often develop close friendships and help individuals with a variety of farm and nonfarm problems. The motivation, sensitivity, creativity and commitment of the staff appear to make an important contribution to success. In this section, special small-farm educational programs from several states are reviewed.

GEORGIA

The Georgia Cooperative Extension Service initiated the Georgia Small-Farm Program in 1973. Its objective is to encourage and assist
small, limited-resource farm families to improve and upgrade their methods of farming and their family living habits. More specifically, the objectives are:56

1. to extend the assistance of extension's educational programs to limited-resource farmers who are not reached by present methods;
2. to demonstrate the effectiveness of para-professionals in working with limited-resource, low-educational-level farmers;
3. to raise farm income of limited-resource farmers;
4. to raise the socio-economic position of limited-resource farm families; and
5. to increase the limited-resource farmer's use of available services, other than extension.

PROGRAM DESIGN

The program was started in ten pilot counties with twenty-two para-professionals employed to assist small farmers and to make day-to-day contacts necessary to carry out the objectives of the program. The counties were selected because of the need for assistance for small farmers and because of the interest and availability of extension staff to carry out the program.

The North Carolina Agricultural Extension Service, cooperating with North Carolina State University, developed and implemented the Farm Opportunities Program, which provided educational and technical assistance to approximately 650 small, low-income farmers. Its purpose was to help identify and to help solve farm, home and community problems through the use of on-the-farm assistance. The program was executed by para-professionals, called "agricultural technicians."\textsuperscript{57}

In 1974, there were 22 agricultural technicians, each working with an average of 34 marginal-income farmers in 18 counties of North Carolina. These technicians were working with each of the program families to help them increase family income, use appropriate agricultural technology and managerial techniques, acquire knowledge of and use public agencies, participate in community activities, and develop skills in setting and working for achievable family goals.

Program evaluation findings emphasized the social and psychological factors critical to the success of self-improvement programs designed to meet the needs of limited-resource farm people. Some social factors of limited-resource farmers identified by the

\textsuperscript{57} Dalton McAfee, The Farm Opportunities Program (A & T State University, September 1974, pp. 3-6.)
evaluation were:  

1. A **hesitation** to become involved in activities that go beyond the boundaries of the local community.

2. A **tendency** to avoid interaction with people other than family and close friends.

3. A **general lack of identity** with political, economic and community institutions and leaders.

4. A **sense of inadequacy and shyness** toward leadership responsibilities.

In addition, identified psychological factors of limited-resource farmers were:

1. **Lack of self confidence.** Limited-resource farmers generally lack confidence in their ability to contribute to new experiences.

2. **Apathy.** Limited-resource farm families demonstrate an attitude of indifference toward adopting new methods and seeking a higher standard of living.

3. **Low level of motivation.** The lack of interest in self-improvement programs indicates that attitudes and values held by limited-resource farm families toward themselves, toward others and toward achieving success in general are not motivation oriented.

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58 Ibid., pp. 4-7.
The University of Missouri Extension launched a pilot educational program in 1971. The educational effort was given the name "Small Farm Program." The Missouri program involves the use of education assistants (local farmers) to work directly with small-farm operators. The education assistants are non-professionals who work under the leadership of area farm management specialists. Other extension specialists are called on for special training and consultant work with the assistants. Since the program was initiated in late 1971, nearly nine hundred different families have participated in the program. The summaries of annual reports indicate that participants in the program have increased the quantity of output, the gross sales and the net income from their farms. A sample of both participants and non-participants was selected from the approximately sixteen hundred farmers interviewed prior to initiation of the program. The analysis compared changes by participants and non-participants from 1971 to 1974.

Farm sales were used as an overall measure of changes in output or farm size. Findings were:

1. Evidence suggests higher income of participant farms.
2. Enterprises found on small farms in Missouri are similar to those on the large commercial farms.
3. Small farmers generally have not managed their land,

Richard Aldrick, Missouri Small-Farm Program--An Evaluation with a Controlled Group, SR176 (University of Missouri: Columbia, Missouri, October 1975), pp. 1-5.
labor and capital to their best advantage.
4. Small, low-income farmers tend not to use the services of professional agriculturists.
5. Use of credit on participant farms was significantly greater than on non-participant farms.
6. Participants borrowed money more often and in greater quantity.
7. Many participants built a new home, purchased a trailer or made an addition to their home.
8. With limited capital, higher prices for feed meant fewer hogs and more beef cows.

VIRGINIA PROGRAM

Four counties in Virginia currently have small-farm programs. In each county, four technicians work intensively with one hundred to one hundred, twenty farm operators. The effects of the program spread beyond the initial group to neighbors and friends in the surrounding area. Demonstration projects, assistance with the timely use of appropriate management practices and the introduction of new farm enterprises are the techniques used by technicians.

In Floyd and Brunswick Counties, twenty-five percent planned to expand their farming operations. In Floyd County, the Extension Service and magazines were considered major sources of information; whereas, in Brunswick County, feed stores ranked highest as a source of information. In both counties, over one-half of the farmers surveyed
had not previously received help from the Extension Service or from any government agency.

In both counties, "the lack of operating capital" was perceived as the major problem faced by the farmers surveyed. In Floyd County, farmers desired extension assistance in taking soil tests, for pasture improvement and for assistance in weed-control problems. In Brunswick County, assistance was desired for taking soil tests, followed by the request for help with fertilizer and seed selection.  

KENTUCKY PROGRAM

Kentucky extension combines personal contact and the demonstration techniques which were popular in extension work thirty years ago in working with small farms. The approach being used brings extension assistance and help from other agencies to black families living on small farms in the southern part of Kentucky.

Extension programs, geared to larger and more commercialized farms, had not been effective in reaching these rural families. In 1968, representatives of the University of Kentucky Cooperative Extension Service and the Tennessee Valley Authority (TVA) agreed to carry out a special project with a selected group of black families on small farms (averaging fifty to sixty acres) in southern Trigg County.

The main objective in these early visits was to recognize potential leaders. Farmers were visited two times a month; sometimes

60 David Orden and Dennis Smith, Small Farms in Virginia, Virginia Agriculture Economics (Virginia Polytechnic Institute and State University, December 1977), pp. 1-4.
more often. Each family was encouraged to grow a home garden with size and type based on the need of the family. Fertilizer was provided to the families agreeing to become involved in the project.  

ILLINOIS INTENSIFIED FARM-DEVELOPMENT PROGRAM

A pilot project was initiated by the Illinois Cooperative Extension Service in 1969, with 150 low-resource farm families in five counties. The long-range objective of the low-resource farm project was to assist low-income farm families, in the management and decision making process, in achieving the family goals they set for themselves, and establishing and maintaining an income level sufficient for adequate family living.

The intermediate goals, or the specific ways the above objectives were to be achieved included:

1. Families to be assisted in inventorying their resources, in examining family goals and ambitions, and in assessing skills, interests and abilities through a series of personal visits by the program assistants.

2. Families interested in staying in farming, and who have the basic skills and resources to do so, to be assisted in developing new managerial skills and acquiring more adequate resources.

3. Families with no strong desire to remain in farming and

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without the necessary basic skills and resources are assisted in examining other employment alternatives.

4. Families remaining in farming are encouraged to adopt approved farming techniques, to practice simple farm and home record keeping and budgeting, to participate in community programs that will benefit them and to learn good consumer buying practices.

5. As the confidence and ability of such families increase through individual counseling and instruction, these families graduate to small-group instruction with the ultimate objective of returning them to the mainstream of rural society.

Five sub-professionals, or program assistants, were employed to work with the low-resource farm families. The program assistants were employed by the county and attached to the county extension office. The county advisers in agriculture and home economics do the recruiting, training and supervising, under the direction of the extension regional director.

Following a major turnover in program assistants, one full-time professional extension adviser was employed to serve the five-county area. He replaced the program assistants and was based in a regional office.

WISCONSIN MARGINAL-FARMER PROGRAM

This program was begun in 1975, with the goal of upgrading the management skills of limited-resource farmers. One of the initial
problems in the program concerned the development of local support. Most of the marginal farmers in the program were from a farm background. The average family size of those in the program is five, and the average net income is less than twenty-five thousand dollars per year. Most have less than fifty acres and are thirty-five years of age or younger.

Before entering this program, most of the limited-resource farmers did not keep adequate records, did not weigh feed for cattle or test and weigh their milk. Approximately half of these marginal farm families had no prior, direct contact with their county extension office. Few had ever visited the local experimental station, and most of the farm wives were not involved in homemaker groups.

In working with this group of marginal farmers, one professional has two para-professionals (successful farmers) working with him. There are nine group meetings a year, and each para-professional has twenty-eight families that he visits twice a month. The professional visits fourteen families on a regular basis and visits all the others at least twice a year. The contacts are initially focused upon gaining acceptance and then on suggesting specifics of farm management. A standard "gentlemens' agreement," signed by both parties, spells out the duties of both parties. 63

THE ELK RIVER PROJECT -- TENNESSEE

One of the oldest, and longest in duration, of the small-farm

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programs has been conducted in a seven-county area in south-central Tennessee. Initially, problems impeding small-farm development were studied by the University of Tennessee, the Tennessee Valley Authority (TVA) and local groups. In the early 1960's, programs were established to:

1. accelerate the use of the recommended crop production;
2. improve livestock production practices; and
3. improve farm-management practices.

The central objective was to increase farm sales to fifty million dollars by 1970 in the seven-county area. The accomplishment of this objective required that growth trend of farm sales be more than doubled, relative to the previous thirteen years. Local businessmen, civic leaders and young volunteers assisted in carrying out the program.

During the first two years of the program, ten thousand farmers were helped to take forty thousand soil tests. Fertilizer use and yields increased for corn, cotton and tobacco. Educational programs and promotion encouraged farmers to purchase three hundred, thirty performance-tested, purebred beef bulls; eight hundred, thirty purebred boars; three thousand, seven hundred purebred or high-grade, dairy heifers; and nine hundred, seventy-five purebred or high-grade sows. Improved marketing facilities were organized.64

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THE TEXAS INTENSIFIED FARM-PLANNING PROGRAM

Texas has initiated a program using local farmers as "para-professional" or "technicians." Each technician works with twenty to thirty-five farm families under the guidance of the county agricultural agent. The program has operated in ten Texas counties since 1969, with the addition of five more counties in 1973. Seventeen technicians have worked with three hundred, sixty farmers selected for the program.

Participants were selected on the basis of being small-farm operators who generally were not active in on-going extension activities, and who received a major portion of their income from farming. Preference was given to farmers with gross sales of under five thousand dollars. An evaluation of the program in 1975 emphasized the technicians' and participants' perceptions of the program. The evaluation provided information on changes from 1970 to 1974 among farmers participating in the program. These changes included substantial increases in the number of participants who also took advantage of other government and extension programs: for example, there was a seventy-two percent increase in the number of farmers contacting the extension office for information; a one hundred, thirty-six percent increase in the number attending tours, meetings and demonstrations; a twenty-one percent increase in the use of the Soil Conservation Service; and a nineteen percent increase in the use of the Farmers Home Administration. 65

SUMMARY

In this chapter, several small-farm assistance programs have been reviewed with regard to their approach, their effects on participants and their applicability to other areas. This review has been based on both the literature and the author's personal experiences. Most of the projects reviewed, which have been evaluated, have had positive impacts in raising their participants' incomes through improved-management practices and new enterprise combinations. It appears that the one-on-one approach, of an extension technician working directly with individual, small-farm operators, is successful; however, the close interpersonal relationships which are involved in such an approach should be recognized in designing a program of this type. Demonstration projects which provide hard evidence of profitability also appear valuable. Problems beyond management and enterprise improvements may be encountered when working with small farms. There are many questions, both of a research nature and in terms of program design, which need to be answered in relation to small-farm assistance programs. The evidence to date; however, indicates that small-farm operators are receptive to assistance programs and that these programs can improve the small-farm income situation.
Chapter 4

THE U.S.D.A. AND THE SMALL FARMER

The United States Department of Agriculture and the Community Service Administration co-sponsored five regional small-farm conferences. Their specific purpose was to hear small-farm operators and their families discuss the problems they face today.

Eight delegates from each of eleven midwestern states: Illinois, Indiana, Iowa, Kansas, Missouri, Michigan, Minnesota, Nebraska, Ohio, Oklahoma and Wisconsin; represented small farmers at the regional conference, held at Des Moines, Iowa, August 16-17, 1978. The author had the opportunity to observe the meeting at Des Moines.

There appeared to be little disagreement among those assembled at the Des Moines conference that the small farm was worth saving. It was charged that past agricultural policies have encouraged farmers "to get bigger or get out," and that policies should now be evaluated in terms of their impact on society as a whole, specifically in relation to soil and water conservation, energy use and urban policies and problems.

Uppermost in the minds of the small-farm operators and their families attending the conference was how to find some way to assure a fair price for their products, and thus assure that their small farms would stay in business.66

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66Frank L. Brewer, Interview with small farmers at the Regional Small Farmer Conference in Des Moines, Iowa, August 16-17, 1978.
The availability of long-term, low-interest credit was also a major concern of the small-farm operators at the conference. The Farmers Home Administration took a fair share of the criticism aimed at lending institutions. Long delays for loan approvals, excessive paperwork and incomplete and unclear information on application procedures were major frustrations of applicants.

Conference delegates urged reform of the tax laws, especially of land-use, property, inheritance and income taxes, to ease the burden on small farmers. Others recommended that farmers "get organized" in cooperative efforts to gain greater control over the prices they receive and over the cost of the input they purchase. Still others advocated stricter laws requiring disclosure of farm ownership and on restricting corporate or foreign ownership. The summary of the feedback sessions organized into eight areas. Delegates at the conference listed the top problems facing small farmers in the areas of (1) farm family living: quality of life; (2) production, technology and management, (3) land, capital and credit; (4) marketing; (5) energy; (6) community service; (7) government relations; and (8) alternative sources of income.67

The priority concerns in each of these eight areas, in the order of their importance, was determined. A scale of one to five was established with five considered the most serious, and one the least serious. The following is a summary of the identified problems.

67 Ibid.
FARM FAMILY LIVING: QUALITY OF LIFE

An underlying theme to this area is one of insufficient income to permit a level of living comparable to others. Low prices (in relation to costs) were cited repeatedly as the primary problem. This led to a strong plea for government policy which would push farm product prices upward. Some wanted one hundred percent parity; others wanted a new concept, but the same results. Another underlying theme evident in the delegates' comments was the strong commitment to the family farm as a way of life which should be preserved and promoted.

The problems associated with getting into farming, and then staying in, were frequently mentioned. The suggestions for change included changes in estate taxes, increased financial assistance to small farmers, faster loan processing, and more educational and financial assistance for young farmers.

Delegates also noted the pressures on family living caused by the employment of both spouses off-farm. Increased farm income was seen as the solution. Table IV indicates the top four problems identified by participants in the area of farm family living.
TABLE IV
PROBLEM PERCEIVED BY SMALL-FARM OPERATORS CONCERNING
FARM FAMILY LIVING: QUALITY OF LIFE

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inflation is the largest problem.</td>
<td>4.90</td>
</tr>
<tr>
<td>2</td>
<td>Inheritance taxes make it difficult to keep farm in family.</td>
<td>4.70</td>
</tr>
<tr>
<td>3</td>
<td>Farm families should be able to have a standard of living comparable to their city counterparts.</td>
<td>4.40</td>
</tr>
<tr>
<td>4</td>
<td>Farm family living costs are too high in comparison to net income.</td>
<td>4.40</td>
</tr>
</tbody>
</table>

PRODUCTION, TECHNOLOGY AND MANAGEMENT

Several recommendations were identified by the delegates in this problem area. Increased capital gains, inheritance tax exemptions and federal initiative to organize industries for small-farm families in areas where nonfarm employment opportunities do not exist topped the concerns.

More research and education in technology and improved and expanded management assistance for the small farmer was requested. Possible solutions were suggested in the areas of the developing

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68 U. S. Department of Agriculture, Results of Work Group Sessions, August 16-17, 1978, Des Moines, Iowa, pp. 5-21.
cooperatives aimed at serving the needs of the small farmer.

A common theme expressed by the delegates which cuts across several topic areas was the concern for corporate and foreign investment in agricultural land, thus driving up land prices, and thus the land costs for small farmers. Concern was also expressed about land-price pressures caused by land purchases of federal and state agencies for flood control, research and wildlife areas. Table V indicates the top four problems as identified by participants in the area of production, technology and management.

**TABLE V**

**PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING PRODUCTION, TECHNOLOGY AND MANAGEMENT**

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inflation, again, is first on the list.</td>
<td>4.78</td>
</tr>
<tr>
<td>2</td>
<td>Taxes are too high and are inequitable.</td>
<td>4.70</td>
</tr>
<tr>
<td>3</td>
<td>Farmers' costs are too high in relation to prices received.</td>
<td>4.67</td>
</tr>
<tr>
<td>4</td>
<td>Small farmers have poor representation in farm organizations and groups.</td>
<td>4.67</td>
</tr>
</tbody>
</table>

**LAND, CAPITAL AND CREDIT**

The delegates in this discussion group generated the longest

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69Ibid.
list of problems. Every discussion group found themselves discussing aspects of this area. There was a strong feeling expressed by the delegates that the lending structure, the tax structure, the U.S.D.A. programs and the national fiscal and monetary policies were all against the needs of small farmers. Table VI indicates the top four problems as identified by participants in the area of land, capital and credit.

TABLE VI
PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING LAND, CAPITAL AND CREDIT

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Small farmers need lower interest rate.</td>
<td>4.77</td>
</tr>
<tr>
<td></td>
<td>Federal loans should be available to small farmers at long-term, low-interest rates.</td>
<td>4.77</td>
</tr>
<tr>
<td>2</td>
<td>Farmers need to be able to pass land and chattel to their heirs during a retiring farmer's lifetime without severe tax penalties.</td>
<td>4.77</td>
</tr>
<tr>
<td>3</td>
<td>Investment in agricultural land by persons, corporations and foreign interests not actively engaged in farming should be curtailed.</td>
<td>4.77</td>
</tr>
</tbody>
</table>

70 Ibid.
MARKETING

The central theme to "solving" the marketing problems was the call for one hundred percent parity. Not all delegates subscribed to this idea. Some chose to call for a fair return, or an equitable return. Others asked for changing the way in which support prices are calculated. Those farmers producing crops and commodities generally not included in any support price system asked the U.S.D.A. to recognize their situation and to be supportive of other crops and commodities.

A substantial portion of the delegates felt there was a need for consumer education which would lead to better understanding of production costs and prices for the farmer, support for small-farmer programs and a decreased pressure by the public for a "cheap food" policy. One group suggested a check-off of their federal income tax form to provide money for a national program of consumer education regarding farming. Table VII indicates the top four problem areas as identified by the participants in the area of marketing.
TABLE VII
PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING MARKETING

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Farmers need adequate storage and shipment facilities.</td>
<td>4.08</td>
</tr>
<tr>
<td>2</td>
<td>Farmers should receive an equitable return on their investment.</td>
<td>4.08</td>
</tr>
<tr>
<td>3</td>
<td>Major grain marketing companies should be investigated.</td>
<td>4.00</td>
</tr>
<tr>
<td>4</td>
<td>Cheap food policy is unfair to farmers.</td>
<td>4.00</td>
</tr>
</tbody>
</table>

ENERGY

There was support expressed for additional research and information on alternatives to the use of fossil fuels: solar, gasohol, wind. Overall, there was a strong need expressed for energy research and development, conservation and energy policies which would include considerations appropriate to the farm home and small-farm enterprise. Table VIII indicates the top four problem areas as identified by the participants in the area of energy.

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71Ibid.
TABLE VIII
PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING ENERGY

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>More research and information on solar, gasahol, methane and wind, as applies to small farms, is needed.</td>
<td>4.56</td>
</tr>
<tr>
<td>2</td>
<td>There is a lack of adequately-funded, independent research on alternative energy sources and techniques for small farmers.</td>
<td>4.38</td>
</tr>
<tr>
<td>3</td>
<td>Small farmers don't hear about research and programs in energy conservation, organic farming and legumes: information outreach.</td>
<td>4.25</td>
</tr>
<tr>
<td>4</td>
<td>More research is needed on use of electrical power from other sources.</td>
<td>4.14</td>
</tr>
</tbody>
</table>

COMMUNITY SERVICES

Several problems and solutions discussed in this topic area surfaced in the discussion of small-farm living and government relations. The most dominant theme was the need for small farmers to become involved in community, county, and higher-level committees and boards, so that their views would be represented in decisions. This includes decisions about farm policy and those which affect schools, health care, law enforcement and the like.

72 Ibid.
The delegates called for more information for small farmers from the Extension Service. Other community-based agencies were also asked to offer more educational opportunities to young farmers. Table IX indicates the top four problem areas as identified by participants in the area of community services.

**TABLE IX**

PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING COMMUNITY SERVICES

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>More small-farmer representation on county, state and federal agricultural and</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>rural-development committees.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Extension programs and funding should not be cut back.</td>
<td>4.11</td>
</tr>
<tr>
<td>3</td>
<td>Extension service needs to give more information directed at small farmers.</td>
<td>4.00</td>
</tr>
<tr>
<td>4</td>
<td>There is a lack of adequate medical and hospital care.</td>
<td>3.71</td>
</tr>
</tbody>
</table>

**GOVERNMENT RELATIONS**

Next to land, capital and credit, this topic area produced the most discussion. It provided the vent for the frustration and outright anger of many delegates. "Cheap food" policy was perceived to be the main problem, and the recommendation was loud and clear:

73 Ibid.
the government should do whatever is necessary to change that policy. Delegates also called for a federal policy commitment to the maintenance of small farms and federal programs designed to that end. Table X indicates the top four problem areas as identified by program participants in the area of government relations.

TABLE X

PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING GOVERNMENT RELATIONS

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A cheap food policy, at the expense of the farmer, must be eliminated.</td>
<td>4.62</td>
</tr>
<tr>
<td>2</td>
<td>There is unrealistic control of farmers by USDA, EPA and OSHA.</td>
<td>4.38</td>
</tr>
<tr>
<td>3</td>
<td>Government should not allow imports to depress domestic free market.</td>
<td>4.38</td>
</tr>
<tr>
<td>4</td>
<td>We need a national policy to keep young farmers in the country.</td>
<td>4.36</td>
</tr>
</tbody>
</table>

ALTERNATE SOURCES OF INCOME

The delegates viewed off-farm income opportunities as a two-edged sword. Many felt they were necessary and recommended research and other government action to create more jobs in rural areas so that farmers could continue in farming, yet supplement the household income.

74 Ibid.
Many also expressed concerns about the stresses which off-farm employment put on the family. Such situations are counter to the desired life style of farm families. Delegates saw the need for off-farm jobs, hoping that a given farm family could move through such a stage, once the farm income had improved or the farm had grown to a full-time operation. In short, there was considerable concern about the role of off-farm employment in the life of the small-farm family. Table XI indicates the top four problem areas as identified by program participants in the area of alternative sources of income.

TABLE XI

PROBLEMS PERCEIVED BY SMALL-FARM OPERATORS CONCERNING ALTERNATIVE SOURCES OF INCOME

<table>
<thead>
<tr>
<th>Problem Rank</th>
<th>Problem Description</th>
<th>Problem Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Suggestions are needed on self-help on farm projects.</td>
<td>4.25</td>
</tr>
<tr>
<td>2</td>
<td>Extra-income jobs are needed to supplement farm income.</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Off-farm jobs often interfere with taking care of family responsibilities;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>often-times, in taking on off-farm jobs, the wife has to neglect household chores and children.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Supplemental sources of income are needed for farm-family members on small farms.</td>
<td>4.00</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>3.43</td>
</tr>
</tbody>
</table>

75Ibid.
U.S.D.A. CONFERENCE SUMMARY

There were underlying themes present in the work-group reports for nearly all of the issue areas. Strong sentiment was expressed that the small-family farm, and the cultural traditions and values of which it is a part, is cherished and worthy of preservation. The farmers who came to Des Moines did not ask to be freed from the farm; they asked for the opportunity to maintain their way of life.

The delegates, however, expressed a sense of powerlessness to affect the decisions which determine if that opportunity will exist. Larger, or more organized groups, including government, business, labor and consumers, were seen as barriers against their survival. Perceived government barriers included regulating farmers, pursuing cheap food and following the policy that replacement of labor with capital is the most efficient. Machinery corporations were perceived to be acting against the small farmer by producing ever-bigger and more complex machinery, while ignoring the technological needs of small farmers. Organized labor was described as pushing up farm-input prices with higher salaries. Food corporations and consumers were seen as powerful groups in keeping farm prices low. All of these groups were seen as power actors who should have less impact on policies which work against the small farmer.

Thus, while chastising government involvement in agriculture for its often harmful effects, the delegates asked for government protection and assistance in surviving against their stronger, more organized adversaries. They asked that government commit itself to
preservation of the small-family farm and that the man-made laws, rules, institutions and technologies which determine what opportunity exists and to whom it is accorded be adapted to their survival.
Chapter 5

FUTURE OF SMALL FARMS

The desirability of and success of past adjustments in agriculture are debated issues. So, too, is the direction of future adjustments and the role of and prospects for small farms. In this section, the issues involved are discussed, and implications are drawn pertaining to the future of small farms.

The basic success of changes in agriculture has been the provision of ample food supplies at low cost as a result of increases in production and productivity. For example, Loomis and Barton estimated that "it would have cost the economy an additional 9.6 billion dollars annually to produce the 1957 output of farm products with resources having a productivity of 1940 levels."\(^{76}\)

Criticisms of the adjustment process center around: first, its failure to provide adequate income-earning opportunities for some of the people either displaced from or remaining in farming; and, second, the costs, both private and social, associated with the enormous human migration that has resulted from the changes in the agricultural sector. The adjustment process has involved a substantial part of the total population and labor force. In 1940, twenty-five percent of the nation's population lived on farms. Among these persons, there have

\(^{76}\)Dale E. Hathaway, op. cit., p. 311.
been many who have not been able to successfully adjust to the rapid changes. Some families continue to farm and remain with low farm sales. The adjustment process has failed to benefit these people; the new technology and mechanization have worked to their disadvantage. They are the ones who are least able to compete with large-scale commercial agriculture. Research indicates it is unlikely these individuals could find nonfarm employment that would substantially raise their income levels.

Changes in agriculture have created a tremendous migration out of rural areas. Often, only the youngest, best educated and most able individuals benefit from the process. Many of those migrating "have inadequate education and training for nonfarm jobs." Consequently, they acquire low-paying jobs and "have greatest difficulty in rising to better jobs and higher incomes." Many simply do not make the transition. "Migration to a city is, therefore, no guarantee of escaping poverty." A Tennessee Valley Authority (TVA) study found that "the majority of white and black farm operators who moved into the nonfarm sector between 1960 and 1965 experienced, on the average, 


78Dale A. Hathaway, op. cit., p. 300.

79Ray Marshall, op. cit., p. 22.

80Ibid.

81President's Commission on Rural Poverty, op. cit., p. 43.
net losses in income."82 There is also evidence that those who do
migrate tend to be "the best educated, most adaptable portion of the
rural population."83

Historically, it has been believed that farm production would
remain competitive because of the large number of farms, the
traditional independence and conflicting interests of farmers and the
substitutability of many farm products. However, not all products are
good substitutes, and the concentration of food production and the
magnitude of processing not only increase the potential for large
organizations to control farm production, prices and profits, but also
indicate that the greatest beneficiaries of such restrictions would
not be family farmers.

There is concern that the corporate farms may prove to be less
efficient than owner-operated farms. U.S.D.A.'s Economic Research
Service (ERS) recently found that "the fully-mechanized, one-man farm
... is generally a technically efficient farm ... The incentive
for increasing farm size and production is not to reduce costs per
unit of production ... but to increase the volume of output, and
total income."84 There is also evidence that owner-operated farms are
more efficient than those operated under other management

82 Gerald Williams, "Significance and Purpose of Conference,"
Proceedings of the Workshop on Methods of Working with Limited-Resource
Farmers, Bulletin Y-44 (Muscle Shoals, Alabama: Tennessee Valley
Authority, 1972).


84 Warren R. Bailey, The One-Man Farm (Washington, D. C.:
arrangements. However, the advantages of access to capital, diversity of investments, the ability to withstand unexpected losses and the control of markets may be giving the competitive advantage to larger farm operations. As a result, improvements in farm productivity could be lost, or their rate of achievement slowed, even if these owner-operated farms are more economically efficient than the large-scale farm operations.

Finally, there is concern that our success in food production is heavily dependent on energy sources that are going to become increasingly costly or unavailable. Stravrianora concluded that one of two major factors contributing to the transformation of agricultural production has been "the availability of cheap oil for operating . . . machinery and for manufacturing the chemical fertilizers, insecticides and herbicides now being used in enormous quantities." In terms of calories of fossil fuel energy used to produce a calorie of food, American agriculture is far less efficient than simpler, labor-based systems.

All of these issues weigh upon the future of small farms, either in the short-run or in the more distant future. The "success model" asserts that our technology has created abundant food supplies, that people should continue to move out of agriculture and into other

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productive areas, that concentration and "industrialization" of food production and marketing is efficient and desirable, and that problems of energy, health and pollution will be solved by further technological developments. According to this model, another one million small farms will go out of business in the near future. The small-farm poverty problem will be solved and public policy should concentrate on the promotion-oriented research and technology. In direct contrast, the "critics model" claims that our production systems are too capital intensive, that the social costs of rural-urban migration have been too high, that concentration within the food industry is economically, politically and socially undesirable, that pollution and health dangers associated with agricultural technology create a cost and a menace for our population, that fossil energy will become unavailable and that the solution to these problems will come from decentralization, the greater use of labor in agriculture and the use of less mechanization and energy-based technology. According to this model, smaller scales of farming operations and more farms are the solution to present social and technical problems.

Depending on which of these models holds true in the future and prevails in public policy, there may or may not be a substantial number of small farms in fifty years. For the immediate future, proponents of both models agree that small farmers will come under continuing pressure from forces similar to those operating since 1940. One-man operations may be the most efficient, but they are not necessarily small in size. It was estimated by U.S.D.A.'s Economic Research Service that efficient scales of one-man farming operations are
one thousand, nine hundred, sixty acres of wheat and barley in Montana, eight hundred acres of corn and soybeans in the Mississippi Delta and two hundred acres of vegetables in California. Tweeten and Schriener estimate that farms with less than thirty thousand dollars gross sales were of "less than optimal long-run firm size." These measures indicate that small farmers with limited acreages and limited gross sales will have difficulty competing with larger farms, even if these larger farms are one-man, family operations.

Beyond the next decade, projections concerning small farms become somewhat speculative. Perhaps the situation will be so heterogeneous as to defy classification. There is evidence that the "success" model will depict the future. New developments such as genetic engineering may again revolutionize agricultural production. Alternative sources of energy may be developed, and pollution and health problems overcome. There is also evidence that the "critic" model will in part be fulfilled. There is public pressure to eliminate poverty. People-related, rather than production-related, problems may become our nation's highest priority. Increased energy costs may shift the balance towards labor, as opposed to capital, and a revival of rural areas may make small farming convenient and attractive.

88 Warren R. Bailey, op. cit.
Chapter 6

PART-TIME FARMING -- DUAL OCCUPATIONS

In many communities, rural families vary greatly in their dependence on farming. The extremes are obvious: commercial farm families with no income outside the farm, and families living in the country but depending entirely on nonfarm income or work. In between are families whose income is from different combinations of farm work, nonfarm work and investments. This is the largest group of small farmers in the nation: those with dual occupations. In areas such as southern Illinois, where one finds many of these variations, agricultural statistics, particularly those dealing with average incomes of farm groups, are often inadequate. They fail to give complete or accurate descriptions of many rural families.

In the 1940's, farm families were divided into six groups according to the months of farm work and nonfarm work performed by the family. The six groups were: 1) full-time farmers; 2) small-scale farmers, those doing one to eight months of farm work and no regular nonfarm work; 3) part-time farmers, those doing four or more months of farm work and employed in nonfarm work; 4) nonfarm workers with food production; 5) full-time, nonfarm workers; and, 6) retired rural residents.91

Today the number of days worked off the farm is considered the

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variable in determining the number of part-time farmers. The farmer who works off the farm for more than a certain number of days during the year, e.g., one hundred or more, is classified as a part-time farmer. However, the definition of a part-time farmer is arbitrary.

Instead of declining, part-time farming is becoming an increasingly important aspect of American agriculture. In the 1920's and 30's, many people engaged in farm and off-farm work to increase their incomes; by 1930, sixteen percent of all farmers in the United States were classed as part-time farmers (i.e., they worked one hundred or more days off the farm). That proportion increased to forty percent in 1969. Moreover, while the total number of farmers dropped by fifty percent between 1950 and 1969, the number of part-time farmers has remained relatively stable. This factor alone points to the importance of part-time farming in American agriculture.\(^{92}\)

The importance of these trends for institutions and personnel associated with the agricultural industry cannot be overlooked. Part-time farming as an institution presents problems different from those inherent in full-time farming.

Declines in the number of farms and in the number of farm workers, coupled with the increase in size of farms and in productivity per worker, have been important long-term trends. Recently, these trends have shown signs of reaching stability. A 1976 Economic Research Service report indicates that while the number of farms in the United States declined by over thirteen percent from 1964 to 1969,

the number dropped by less than six percent between 1969 and 1974. The average size of farms, which had increased by eleven percent between 1964 and 1969, increased by only four percent from 1969 to 1974.\textsuperscript{93}

These long-term trends, which have signaled dramatic structural change in American agriculture over the past three-quarters of a century, seem to be leveling off. But, other trends have persisted, some have accelerated, and some continue to reflect a restructuring of agriculture today and, possibly, in the future. For example, the capital requirements for engaging in agricultural production have been accelerating. At present, the per-farm value of farm assets is increasing geometrically, and the costs of farm inputs: labor, farm machinery, fertilizer and energy, have been increasing rapidly. These trends and their implications for freedom of entry into farming, for the transfer of farms from one generation to another, and for the organizational life of rural communities, have aroused the concern of both sociologists and economists.\textsuperscript{94}

Another trend which is just now receiving much attention is the increasing proportion of farmers with off-the-farm, dual occupations. While the contract work with other farms has long been a part of traditional agriculture, the number of farmers and their families with employment outside of agriculture has increased rapidly.

\begin{itemize}
\item \textsuperscript{94}Luther Tweeten, 1970 Foundations of Farm Policy (Lincoln, Nebraska: University of Nebraska Press).
\end{itemize}
An important question in this connection is whether the class of part-time farmers is composed of families for whom this pattern of work is a temporary or an enduring one. The answer to this question requires an investigation of dual careers. Several studies suggest that for a substantial proportion of persons with dual occupations, the pattern is relatively stable. Studies of New York farmers during the 1950's (Reeder and LeRay, 1970)\(^{95}\) found that the dominant trend was toward a decreased dependency on farming as an occupation. But, in a given year, from one-half to two-thirds were engaged in part-time farming. A national study (Loomis, 1965)\(^{96}\) indicated that dual job-holders averaged eight to twelve years of off-farm work and had worked for the same employer for at least five years.

A 1974 Kentucky study (Justus and Brown)\(^{97}\) of one hundred, twenty-one farmers with dual occupations indicates that both on-farm and off-farm work commitments have been relatively stable. Of those working off the farm at all in 1974, eighty-two percent had been doing


\(^{97}\)Fred Justus, Jr., and Vernon C. Brown, Part-Time Farming in Kentucky (Lexington, Kentucky: University of Kentucky, College of Agriculture, C.E.S., Ag. Economics Extension Information Series No. 15, 1974).
so five years earlier, in 1969, and of those surveyed who had ever worked off the farm, eighty-five percent were doing so in 1974. Most (eighty-four percent) worked off the farm two hundred or more days in 1974, and one-half obtained seventy-five percent or more of their income in 1973 from off-farm work. The typical part-time farmer had had a dual occupation for 8.4 years, was forty-three years old and had completed high school. Most of these part-time farmers planned to continue working off the farm for the next several years. Although one out of nine planned to reduce farming operations in the future, none planned to abandon farming.  

These findings suggest that several common assumptions about part-time farming which have helped to shape past policies may need to be re-examined. First, in part-time farming operations, labor efficiency rather than capital efficiency is the most important consideration. Typically, the capital efficiency has been considered to be the primary consideration. Second, only a small portion of the part-time farmers producing two thousand, five hundred dollars or more in gross sales are marginal and in danger of being forced out of agriculture. Diversification in farm production and in nonfarm occupations prevents losses in any one farm enterprise from being fatal to their economic situation. The small, full-time farmer, rather than the small, part-time farmer, is the least secure. As part-time farmers comprise an important part of the rural population, the development of rural policies and of programs of various agencies

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98Ibid., pp. 8-12.
serving rural people should be shaped to solve a broader range of problems and to meet the needs of those pursuing dual occupational careers.

An increasing number of Illinois farmers have turned to off-farm employment as a means to supplement their farm income. According to census of agriculture data, nearly fifty-two percent of all Illinois farmers held off-farm jobs in 1969, as compared to forty-two percent in 1964. The proportion of Illinois farmers working one hundred days or more off the farm has increased steadily.99

A 1971 study of Illinois farmers by Hanson and Spitze examined off-the-farm employment earnings by Illinois farmers.100 The study showed an increasingly large portion of farm families had combined farming activities with off-farm employment. Dual occupations provide a productive outlet for excess farm labor and supplement farm income flows, thereby raising farm-family income to more satisfactory levels, particularly for smaller-sized farms. As technology continues to reduce farm-labor requirements, more farmers will find higher returns to their excess labor through dual employment, as opposed to further intensifying their farming operations.

Illinois farmers were also found in this study to depend upon off-farm income for more than half of their total family income.


100 R. J. Hanson and G. F. Spitze, "Off-Farm Employment Earnings by Farmers with Low Farm Incomes," Illinois Research (Illinois Agricultural Experiment Station, Fall 1972), pp. 6-7.
Of course, many farm families having smaller units earned more from off-farm, than farm employment. However, off-farm income was also substantial for many large commercial operators with relatively high net-farm incomes. Off-farm income was found to even out the otherwise highly-skewed distribution of net-farm income.\textsuperscript{101}
Chapter 7

RESEARCH METHODOLOGY

Described in this chapter is the scope of the study, the nature of the data, the sampling procedure, the interview schedule, the interview procedures and the analysis of data.

SCOPE OF THE STUDY

This study utilized gross farm income as the basis for selecting sample participants. Face-to-face interviews were conducted with two and one-fourth percent of all farmers in Extension Region X who grossed under twenty thousand dollars from farm sales in 1973. Using the 1974 Census of Agriculture figures, eight farmers were interviewed in Franklin County, three in Gallatin, ten in Hamilton, two in Hardin, ten in Jackson, fifteen in Jefferson, seven in Johnson, eight in Massac, ten in Perry, four in Pope, seven in Saline, nine in Union and seven in Williamson County. Due to honored requests, no farmers were interviewed in Alexander or Pulaski Counties. A total of one hundred interview schedules were completed.

The research plan followed in implementing the study involved five major operations: 1) development of an interview schedule to obtain certain information, opinions and attitudes held by small-farm operators in the southern Illinois area; 2) pretesting the interview schedule with a select number of respondents similar to the study group; 3) selection of the sample of small farmers to be studied;
4) collection of data through personal interviews; and, 5) analysis
and evaluation of responses obtained.

NATURE OF THE DATA

Two kinds of research data were utilized in this study. They
were primary data and secondary data. The nature of these two types
of data is explained briefly in the following paragraphs.

The Primary Data

Small farmers' responses to the interview schedule developed
for use in the study represented the main source of primary data.

The Secondary Data

Information from U. S. Current Population Reports, U. S. Bureau
of the Census, Illinois Office of Education materials, ISEIRD data
system and the Illinois Experiment Station reports constituted
secondary data utilized. Published studies and texts, pertinent
government documents and other published and unpublished information
dealing with the target area and small farmers constituted additional
secondary data critical to the study.

THE SAMPLING PROCEDURE

Subjects in the study area were farm operators who grossed less
than twenty thousand dollars from farm sales in 1977 and who lived in
the rural areas of southern Illinois. More specifically, within the
fifteen-county area of Extension Region X. The 9,580 farmers
recorded in the 1974 Census of Agriculture were used as the basis for determining the sample. A sample of two and one-fourth percent of those grossing less than $20,000 in each county within the target area were sampled and included in the findings.

A random, grid-point, sample procedure was utilized for each county. The farmers closest to the grid point who qualified by gross-farm-sales income were interviewed.

THE INTERVIEW SCHEDULE

An interview schedule developed specifically for use in the study was used to obtain information from small-farm operators (see Appendix A). A 98-question interview schedule was administered to the one hundred operators of small farms during the summer and early fall of 1978. The results of the findings from these responses are presented in the following chapters.

ANALYSIS OF DATA

Each interview schedule was edited by the researcher to insure accuracy and completeness. At the conclusion of all interviews, open-end responses provided by respondents were utilized in formulating code categories for the following items: 1) varieties of wheat; 2) other crops which produced income; 3) membership in types of farm organizations; 4) reasons for farming; 5) information needed to help in farming; and 6) location suggested for holding educational
meetings. Interview schedules were then coded and punched on cards for computer processing in the Louisiana State University Computer Research Center. Following preliminary analysis, they were rerun on the University of Illinois computer under release time from the Agriculture Economics Department.

Days of employment off the farm was used as the dependent variable. Farming characteristics, management practices and socio-economic variables were the independent variables.

The chi-square test of independence was used in determining differences in small-farm operators by type of small farm on discrete variables.

In order that data convey the extent of association of the more significant variables, the .05 level of probability was considered statistically significant. Where a statistical test resulted in a probability greater than .05, results were not considered significant for this study. Sample size, sampling procedures and the nature of the study were factors considered in establishing the probability level.
Chapter 8

SOCIO-ECONOMIC CHARACTERISTICS OF TARGET AREA

In this chapter and the following, the results of a personal-interview survey to determine the socio-economic characteristics of the target area, and of small-farm operators in southern Illinois, are presented and discussed. Since the socio-economic characteristics of an area have a dramatic effect on the people of the area, as well as on the availability of services in and the needs of an area, this chapter serves as a macro-profile of the fifteen counties of southern Illinois known as Extension Service Region X.

The Region X area is composed of a wide variance in terrain, management ability, operators' ages and incomes and population density. In developing any educational programs, it is important to know the audience. Those things which affect the audience include socio-economic characteristics of the area. Through the use of census data, Illinois Social and Economic Indicators for Rural Development (ISEIRD) and current population data, we can place the small-farm family in a setting which helps describe the way of life.

The earliest movement of settlers into the region occurred in the early nineteenth century. These early residents of the area were often engaged in providing goods and services to other settlers moving westward. Early economic activity was dominated by agriculture, primarily on a subsistence level. Few farms were of substantial size, a characteristic which held true until recent times.
The advent of the railroad in 1854 introduced a new impetus into the area's economic structure. As the rail lines expanded, new communities developed serving as focal distribution centers for agricultural products. Though this improved transportation increased the viability of raising agricultural cash crops, the relatively poor soil and unpredictable climate left most farms at subsistence levels.

The growth of the railroads led to a demand for coal to fuel locomotives. Though coal was mined in the area as early as 1810, the importance of mining was minimal during the 1800's. Steady growth of the coal industry occurred and accelerated rapidly after 1900. Communities developed near virtually every new mine shaft. Coal mining became by far the dominant economic activity of the early 1900's. In 1923, employment in the industry peaked, after which time a combination of events—the Great Depression, reduced demand for coal, the introduction of new mine machinery—led to a reduction in the level of activity in mining and, hence, a period of stagnation in the area economic environment.

The three major sectors of the regional community: agriculture, railroads and coal mining, all suffered great losses of employment from the twenties through the period of World War II, leading to massive out-migration, chronic unemployment and general economic stagnation. While much of the rest of the nation saw a shift towards manufacturing and service sectors, this area was stymied by its remoteness from major markets, lack of high-speed transportation and a relatively unskilled labor force. General economic stagnation continued in the 1940's and 1950's.
A number of factors led to a stabilization of the regional economy during the late 1960's and 1970's:

1. The growth of Southern Illinois University in Carbondale from a small college to a major educational complex with a 1970 enrollment of over twenty-three thousand students has had a major impact on southern Illinois.

2. An emergence of a spirit of cooperation between and among previously rival communities and organizations has increased the potential for more equitable, efficient planning and development programs.

3. The development of the interstate systems including I-57, I-64 and I-24, coupled with other state and local highway improvements, has vastly improved the inter-regional flow of people and products, improving accessibility to and from major markets.

4. Basic improvements to community services and facilities, especially water supply and distribution (Rend Lake, Kinkaid Lake and Cedar Lake), modern airports (Southern Illinois, Mt. Vernon and Williamson County), power, education and sewage systems have increased the economic potential by improving the attractiveness of the region to prospective business, industry and labor.

Within the region are one hundred, forty-three incorporated municipalities, thirty-nine of which have populations of one thousand or more. The number of communities of these sizes suggests a rural area. In 1970, fifty-three percent of the region's population were
classified as rural residents. Because this is a rural area, agriculture has played a role in economic development.

EDUCATION

The major part of the region has been directly affected by Southern Illinois University. In addition to creating a great many employment opportunities and resultant incomes, many residents of the region utilize the university as a source of entertainment and culture. In the 1950's and early 1960's, numerous southern Illinois communities received assistance in community development and research efforts from Southern Illinois University.

Four junior college districts currently cover all of the region: Rend Lake, Southeastern, Shawnee and John A. Logan. The establishment of these community colleges required a great deal of cooperation and joint efforts between various communities and counties. The realization of those efforts continues to provide a strong tie between residents.

The educational level of all Region X counties, except Jackson, is below the state average. Jackson County is unique in that the second-largest state university, Southern Illinois University, is located within its borders.

The median average years of school completed for the region in 1970 was 9.2 years for adult males and 9.5 years for adult females. This is almost three years below the state averages of 11.7 and 12.1. Therefore, it should be assumed that the average educational level is low within the region. Table XII illustrates the fiftieth percentile
of school years completed for males and females as obtained from the
Annual Report of the Illinois Office of Education.102

TABLE XII

MEDIAN YEARS SCHOOL COMPLETED BY MALES AND FEMALES 25 YEARS AND
OLDER IN 1960 AND 1970 FOR REGION X COUNTIES.

<table>
<thead>
<tr>
<th>County</th>
<th>Males 25 and Over</th>
<th>Females 25 and Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>8.3</td>
<td>9.0</td>
</tr>
<tr>
<td>Franklin</td>
<td>8.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Gallatin</td>
<td>8.4</td>
<td>8.9</td>
</tr>
<tr>
<td>Hamilton</td>
<td>8.6</td>
<td>9.0</td>
</tr>
<tr>
<td>Hardin</td>
<td>8.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Jackson</td>
<td>10.0</td>
<td>12.4</td>
</tr>
<tr>
<td>Jefferson</td>
<td>8.7</td>
<td>10.3</td>
</tr>
<tr>
<td>Johnson</td>
<td>8.6</td>
<td>9.3</td>
</tr>
<tr>
<td>Massac</td>
<td>8.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Perry</td>
<td>8.7</td>
<td>9.3</td>
</tr>
<tr>
<td>Pope</td>
<td>8.3</td>
<td>8.8</td>
</tr>
<tr>
<td>Pulaski</td>
<td>8.2</td>
<td>8.7</td>
</tr>
<tr>
<td>Saline</td>
<td>8.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Union</td>
<td>8.6</td>
<td>9.1</td>
</tr>
<tr>
<td>Williamson</td>
<td>8.7</td>
<td>11.3</td>
</tr>
<tr>
<td>Median</td>
<td>8.6</td>
<td>9.2</td>
</tr>
<tr>
<td>State Median</td>
<td>9.1</td>
<td>11.7</td>
</tr>
</tbody>
</table>

The drop-out rate for high school is also much above the state average of 3.96 percent in 1975. Region X area had a median drop-out average of 5.83 percent, almost fifty percent higher than the state

Only Perry and Johnson Counties had rates below the state average. In Table XIII, the drop-out rate for Extension Region X in 1974 and 1975 is presented. A decline in the drop-out rate has occurred within the state between 1974 and 1975. No decrease has taken place within Region X. This is a major social economic problem for the area with little progress taking place.

**TABLE XIII**

**DROP-OUT RATES FOR SCHOOL YEARS 1974 AND 1975 FOR COUNTIES IN ILLINOIS EXTENSION REGION X**

<table>
<thead>
<tr>
<th>County</th>
<th>1974</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>6.50</td>
<td>8.27</td>
</tr>
<tr>
<td>Franklin</td>
<td>7.42</td>
<td>5.72</td>
</tr>
<tr>
<td>Gallatin</td>
<td>7.60</td>
<td>7.65</td>
</tr>
<tr>
<td>Hamilton</td>
<td>4.77</td>
<td>5.00</td>
</tr>
<tr>
<td>Hardin</td>
<td>9.26</td>
<td>5.48</td>
</tr>
<tr>
<td>Jackson</td>
<td>5.82</td>
<td>5.92</td>
</tr>
<tr>
<td>Jefferson</td>
<td>7.11</td>
<td>6.25</td>
</tr>
<tr>
<td>Johnson</td>
<td>3.41</td>
<td>3.22</td>
</tr>
<tr>
<td>Massac</td>
<td>5.89</td>
<td>9.43</td>
</tr>
<tr>
<td>Perry</td>
<td>3.89</td>
<td>3.78</td>
</tr>
<tr>
<td>Pope</td>
<td>2.88</td>
<td>6.99</td>
</tr>
<tr>
<td>Pulaski</td>
<td>3.85</td>
<td>5.83</td>
</tr>
<tr>
<td>Saline</td>
<td>7.70</td>
<td>7.51</td>
</tr>
<tr>
<td>Union</td>
<td>3.91</td>
<td>4.76</td>
</tr>
<tr>
<td>Williamson</td>
<td>5.69</td>
<td>5.27</td>
</tr>
<tr>
<td>Median</td>
<td>5.82</td>
<td>5.83</td>
</tr>
<tr>
<td>State</td>
<td>4.25</td>
<td>3.96</td>
</tr>
</tbody>
</table>

POPULATION OF COUNTIES

In order to plan for the effective delivery of educational programs within the region, it is necessary to know the characteristics of the population to be served. The density of population for the area is low, in relation to that of Illinois. Although some counties have over 50,000 persons, others have less than 5,000 persons. The median county population in 1960 was 16,061. In 1970, it had dropped to 13,889. This is a median of 15,000 people per county, below the Illinois average of 28,789. In Table XIV, the population of counties in 1960 and 1970 compared to the median of the state population.

---

TABLE XIV

POPULATION OF COUNTIES IN 1960 AND 1970 FOR ILLINOIS
EXTENSION REGION X

<table>
<thead>
<tr>
<th>County</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>16,061</td>
<td>12,015</td>
</tr>
<tr>
<td>Franklin</td>
<td>39,281</td>
<td>38,329</td>
</tr>
<tr>
<td>Gallatin</td>
<td>7,638</td>
<td>7,418</td>
</tr>
<tr>
<td>Hamilton</td>
<td>10,010</td>
<td>8,665</td>
</tr>
<tr>
<td>Hardin</td>
<td>5,879</td>
<td>4,914</td>
</tr>
<tr>
<td>Jackson</td>
<td>42,151</td>
<td>55,008</td>
</tr>
<tr>
<td>Jefferson</td>
<td>32,315</td>
<td>31,446</td>
</tr>
<tr>
<td>Johnson</td>
<td>6,928</td>
<td>7,550</td>
</tr>
<tr>
<td>Massac</td>
<td>14,341</td>
<td>13,889</td>
</tr>
<tr>
<td>Perry</td>
<td>19,184</td>
<td>19,757</td>
</tr>
<tr>
<td>Pope</td>
<td>4,061</td>
<td>3,857</td>
</tr>
<tr>
<td>Pulaski</td>
<td>10,490</td>
<td>8,741</td>
</tr>
<tr>
<td>Saline</td>
<td>26,227</td>
<td>25,721</td>
</tr>
<tr>
<td>Union</td>
<td>17,645</td>
<td>16,071</td>
</tr>
<tr>
<td>Williamson</td>
<td>46,117</td>
<td>49,021</td>
</tr>
<tr>
<td>Median</td>
<td>16,061</td>
<td>13,889</td>
</tr>
<tr>
<td>State Median</td>
<td>25,220</td>
<td>28,789</td>
</tr>
</tbody>
</table>


AGE

Extension Region X residents were older by four years than the state average in 1970. The residents of some counties were more than twenty percent older than the Illinois average. Alexander, Franklin, Hamilton, Saline and Union Counties were the site of a high percentage of older persons. On the other side, Jackson County
has a median age of twenty-three, influenced by Southern Illinois University. Table XV illustrates the Region X county populations by age, as a percentage of those residents over eighteen years.

**TABLE XV**

PERCENT OF COUNTY POPULATION EIGHTEEN YEARS OF AGE AND OVER IN 1960 AND 1970 AND MEDIAN AGE FOR COUNTIES IN EXTENSION REGION X

<table>
<thead>
<tr>
<th>County</th>
<th>% 18 or Older</th>
<th>Median Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>65.5</td>
<td>68.3</td>
</tr>
<tr>
<td>Franklin</td>
<td>70.5</td>
<td>71.9</td>
</tr>
<tr>
<td>Gallatin</td>
<td>64.9</td>
<td>66.8</td>
</tr>
<tr>
<td>Hamilton</td>
<td>69.2</td>
<td>71.0</td>
</tr>
<tr>
<td>Hardin</td>
<td>64.6</td>
<td>70.0</td>
</tr>
<tr>
<td>Jackson</td>
<td>70.1</td>
<td>76.2</td>
</tr>
<tr>
<td>Jefferson</td>
<td>66.7</td>
<td>67.7</td>
</tr>
<tr>
<td>Johnson</td>
<td>67.9</td>
<td>70.4</td>
</tr>
<tr>
<td>Massac</td>
<td>66.2</td>
<td>68.0</td>
</tr>
<tr>
<td>Perry</td>
<td>67.8</td>
<td>69.4</td>
</tr>
<tr>
<td>Pope</td>
<td>69.3</td>
<td>68.8</td>
</tr>
<tr>
<td>Pulaski</td>
<td>63.6</td>
<td>64.7</td>
</tr>
<tr>
<td>Saline</td>
<td>70.7</td>
<td>72.3</td>
</tr>
<tr>
<td>Union</td>
<td>72.5</td>
<td>72.9</td>
</tr>
<tr>
<td>Williamson</td>
<td>69.2</td>
<td>70.3</td>
</tr>
</tbody>
</table>

Median 67.9 67.4 36 35

State Median 66.1 32 31

PLACE OF RESIDENCE

Even though the Region X area is considered by many to be the most "rural" area of the state, ISEIRD data\textsuperscript{105} indicates the percent of farm population for the region as only thirteen percent, as compared to a state average of twenty-seven percent. Table XVI, taken from the 1974 Census of Agriculture, indicates forty-one percent of the area is rural nonfarm, as compared to an Illinois average of thirty-eight percent.

Gallatin County was the only county in 1970 with an above-state-average percent of the population considered as farm. Franklin, Jackson, Pulaski, Saline and Williamson Counties had less than ten percent of the population as farm.

<table>
<thead>
<tr>
<th>County</th>
<th>Urban</th>
<th>Rural Nonfarm</th>
<th>Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>52</td>
<td>38</td>
<td>10</td>
</tr>
<tr>
<td>Franklin</td>
<td>49</td>
<td>45</td>
<td>6</td>
</tr>
<tr>
<td>Gallatin</td>
<td>0</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Hamilton</td>
<td>33</td>
<td>37</td>
<td>30</td>
</tr>
<tr>
<td>Hardin</td>
<td>0</td>
<td>88</td>
<td>13</td>
</tr>
<tr>
<td>Jackson</td>
<td>60</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Jefferson</td>
<td>51</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td>Johnson</td>
<td>0</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Massac</td>
<td>50</td>
<td>36</td>
<td>14</td>
</tr>
<tr>
<td>Perry</td>
<td>51</td>
<td>37</td>
<td>12</td>
</tr>
<tr>
<td>Pope</td>
<td>0</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>Pulaski</td>
<td>0</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>Saline</td>
<td>52</td>
<td>41</td>
<td>7</td>
</tr>
<tr>
<td>Union</td>
<td>30</td>
<td>57</td>
<td>14</td>
</tr>
<tr>
<td>Williamson</td>
<td>57</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>49</strong></td>
<td><strong>41</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>State</strong></td>
<td><strong>44</strong></td>
<td><strong>38</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>


**INCOME LEVEL OF TARGET AREA**

Rural families historically have had lower incomes than urban dwellers. The median income of rural nonfarm families in 1969 was eighty-one percent of that of urban families. Farm-family-median income was only sixty-nine percent of that of urban counterparts in
1969. However, these proportions were higher than those in 1959.

In 1970, the poverty level for all unrelated individuals was $1,834. For all families it was $3,384. Those with incomes below these levels were living in officially-defined poverty. None of the counties had family income in 1960 or 1970 low enough to be considered at poverty levels, although there were families in each county which would have been considered individually at this level.

As seen in Table XVII, the median family income showed a substantial increase from 1960 to 1970 from $3,502 in 1960 to $6,857 in 1970. This level was still $2,046 below the median state income in 1970. Table XVIII illustrates the number of persons below the poverty levels in 1960 and 1970 in each of the region's counties.

TABLE XVII
MEDIAN FAMILY INCOME, IN DOLLARS, FOR COUNTIES IN ILLINOIS EXTENSION REGION X DURING 1960 and 1970

<table>
<thead>
<tr>
<th>County</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>3146</td>
<td>5471</td>
</tr>
<tr>
<td>Franklin</td>
<td>4092</td>
<td>6833</td>
</tr>
<tr>
<td>Gallatin</td>
<td>2711</td>
<td>7285</td>
</tr>
<tr>
<td>Hamilton</td>
<td>3284</td>
<td>5870</td>
</tr>
<tr>
<td>Hardin</td>
<td>3136</td>
<td>5701</td>
</tr>
<tr>
<td>Jackson</td>
<td>4671</td>
<td>7918</td>
</tr>
<tr>
<td>Jefferson</td>
<td>4418</td>
<td>7292</td>
</tr>
<tr>
<td>Johnson</td>
<td>3097</td>
<td>6658</td>
</tr>
<tr>
<td>Massac</td>
<td>4095</td>
<td>7025</td>
</tr>
<tr>
<td>Perry</td>
<td>4358</td>
<td>7880</td>
</tr>
<tr>
<td>Pope</td>
<td>2787</td>
<td>5041</td>
</tr>
<tr>
<td>Pulaski</td>
<td>2789</td>
<td>4931</td>
</tr>
<tr>
<td>Saline</td>
<td>3502</td>
<td>6857</td>
</tr>
<tr>
<td>Union</td>
<td>4043</td>
<td>7113</td>
</tr>
<tr>
<td>Williamson</td>
<td>4465</td>
<td>7687</td>
</tr>
<tr>
<td>Median</td>
<td>3502</td>
<td>6857</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>4886</td>
<td>8903</td>
</tr>
</tbody>
</table>

TABLE XVIII

NUMBER OF PERSONS BELOW POVERTY LEVELS IN 1960 AND 1970 IN COUNTIES IN ILLINOIS EXTENSION REGION X

<table>
<thead>
<tr>
<th>County</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>3896</td>
<td>4548</td>
</tr>
<tr>
<td>Franklin</td>
<td>8901</td>
<td>8354</td>
</tr>
<tr>
<td>Gallatin</td>
<td>1679</td>
<td>1537</td>
</tr>
<tr>
<td>Hamilton</td>
<td>2150</td>
<td>2351</td>
</tr>
<tr>
<td>Hardin</td>
<td>1127</td>
<td>1448</td>
</tr>
<tr>
<td>Jackson</td>
<td>11250</td>
<td>10041</td>
</tr>
<tr>
<td>Jefferson</td>
<td>7285</td>
<td>6190</td>
</tr>
<tr>
<td>Johnson</td>
<td>1465</td>
<td>1414</td>
</tr>
<tr>
<td>Massac</td>
<td>3005</td>
<td>3150</td>
</tr>
<tr>
<td>Perry</td>
<td>3996</td>
<td>3118</td>
</tr>
<tr>
<td>Pope</td>
<td>846</td>
<td>1456</td>
</tr>
<tr>
<td>Pulaski</td>
<td>2183</td>
<td>3865</td>
</tr>
<tr>
<td>Saline</td>
<td>5912</td>
<td>6091</td>
</tr>
<tr>
<td>Union</td>
<td>3520</td>
<td>3047</td>
</tr>
<tr>
<td>Williamson</td>
<td>9529</td>
<td>8578</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>3520</td>
<td>3150</td>
</tr>
<tr>
<td><strong>State Average</strong></td>
<td>5238</td>
<td>3192</td>
</tr>
</tbody>
</table>


DEVELOPMENT

The area does not contain a Standard Metropolitan Statistical Area (SMSA). Rather, a large number of smaller communities have developed, forming a dispersed population pattern. Carbondale, the area's largest city, has an estimated population of 27,382 persons, including university students, and is located near the center of
the area's major growth corridor stretching from Murphysboro east through the city of Marion. A secondary growth corridor exists between Harrisburg and Eldorado, and a third major growth area is the sprawling Mt. Vernon area.

AGRICULTURE WITHIN THE REGION

When describing the general agriculture setting of the target audience, much use of the agriculture census is made. It should be understood that the definition of a farm has changed between censuses.

For each of the twenty census of agriculture, except the first taken in 1840, the agency responsible for conducting the census has established minimum criteria which define a farm for the purpose of the census. As the nation has developed and grown, agriculture also has changed and grown. Thus, the minimum criteria for the definition of a farm have changed.

In 1975, the Department of Commerce announced that the definition of a farm, for purposes of publishing the 1974 census data, was any establishment which during the census year had or normally would have had sales of agricultural products of one thousand dollars or more. This definition differs from the earlier definition in two respects: 1) the criterion for number of acres in place has been deleted; and, 2) the criterion for minimum value of agricultural products sold has been changed to one thousand dollars. 112

1121974 Census of Agriculture, Vol. 1, Part 13, Illinois, the introduction.
Data for "all farms" for 1974 are based on the new definition so that one must be cautious in comparing the 1974 data with that of earlier censuses, including the 1969 census. In general, the data for farms with $2,500 or more value of sales remain unchanged.

According to the 1974 U. S. Census of Agriculture, there were 9,584 farms in this fifteen-county area of the state with sales of $237,596,000. Illinois had 111,049 farms with a total value of product sold in 1974 of 4.6 billion dollars. Region X is composed of about nine percent of the state's farms, but producing only about four percent of its value of product sold.

In Table XIX, the number of farmers and value of product sold are presented for each of the fifteen counties in Region X. The value of product sold varied from a low of $4,966,000 in forested Pope County to a high of over $19 million in the more fertile lands of Gallatin and Jefferson Counties.
### TABLE XIX
NUMBER OF FARMS AND VALUE OF PRODUCT SOLD BY COUNTIES IN ILLINOIS EXTENSION REGION X IN 1973

<table>
<thead>
<tr>
<th>County</th>
<th>Number of Farms</th>
<th>Value of Product Sold ($1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>276</td>
<td>6,717</td>
</tr>
<tr>
<td>Franklin</td>
<td>814</td>
<td>15,190</td>
</tr>
<tr>
<td>Gallatin</td>
<td>368</td>
<td>19,643</td>
</tr>
<tr>
<td>Hamilton</td>
<td>858</td>
<td>18,005</td>
</tr>
<tr>
<td>Hardin</td>
<td>206</td>
<td>1,730</td>
</tr>
<tr>
<td>Jackson</td>
<td>874</td>
<td>17,247</td>
</tr>
<tr>
<td>Jefferson</td>
<td>1,266</td>
<td>19,493</td>
</tr>
<tr>
<td>Johnson</td>
<td>524</td>
<td>6,839</td>
</tr>
<tr>
<td>Massac</td>
<td>622</td>
<td>10,123</td>
</tr>
<tr>
<td>Perry</td>
<td>870</td>
<td>17,165</td>
</tr>
<tr>
<td>Pope</td>
<td>391</td>
<td>4,966</td>
</tr>
<tr>
<td>Pulaski</td>
<td>364</td>
<td>7,971</td>
</tr>
<tr>
<td>Saline</td>
<td>666</td>
<td>14,002</td>
</tr>
<tr>
<td>Union</td>
<td>804</td>
<td>12,524</td>
</tr>
<tr>
<td>Williamson</td>
<td>681</td>
<td>6,965</td>
</tr>
<tr>
<td>Total</td>
<td>9,584</td>
<td>185,545</td>
</tr>
<tr>
<td>Illinois</td>
<td>111,049</td>
<td>4,665,390</td>
</tr>
</tbody>
</table>


The average value of product sold per farm was nineteen thousand, four hundred, twenty-five dollars for the region. When using the definition of under twenty thousand dollars gross as the criteria for a small farm, the region qualifies. Alexander and Gallatin Counties are the only counties within the region having average sales over the twenty thousand dollars. Table XX shows the relationship between the average market value of product sold per farm within the Region X area. There is a widening gap between the levels
of sales per farm in the southern Illinois region and the state as a whole. In 1969, farms in Region X counties sold fifty-eight percent of the Illinois average product per farm. In 1974, the Region X farms sold only forty-six percent of the Illinois average per farm.

TABLE XX

AVERAGE MARKET VALUE, IN DOLLARS, OF AGRICULTURE PRODUCT SOLD PER FARM IN 1974 AND 1969 FOR COUNTIES IN ILLINOIS EXTENSION REGION X

<table>
<thead>
<tr>
<th>County</th>
<th>1974</th>
<th>1969</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>24,336</td>
<td>12,455</td>
</tr>
<tr>
<td>Franklin</td>
<td>18,661</td>
<td>8,153</td>
</tr>
<tr>
<td>Gallatin</td>
<td>53,377</td>
<td>21,433</td>
</tr>
<tr>
<td>Hamilton</td>
<td>20,988</td>
<td>25,594</td>
</tr>
<tr>
<td>Hardin</td>
<td>8,396</td>
<td>4,837</td>
</tr>
<tr>
<td>Jackson</td>
<td>19,734</td>
<td>9,854</td>
</tr>
<tr>
<td>Jefferson</td>
<td>15,397</td>
<td>8,223</td>
</tr>
<tr>
<td>Johnson</td>
<td>13,051</td>
<td>18,601</td>
</tr>
<tr>
<td>Massac</td>
<td>16,274</td>
<td>8,481</td>
</tr>
<tr>
<td>Perry</td>
<td>19,730</td>
<td>11,028</td>
</tr>
<tr>
<td>Pope</td>
<td>12,701</td>
<td>7,564</td>
</tr>
<tr>
<td>Pulaski</td>
<td>21,898</td>
<td>11,458</td>
</tr>
<tr>
<td>Saline</td>
<td>21,025</td>
<td>9,977</td>
</tr>
<tr>
<td>Union</td>
<td>15,577</td>
<td>8,811</td>
</tr>
<tr>
<td>Williamson</td>
<td>10,227</td>
<td>17,323</td>
</tr>
<tr>
<td>Region X</td>
<td>19,425</td>
<td>12,253</td>
</tr>
<tr>
<td>State</td>
<td>42,012</td>
<td>21,141</td>
</tr>
</tbody>
</table>

Source: 1974 Census of Agriculture, Illinois

The size of the operations within the region are more homogenous than those of the state as a whole. Table XXI indicates that only twenty-eight percent of the Region X operations are under two thousand, five hundred dollars gross, and twelve percent of the Region X operations are forty thousand dollars or more in gross sales. Sixty
percent of all farming operations in the fifteen-county area grossed between two thousand, five hundred dollars and forty thousand dollars in 1974. Illinois as a whole has a higher percentage of operators below two thousand, five hundred dollars gross income and above forty thousand dollars gross income.

**TABLE XXI**

**NUMBER AND PERCENT OF ILLINOIS AND EXTENSION REGION X FARMS BY VALUE OF AGRICULTURAL PRODUCT SOLD, 1974**

<table>
<thead>
<tr>
<th></th>
<th>Illinois Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $2,500</td>
<td>14,722</td>
<td>33.8</td>
</tr>
<tr>
<td>$2,500 - $39,999</td>
<td>58,804</td>
<td>52.9</td>
</tr>
<tr>
<td>$40,000 and over</td>
<td>37,488</td>
<td>13.3</td>
</tr>
<tr>
<td>Total</td>
<td>111,014</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Region X Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $2,500</td>
<td>2,659</td>
<td>28.0</td>
</tr>
<tr>
<td>$2,500 - $39,999</td>
<td>5,729</td>
<td>60.0</td>
</tr>
<tr>
<td>$40,000 and over</td>
<td>1,196</td>
<td>12.0</td>
</tr>
<tr>
<td>Total</td>
<td>9,584</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: 1974 Census of Agriculture, Illinois

Table XXII provides a detailed breakdown of Region X counties by size of operation. Forty-seven percent of the farm operations grossing over two thousand, five hundred dollars grossed less than ten thousand dollars. Twenty-one percent had gross sales between ten thousand dollars and less than twenty thousand dollars. Fifteen percent of the farm operations grossed over twenty thousand dollars,
but less than forty thousand dollars, and seventeen percent had farm operation sales of over forty thousand dollars.

Within the target area, there are seven thousand, three hundred, thirty-one small-farm operations. The target area includes four thousand, six hundred, seventy-four operations grossing more than two thousand, five hundred dollars and less than twenty thousand dollars annually. Hardin, Gallatin, Alexander and Pulaski Counties would have the lowest potential audience, with less than one hundred, seventy-five per county. Hamilton, Jackson and Perry Counties have four hundred-plus potential target farm operations, while Jefferson County would have a total of six hundred, fifty-nine target small-farm operations.
TABLE XXII

NUMBER OF FARMS BY MARKET VALUE OF AGRICULTURAL PRODUCT SOLD FOR COUNTIES IN ILLINOIS EXTENSION REGION X, 1974

<table>
<thead>
<tr>
<th>County</th>
<th>Under $2,500</th>
<th>$2,500-$9,999</th>
<th>$10,000-$19,999</th>
<th>$20,000-$39,999</th>
<th>$40,000- and Over</th>
<th>Sales of $2,500 &amp; Under $20,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>67</td>
<td>92</td>
<td>43</td>
<td>29</td>
<td>45</td>
<td>135</td>
</tr>
<tr>
<td>Franklin</td>
<td>240</td>
<td>261</td>
<td>109</td>
<td>87</td>
<td>117</td>
<td>370</td>
</tr>
<tr>
<td>Gallatin</td>
<td>42</td>
<td>69</td>
<td>53</td>
<td>61</td>
<td>143</td>
<td>122</td>
</tr>
<tr>
<td>Hamilton</td>
<td>179</td>
<td>261</td>
<td>171</td>
<td>120</td>
<td>127</td>
<td>432</td>
</tr>
<tr>
<td>Hardin</td>
<td>98</td>
<td>76</td>
<td>16</td>
<td>7</td>
<td>9</td>
<td>92</td>
</tr>
<tr>
<td>Jackson</td>
<td>225</td>
<td>286</td>
<td>142</td>
<td>116</td>
<td>105</td>
<td>428</td>
</tr>
<tr>
<td>Jefferson</td>
<td>331</td>
<td>469</td>
<td>190</td>
<td>149</td>
<td>127</td>
<td>659</td>
</tr>
<tr>
<td>Johnson</td>
<td>178</td>
<td>211</td>
<td>63</td>
<td>41</td>
<td>31</td>
<td>274</td>
</tr>
<tr>
<td>Massac</td>
<td>142</td>
<td>240</td>
<td>110</td>
<td>74</td>
<td>56</td>
<td>350</td>
</tr>
<tr>
<td>Perry</td>
<td>179</td>
<td>286</td>
<td>173</td>
<td>119</td>
<td>113</td>
<td>459</td>
</tr>
<tr>
<td>Pope</td>
<td>152</td>
<td>128</td>
<td>54</td>
<td>29</td>
<td>28</td>
<td>182</td>
</tr>
<tr>
<td>Pulaski</td>
<td>101</td>
<td>121</td>
<td>53</td>
<td>33</td>
<td>56</td>
<td>174</td>
</tr>
<tr>
<td>Saline</td>
<td>172</td>
<td>208</td>
<td>89</td>
<td>82</td>
<td>115</td>
<td>297</td>
</tr>
<tr>
<td>Union</td>
<td>241</td>
<td>296</td>
<td>99</td>
<td>80</td>
<td>88</td>
<td>395</td>
</tr>
<tr>
<td>Williamson</td>
<td>312</td>
<td>231</td>
<td>74</td>
<td>28</td>
<td>36</td>
<td>305</td>
</tr>
<tr>
<td>Totals</td>
<td>2,657</td>
<td>3,235</td>
<td>1,439</td>
<td>1,055</td>
<td>1,196</td>
<td>4,674</td>
</tr>
<tr>
<td>% $2,500 and Over</td>
<td>47</td>
<td>21</td>
<td>15</td>
<td>17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 1974 Census of Agriculture, Illinois
Chapter 9

CHARACTERISTICS OF SMALL-FARM OPERATORS SURVEYED IN SOUTHERN ILLINOIS COUNTIES

In this chapter, the results of an interview schedule survey of small-farm operations in the Region X area of southern Illinois are presented and discussed. These characteristics include the operators' farm management practices, their farm and nonfarm income, their present and future plans and their educational needs and sources. These data were collected in cooperation with Ray Morris and Manford Logan, who worked in the Intensified Farm Development Program with small-farm families in southern Illinois.

The main objective of this study was to provide usable information for extension programs in southern Illinois. Information was stratified into three categories, which included full-time farmers, part-time farmers and dual-occupation farmers. A full-time farmer was defined as a farm operator who works ten days or less, annually, off the farm. A part-time farmer was defined as working more than ten, but not more than 150 days annually off the farm. A dual-occupation farmer was defined as working 150 or more days off the farm.

In the summer of 1978, operators were interviewed based on the 1977 growing season. The information obtained from this survey will be used in the Intensified Farm Development Program conducted for small-farm operators in Jefferson, Franklin, Jackson, Perry and Williamson Counties. The data will also serve as benchmarks and
inputs into future expansions or revisions of small-farm programs throughout southern Illinois and the state.

SURVEY RESULTS

According to the 1974 U. S. Census of Agriculture, there are 7,331 farms in the Region X area which gross less than $20,000. in farm sales. If one arbitrarily removed those grossing less than $2,500. as nonfarms or hobby farms, the number of small farms in Region X is 4,674 units. There were 2,251 units grossing over twenty thousand dollars annually. Therefore, sixty-seven percent of all units in southern Illinois were small-farm operations.

The rolling terrain and coal mining operations in southern Illinois limit agricultural production in some areas and restrict enterprises in others. Yet, seventy percent of all small farmers interviewed reported farming as their primary occupation. Eighty-three percent of full-time, eighty-three percent of the part-time farmers, and forty-seven percent of dual-occupation operators listed farming as their primary occupation. Table XXIII indicates farm operators' responses.
TABLE XXIII
PERCENT OF SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X WHO CONSIDER THEIR PRIMARY OCCUPATION FARMING

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Total (N=100)</th>
<th>Full-Time (N=41)</th>
<th>Part-Time (N=23)</th>
<th>Dual-Occupation (N=36)</th>
<th>Percent Small Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primarily Farming</td>
<td>70</td>
<td>83</td>
<td>83</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Not Primarily Farming</td>
<td>30</td>
<td>17</td>
<td>17</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

\( x^2 = 13.91 \)  \( df = 2 \)  \( P \leq 0.05 \)

If the probability of differences in this survey happening by chance is .05 or less, the results will be accepted as being statistically significant.

The chi-square value of 13.91 with two degrees of freedom is below the established criteria, indicating that differences were statistically significant between type of small farm operators in what they considered to be their primary occupation.

The majority of both the full-time operators and the part-time operators considered farming as their primary occupation. The majority of the dual-occupation farmers considered other than farming as their primary occupation. Those working off the farm more than 150 days did not consider their primary occupation as farming.
Although there are a variety of cropping programs, corn, sorghum, soybeans, wheat and pasture are the main cropping enterprises. Corn and grain sorghum are essentially the same crop in terms of management practices. Therefore, they were considered jointly in evaluating their use. Sixty-six percent of the farmers produced corn with an average 47.3 acres. Seventy-one percent of the farmers raised soybeans. The average size of production was 75 acres. Forty-four percent of the farmers raised an average of 53.1 acres of wheat. Other income-producing crops reported included sweet corn, hay and pasture.

Table XXIV analyzes corn production practices as reported.
### TABLE XXIV

**A COMPARISON OF SMALL-FARM OPERATORS TO THEIR ADOPTION OF GRAIN SORGHUM/CORN PRODUCTION PRACTICES, ILLINOIS EXTENSION REGION X, 1977-78**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise Corn/Sorghum (%)</td>
<td>66.0</td>
<td>71.0</td>
<td>87.0</td>
<td>43.0</td>
</tr>
<tr>
<td>Acres Corn/Sorghum</td>
<td>47.3</td>
<td>42.6</td>
<td>54.5</td>
<td>48.4</td>
</tr>
<tr>
<td>Of Those Growing Corn:</td>
<td>(N=66)</td>
<td>(N=29)</td>
<td>(N=20)</td>
<td>(N=17)</td>
</tr>
<tr>
<td>Applied Herbicide (%)</td>
<td>93.0</td>
<td>87.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Planted Hybrid Corn (%)</td>
<td>98.0</td>
<td>94.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Average Yield (bu.)</td>
<td>70.7</td>
<td>73.1</td>
<td>69.6</td>
<td>67.8</td>
</tr>
<tr>
<td>Lbs. N/Acre</td>
<td>81.0</td>
<td>73.0</td>
<td>70.0</td>
<td>85.0</td>
</tr>
</tbody>
</table>

\[ X^2 = 10.567 \]

\[ df = 2 \]

\[ P < .05 \]

The chi-square value of 10.567, with two degrees of freedom is below the established criteria, indicating that differences were statistically significant between type of small farm operators and the raising of corn or grain sorghum. Seventy-one percent of full-time and eighty-one percent of part-time farmers raised corn, but only forty-three percent of the dual-occupation farmers raised corn.

Corn production requires more time and more operations to be completed than other crops, such as wheat or soybeans, which may be planted, and no other operations required until harvest. Full-time farmers have more time to complete cultivation, hoeing and additional
tillage requirements.

Row crop cultural practices were similar for all three groups, but yields were reported highest by full-time farmers. All part-time and dual-occupation operators applied fertilizers, herbicides and planted hybrid corn, but four full-time farmers reported not using corn herbicides. Two full-time operators also reported not growing hybrid corn. Reported yields were similar to the county averages in the area. While county averages of seventy to eighty bushel were similar to those being reported, it should be pointed out that the county averages in Region X are about twenty bushels per acre below the Illinois average. Also, the county average in the target area is composed of sixty-seven percent small-farmer operations.

SOYBEAN PRODUCTION PRACTICES

Soybean production was reported highest by part-time farmers, with ninety-one percent growing soybeans. Full-time farmers averaged the most acres of soybeans, with 104 acres planted. Eighty-three percent of the dual-occupation operators grew soybeans, but grew the lowest number of acres at 46.4. Forty-nine percent of the full-time operators grew soybeans. They reported 57.6 acres more per operation than the dual-occupation units, and 39 acres more than the part-time operations. Part-time farmers reported the highest yields in 1977. The trend in 1977 was one in which the latest-planted beans were the highest yielding. This was contrary to the normal growing season.
TABLE XXV
A COMPARISON OF SMALL-FARM OPERATORS TO SOYBEAN PRODUCTION PRACTICES
IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Practice</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise Soybeans(^a) (%)</td>
<td>71.0</td>
<td>49.0</td>
<td>91.0</td>
<td>83.0</td>
</tr>
<tr>
<td>Of Those Who Raised Soybeans:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applied Herbicide (%)</td>
<td>96.0</td>
<td>81.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Tested Seed Germination(^b) (%)</td>
<td>26.0</td>
<td>24.0</td>
<td>30.0</td>
<td>26.0</td>
</tr>
<tr>
<td>Soybean Yield (bu.)</td>
<td>28.5</td>
<td>27.2</td>
<td>41.2</td>
<td>23.1</td>
</tr>
<tr>
<td>Acres Raised</td>
<td>75.1</td>
<td>104.0</td>
<td>65.1</td>
<td>46.4</td>
</tr>
</tbody>
</table>

\(^a\) \chi^2=18.52 df=2 \(P < .05\)

\(^b\) \chi^2=19.51 df=2 \(P < .05\)

The chi-square values of 18.520 and 19.512 with two degrees of freedom are below the established criteria, indicating that differences were statistically significant between type of small farm operators and the number raising soybeans and the number who germination test their soybean seed.

One major area of concern when growing soybeans is seed quality. Germination testing is one key to seed quality. Only twenty-six percent of the operators were doing any kind of germination testing.

Ninety-six percent of the farmers surveyed who raised soybeans were applying a herbicide for weed control. The full-time operators...
reported the lowest herbicide use with eighty-one percent using this approved practice, while all dual-occupation and part-time farm operators were using some type of herbicide.

Part-time farmers reported the highest soybean yields on conventionally planted soybeans with a 41 bushel average. Full-time farmers reported 27 bushel yield average and dual-occupation operators reported 23 bushel yield averages. The average for all farms was 28 bushels which would be close to the average soybean yield of all farmers in the area.
WHEAT PRODUCTION PRACTICES

Wheat production practices varied considerably between operators. Forty-four percent of all operators grew an average 53.1 acres with average yields of 35 bushels per acre. Part-time operators grew an average 82 acres, while full-time operators grew 48.5 acres, and dual-occupation operators grew the least acreage of wheat with 28.9 acres. All operators planted improved wheat varieties, except two farmers interviewed that did not know what varieties they had planted. Table XXVI summarizes wheat production practices as reported.

TABLE XXVI

A COMPARISON OF SMALL-FARM OPERATORS TO WHEAT PRODUCTION PRACTICES IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Practice</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised Wheat (%)</td>
<td>44.0</td>
<td>51.0</td>
<td>52.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Acres Raised</td>
<td>53.1</td>
<td>48.5</td>
<td>82.0</td>
<td>28.9</td>
</tr>
<tr>
<td>Lbs. N/Acre</td>
<td>37.5</td>
<td>54.0</td>
<td>27.5</td>
<td>34.5</td>
</tr>
<tr>
<td>Wheat Yield (bu.)</td>
<td>35.0</td>
<td>37.1</td>
<td>32.0</td>
<td>34.1</td>
</tr>
<tr>
<td>Of Those Growing Wheat:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planted Clover In Wheat (%)</td>
<td>90.0</td>
<td>81.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a  $X^2=4.132$  df=2  $P > .05, NS$

b  $X^2=5.251$  df=2  $P > .05, NS$
The chi-square values of 4.132 and 5.251 with two degrees of freedom are above the established criteria, indicating no statistically significant differences between type of small-farm operators and those raising wheat or those planting clover in their wheat crop.

Forty-four percent of the small-farm operators surveyed raised wheat. Clover, being a legume, is an economical method of adding both nitrogen and organic matter to the soil. Ninety-one percent of all small-farm operators who grew wheat had overseeded their wheat with a clover planting.

Small-farm wheat producers applied 37 lbs. of nitrogen to their wheat. University of Illinois research indicates economic levels near 60 pounds per acre. The average yields of those farms surveyed was 35 bushels per acre, with an average yield of all farmers in the area around 45 bushels per acre.
FORAGES AND PASTURE

Fifty-four operators reported raising an average 132.6 tons of forage for feed. Fifteen farmers reported buying an average 2.4 tons of forage. This student feels that some farmers interviewed may not have fully understood the term forage as including hay and pasture. It is felt that the figures reported may be low, especially when considering pasture production.

MARKETING OF CROPS AND LIVESTOCK

One area in which Extension continues to find educational needs among all farm operators is in marketing. This need is also present in small-farmer segment of production agriculture.

In Table XXVII, the primary corn marketing methods are presented.
TABLE XXVII
A COMPARISON OF SMALL-FARM OPERATORS TO PRIMARY METHOD OF MARKETING CORN IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Method of Marketing</th>
<th>Percent Raising Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=66)</td>
</tr>
<tr>
<td>Before Harvest</td>
<td>1.5</td>
</tr>
<tr>
<td>At Harvest</td>
<td>24.6</td>
</tr>
<tr>
<td>Feed to Livestock</td>
<td>61.5</td>
</tr>
<tr>
<td>Stored for Later Sale</td>
<td>12.3</td>
</tr>
</tbody>
</table>

*Less than five observations in some cells.

The primary method of marketing the corn crop was either to feed it to livestock or to sell it at harvest. Only 1.5 percent of all small-farm operators forward contracted grain before harvest, and only 12.3 percent stored grain as a primary method of marketing their corn crop. Sixty-one percent fed their corn to livestock and 24.6 percent sold the majority of their grain at harvest. No full-time or part-time small-farmer surveyed, sold grain before harvest as a primary marketing method. Six point seven percent of dual occupation farmers surveyed indicated forward contracting as a primary method of grain marketing.
There were different methods of marketing livestock among small-farmer operators. Tables XXVIII and XXIX show marketing strategies of beef and swine producers, respectively. Almost one-half of the beef producers sold their production at weaning age. Twenty-two percent sold their production as yearlings and thirty-two percent fed their calves to finished market weights.

### TABLE XXVIII

A COMPARISON OF SMALL-FARM OPERATORS TO THE PRIMARY METHOD OF MARKETING BEEF IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Size Marketed</th>
<th>Percent Producing Beef</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (N=50)</td>
</tr>
<tr>
<td>Calves Up to One Year</td>
<td>46.0</td>
</tr>
<tr>
<td>Yearlings Not For Slaughter</td>
<td>22.0</td>
</tr>
<tr>
<td>Finished Slaughter Weight</td>
<td>32.0</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 14.855 \quad \text{df}=4 \quad P < .05 \]

The chi-square value of 14.855 with four degrees of freedom is below the established criteria, indicating that differences were statistically significant between type of small farm operators and their primary method of marketing beef cattle.

Full-time farmers who raised cattle sold their production as calves under one year, as yearlings and at finished weights. While sixty-six percent of the part-time farmers marketed their beef as calves,
Forty-seven percent of the dual-occupation farmers who raised beef, sold their production as calves and thirty-five percent sold at finished slaughter weights.

Swine production was split between farrow-to-finish operations and the production of feeder pigs. No operator surveyed was purchasing feeder pigs and feeding them to market weights. Seventy percent of the full-time operators were farrow-to-finish operations, while eighty-seven of the dual-occupation operators were selling their pigs as feeders. Part-time operators were also primarily feeder-pig producers. It takes additional time and facilities to finish a feeder pig to market weight, and this appears to have an impact on those who work off the farm. Table XXIX develops the swine marketing responses of small farmers interviewed.

**TABLE XXIX**

A COMPARISON OF SMALL-FARM OPERATORS TO THE PRIMARY METHOD OF MARKETING SWINE IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Marketing Procedure</th>
<th>Percent Producing Swine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (N=55)</td>
</tr>
<tr>
<td>Farrow-to-Finish</td>
<td>40.0</td>
</tr>
<tr>
<td>Sell Feeder Pigs</td>
<td>60.0</td>
</tr>
<tr>
<td>Buy Feeder Pigs</td>
<td>0</td>
</tr>
</tbody>
</table>

*Less than five observations in some cells.
LIVESTOCK PRODUCTION PRACTICES

Forty percent of the operators receive more than one-half of their income from livestock sales. This is primarily through beef and swine production. In Table XXX, livestock production practices of the major enterprises are indicated.

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=31)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise Beef Cows(^a) (%)</td>
<td>50.0</td>
<td>54.0</td>
<td>44.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Number of Cows</td>
<td>12.1</td>
<td>14.1</td>
<td>8.7</td>
<td>12.0</td>
</tr>
<tr>
<td>Raise Swine(^b) (%)</td>
<td>55.0</td>
<td>57.0</td>
<td>65.0</td>
<td>53.0</td>
</tr>
<tr>
<td>Number of Sows</td>
<td>13.3</td>
<td>14.1</td>
<td>9.7</td>
<td>14.0</td>
</tr>
<tr>
<td>Raise Sheep(^c) (%)</td>
<td>6.0</td>
<td>7.0</td>
<td>4.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Number of Ewes</td>
<td>27.0</td>
<td>34.0</td>
<td>20.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Raise Milk Cows/Goats(^d) (%)</td>
<td>14.0</td>
<td>17.0</td>
<td>4.0</td>
<td>17.0</td>
</tr>
<tr>
<td>Number Milk Cows/Goats</td>
<td>2.7</td>
<td>3.0</td>
<td>2.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

\(^a\) \(X^2 = .6108\), \(df = 2\), \(P > .05, \text{NS}\)

\(^b\) \(X^2 = 1.279\), \(df = 2\), \(P > .05, \text{NS}\)

\(^c\) Less than five observations in some cells

\(^d\) \(X^2 = 2.314\), \(df = 2\), \(P > .05, \text{NS}\)
Chi-square analysis were calculated on the differences in type of small farmer and against the categories of a.) the number raising beef calves; b.) the number raising pigs; c.) the number raising sheep, and, d.) the number raising milk cows or goats. The chi-square values of .6108 for raising beef cows, 1.279 for raising swine, and 2.314 for raising dairy cows or goats with two degrees of freedom is above the established criteria, indicating no statistical difference between type of small-farm operator and those raising beef cows, swine or dairy.

Therefore, it appears that there is little difference in the number of small farmers raising livestock enterprises. An extension education program in livestock could assume that the total small-farmer audience was the same in relation to stratification of livestock.

Fifty percent of the farmers reported an average twelve head of beef cows. Fifty-five percent reported raising an average thirteen head of sows. Only six percent reported any sheep production, and fourteen percent reported raising milk cows or dairy goats. Among the farmers surveyed, full-time farmers reported more cows than either part-time or dual-occupation operators. Although fourteen percent raised either milk cows or goats, the production was entirely consumed by the farm family and neighbors.
SWINE PRODUCTION

Swine farrowing procedures by producers varied from two-time farrowings by fifty percent of the producers upward to four or more farrowings during the year by eighteen percent of the pork producers.

In Table XXXI, the production of pork as reported is indicated.

<table>
<thead>
<tr>
<th>TABLE XXXI</th>
</tr>
</thead>
</table>

A COMPARISON OF SMALL-FARM SWINE PRODUCTION PRACTICES TO SIZE OF OPERATION OF SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X 1977-78

<table>
<thead>
<tr>
<th>Swine Sales</th>
<th>Number of Pigs</th>
<th>Total Farmers (N=55)</th>
<th>Full Time (N=21)</th>
<th>Part Time (N=15)</th>
<th>Dual Occupation (N=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeder Pigs Sold</td>
<td>113.0</td>
<td>130.0</td>
<td>81.0</td>
<td>113.0</td>
<td></td>
</tr>
<tr>
<td>Finished Hogs Sold</td>
<td>108.0</td>
<td>112.0</td>
<td>60.0</td>
<td>133.0</td>
<td></td>
</tr>
</tbody>
</table>

Full-time farmers reported selling the most feeder pigs with an average of 130 head of those farmers who raised feeder pigs. Part-time farmers reported the lowest level of sales with an average 81 head sold. Dual-occupation farmers reported selling an average 133 head of finished pigs while full-time farmers reported 108 head and part-time farmers reported only 60 head sold. Part-time farmers raised the lowest number of feeder pigs and finished pigs.
SHEEP PRODUCTION PRACTICES

Only six operators reported sheep production. Two operators in each of the three stratified groups were raising sheep. None reported shearing their own sheep. They were having this practice done for them by commercial sheep shearers.

FARM AND NONFARM INCOME SOURCES

In Table XXXII, the distribution of gross farm sales by the farmers interviewed in the sample is reported.

TABLE XXXII

A COMPARISON OF DISTRIBUTION OF ANNUAL GROSS FARM SALES TO SIZE OF OPERATION OF SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X 1977-78

<table>
<thead>
<tr>
<th>Gross Farm Sales</th>
<th>No. of Farms</th>
<th>Number of Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-Time</td>
<td>Part-Time</td>
</tr>
<tr>
<td>Less than $5,000</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>$5,000 - $10,000</td>
<td>36</td>
<td>11</td>
</tr>
<tr>
<td>$11,000 - $20,000</td>
<td>46</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>41</td>
</tr>
</tbody>
</table>

$X^2 = 11.016$  \hspace{1cm}  $df = 4$  \hspace{1cm}  $P < .05$

The chi-square value of 11.016, with four degrees of freedom is below the established criteria, indicating that differences were statistically significant between type of small-farm operators and the distribution of annual gross farm sales.
Fifty-four percent of farmers surveyed grossed ten thousand dollars or less in 1977. Forty-six percent grossed between eleven thousand dollars and twenty thousand dollars in 1977. Therefore, the midpoint of all farmers in the sample would be slightly less than ten thousand dollars in gross farm income in 1977.

Farm income was a function of both crop and livestock receipts. Eighty-five percent of the farmers raised some livestock for sale. These sales accounted for more than one-half of all farm income for forty percent of the livestock operations. In Table XXXIII, the distribution of livestock income by type of operation is reported. Forty-one percent of full-time farmers raising livestock receive three-fourths or more of their farm income from livestock. The remaining income is derived from the sale of corn, beans, wheat and some hay.

**TABLE XXXIII**

A COMPARISON OF PERCENT OF FARM INCOME FROM LIVESTOCK SALES BY SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>% Income From Livestock Sales</th>
<th>Total (N=100)</th>
<th>Full-Time (N=41)</th>
<th>Part-Time (N=23)</th>
<th>Dual-Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25</td>
<td>21</td>
<td>29.3</td>
<td>17.4</td>
<td>13.9</td>
</tr>
<tr>
<td>25 - 49</td>
<td>24</td>
<td>7.3</td>
<td>56.5</td>
<td>22.2</td>
</tr>
<tr>
<td>50 - 74</td>
<td>16</td>
<td>17.1</td>
<td>4.3</td>
<td>22.2</td>
</tr>
<tr>
<td>75 or more</td>
<td>24</td>
<td>41.5</td>
<td>8.7</td>
<td>13.9</td>
</tr>
<tr>
<td>No Livestock Sales</td>
<td>15</td>
<td>4.9</td>
<td>13.0</td>
<td>27.8</td>
</tr>
</tbody>
</table>
There are less than five observations in some cells which prevents the chi-square analysis from being calculated. There were strong indications of differences between types of small farmers and income derived from the sale of livestock. Fifty-nine percent of full-time farmers receive one-half or more of their entire farm income from livestock sales. Forty-one percent receive seventy-five percent or more of their entire farm income from the sale of livestock. Only thirteen percent of part-time operators receive over half of their farm income from livestock sales. Thirty-six percent of dual-occupation farmers receive one half or more of their farm income from livestock sales. Twenty-eight percent of dual occupation farmers had no livestock sales while only five percent of full-time farmers and thirteen percent of part-time farmers had no livestock sales.

Many of the farmers in southern Illinois had nonfarm income as a substantial part of their total income. Almost fifty-six percent of the total income was nonfarm for small-farm operators. Full-time farmers had the lowest levels at forty percent. Part-time farmers reported forty-seven percent, and dual-occupation operators reported nonfarm income at seventy-five percent of total income. Table XXXIV illustrates the percentage of total small-farm income from nonfarm sources in 1977.
A COMPARISON OF INCOME FROM NONFARM SOURCES BY SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Income Source</th>
<th>Total (N=100)</th>
<th>Full-Time (N=41)</th>
<th>Part-Time (N=23)</th>
<th>Dual-Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Income</td>
<td>56</td>
<td>40</td>
<td>47</td>
<td>75</td>
</tr>
<tr>
<td>Farm Income</td>
<td>44</td>
<td>60</td>
<td>53</td>
<td>25</td>
</tr>
</tbody>
</table>

$x^2 = 8.323 \quad df = 2 \quad P < .05$

The chi-square value of 8.323 with two degrees of freedom is below the established criteria, indicating that differences were statistically significant between type of small-farm operator and their nonfarm income.

Full-time farmers indicated receiving forty percent of their total income from nonfarm sources, while dual-occupation farmers indicated receiving seventy-five percent of their income from non-farm sources. Fifty-six percent of the total income from all small-farm operators interviewed was from non-farm sources.

The farm wife accounted for part of the nonfarm income. But, sixteen percent of farmers interviewed reported not having a wife, and only two percent reported having a wife who worked full time off the farm. Nine percent reported their wife working part time off the farm. The remaining seventy-three percent reported no off-the-farm employment by their spouse.
FERTILITY MANAGEMENT

In soil and crop management, fertilizers and herbicides were applied by nearly all small-farm operators. Double cropping of soybeans was practiced by ten of the 69 soybean growers. Sixty-two percent of those with pastures were using a combination of grass and legumes (primarily red clover) in their pastures. Thirty-five percent were growing straight fescue pastures.

Table XXXV a comparison of soil testing and fertility practices by small-farm operators in southern Illinois is presented.

TABLE XXXV

A COMPARISON OF SMALL-FARM OPERATORS TO THE ADOPTION OF SOIL TESTING AND FERTILITY PRACTICES IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Practice</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have Tested Soil</td>
<td>56</td>
<td>61</td>
<td>52</td>
<td>53</td>
</tr>
<tr>
<td>Have Tested Soil In Last Four Years</td>
<td>39</td>
<td>45</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>Have Tested and Followed Recommendations All or Most of Time</td>
<td>35</td>
<td>37</td>
<td>30</td>
<td>26</td>
</tr>
</tbody>
</table>

\[ a \quad \chi^2 = .7003 \quad df = 2 \quad P > .05, NS \]

\[ b \quad \chi^2 = 4.375 \quad df = 6 \quad P > .05, NS \]

The chi-square values of .7003 and 4.375 with two degrees of freedom are above the established criteria, indicating no statistical
differences between type of small-farm operator and those having taken soil tests and following the recommendation all or most of the time.

56 operators said that they have tested their soil for fertility. But, when questioned as to when the last test was taken on any ground, only 39 had taken any tests within the last four years. Thirty-five percent of the small-farm operators interviewed said that they followed the test recommendations all or most of the time. Although accurate use of soil testing was low in all categories. Less than thirty percent of dual-occupation operators were using soil tests appropriately. Likewise, thirty percent of part-time and thirty-seven percent of full-time operators followed testing recommendations.

AVAILABILITY OF FAMILY FARM LABOR

Many of the wives who did not work off the farm were supplying labor for the farm. A wife was present on eighty-four percent of the farms. With only two percent of the wives working full time, there was the potential for help on eighty-two percent of the operations.

Seventy-two percent of the farms had children living at home. Some of the children were quite old. Eleven small farms reported having children over 20 years of age living at home. Ninety-four percent of dual-occupation farmers reported having children. Full-time operators reported children on forty-eight percent of their operations.

If one considers potentially usable labor from children the highest during their tenth to twentieth year, 36 farms would have one or more children in this age bracket. Sixty-eight percent of the dual-occupation farms would have this available labor. Forty-three
percent of the part-time operations, and only fifteen percent of the full-time farms, would have children in this age bracket.

**FARM SIZE**

Size of farm of those reporting was small by Illinois standards. Farmers reported an average 156.8 acres being farmed. They owned 123 acres. Full-time farmers reported farming about 45 acres more than part-time or dual-occupation farmers. But, dual-occupation farmers owned nearly as much land as full-time farmers. In Table XXXVI, acreage farmed and owned when interviewed, and acres farmed and owned ten years previously, are analyzed.

**TABLE XXXVI**

*A COMPARISON OF FARM SIZE OF SMALL-FARM OPERATORS BY ACREAGE FARMED AND OWNED IN 1977 TO ACREAGE FARMED AND OWNED IN 1967 BY SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X*

<table>
<thead>
<tr>
<th>Farmers</th>
<th>Acres Farmed</th>
<th>Acres Owned</th>
<th>Farmed 10 Years Ago</th>
<th>Owned 10 Years Ago</th>
<th>Change in Acres 1967-77</th>
<th>Farming Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>156.8</td>
<td>123.3</td>
<td>150.3</td>
<td>117.9</td>
<td>6.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Full-Time</td>
<td>184.3</td>
<td>134.8</td>
<td>199.3</td>
<td>149.5</td>
<td>-15.0</td>
<td>-14.7</td>
</tr>
<tr>
<td>Part-Time</td>
<td>137.5</td>
<td>99.6</td>
<td>99.5</td>
<td>87.0</td>
<td>38.0</td>
<td>12.6</td>
</tr>
<tr>
<td>Dual-Occupation</td>
<td>139.0</td>
<td>125.5</td>
<td>131.3</td>
<td>103.0</td>
<td>7.7</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Part-time and dual-occupation farms have increased both in size and in acreage owned. Full-time operations have decreased in size by 15 acres, and ownership has also dropped by almost 15 acres. A
liquidation process has been taking place by small, full-time operators. Land ownership has increased by dual-occupation farmers, who have more nonfarm income to help them obtain credit and pay for farm land purchases.

FUTURE PLANS AND LIMITATIONS

To determine whether the farmers surveyed were interested in increasing the level of their farming operations, they were asked about future plans during the next five years. They were also questioned concerning perceived limitations which might prevent them from making these changes. Table XXXVII indicates future objectives of the sample farms.

TABLE XXXVII

A COMPARISON OF FUTURE FARMING OBJECTIVES BY SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1978

<table>
<thead>
<tr>
<th>Farming Intention</th>
<th>Total Farmers (N=100)</th>
<th>Full Time Farmers (N=41)</th>
<th>Part Time Farmers (N=23)</th>
<th>Dual Occupation Farmers (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand</td>
<td>37</td>
<td>17</td>
<td>39</td>
<td>58</td>
</tr>
<tr>
<td>Maintain</td>
<td>59</td>
<td>73</td>
<td>61</td>
<td>42</td>
</tr>
<tr>
<td>Cut Back</td>
<td>4</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Less than five observations in some cells.

When given the options of expanding, maintaining or cutting back in farm operations during the next three to five years, over seventy percent of the full-time farmers wished to maintain present
operations. In contrast, almost sixty percent of the dual-occupation farmers wanted to expand. Ten percent of the full-time farmers wanted to cut back in operations, while no part-time or dual-occupation farmers wanted this.

Farmers also indicated the changes they would like to make. 41 wished to raise more livestock. 39 wanted to raise more crops. 21 indicated a desire to rent more land. 50 operators hoped to purchase additional machinery. 15 small farmers hoped to buy more land.

Statistically significant differences were obtained between small-farm operators and their plans for 1) raising more crops, 2) buying more land, and 3) purchasing more machinery. There were no statistically significant differences obtained between small-farm operators and their plans for raising more livestock or renting more land. Table XXXVIII indicates changes small farmers surveyed would like to make in their farming operation.
TABLE XXXVIII

A COMPARISON OF DESIRE TO MAKE FARM-OPERATION CHANGES TO THE TYPES OF SMALL-FARM OPERATIONS IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Desire</th>
<th>Percentage Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=100)</td>
</tr>
<tr>
<td>To Raise More Crops(^a) (%)</td>
<td>39</td>
</tr>
<tr>
<td>To Buy More Land(^b) (%)</td>
<td>15</td>
</tr>
<tr>
<td>To Purchase More Machinery(^c) (%)</td>
<td>50</td>
</tr>
</tbody>
</table>

\(a \chi^2 = 12.395 \quad \text{df} = 2 \quad P < .05\)

\(b \chi^2 = 14.975 \quad \text{df} = 2 \quad P < .05\)

\(c \chi^2 = 31.022 \quad \text{df} = 2 \quad P < .05\)

The chi-square value of 12.395 with two degrees of freedom is below the established criteria, indicating that differences were statistically significant between the types of small-farm operations and the number desiring to raise more crops. More part-time and dual-occupation farmers desire to increase crop production than full-time farmers.

The chi-square value of 14.975 with two degrees of freedom is below the established criteria, indicating that differences were statistically significant between the types of small-farm operations and the number desiring to buy more land. More part-time farmers wished to buy land than either dual-occupation or full-time farmers.

It should be kept in mind that Table XXXVI indicated that dual-occupation farmers had made the largest increase in land ownership in
the last years. This might indicate that part of their desire for additional land has already been satisfied.

The chi-square value of 31.022 with two degrees of freedom resulted in a probability of .0000. This would indicate a highly statistically significant difference exists between the type of small-farm operations and the number desiring to purchase more machinery. More part-time and dual-occupation farmers desired to purchase more machinery than full-time operators.

When asked what might prevent an operator from making desired changes, the availability of land was mentioned by 42 operators. 41 indicated age or health to be a limiting factor. Present debt and credit was listed by 34 farmers. Lack of livestock facilities was a limiting factor of 26 operators. Lack of help was indicated by 14 farmers, and uncertainty of the future was given by 27 small-farm operators as preventing them from making changes.

Table XXXIX indicates limitations which may prevent small farmers from making farm-operation changes.
TABLE XXXIX
A COMPARISON OF THE AREAS WHICH PREVENT FARM-OPERATION CHANGES TO THE TYPE OF SMALL-FARM OPERATION IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Enough Land(^a) (%)</td>
<td>42</td>
<td>17</td>
<td>52</td>
<td>64</td>
</tr>
<tr>
<td>Present Debt(^b) (%)</td>
<td>34</td>
<td>10</td>
<td>61</td>
<td>44</td>
</tr>
<tr>
<td>Ability to Borrow(^c) (%)</td>
<td>23</td>
<td>10</td>
<td>26</td>
<td>36</td>
</tr>
<tr>
<td>Fear of Debt(^d) (%)</td>
<td>28</td>
<td>15</td>
<td>35</td>
<td>39</td>
</tr>
</tbody>
</table>

\(^a\) \(X^2 = 18.516\)  \(df = 2\)  \(P < .05\)
\(^b\) \(X^2 = 19.889\)  \(df = 2\)  \(P < .05\)
\(^c\) \(X^2 = 7.679\)  \(df = 2\)  \(P < .05\)
\(^d\) \(X^2 = 6.275\)  \(df = 2\)  \(P < .05\)

Statistically significant differences at the established criteria were obtained between small-farm operators, and their perception of the following limitations to farm-operation changes: 1) not enough land available, 2) present debt load, 3) ability to borrow, and 4) fear of debt. There were no statistically significant differences obtained between small-farm operators and the limitations of 1) no land for sale nearby, 2) age or health of operator, 3) lack of livestock facilities, 4) lack of labor, or 5) uncertainty of the future. Although there were no significant differences between small farmers in these areas, twenty percent indicated no land for sale nearby as a limitation, and forty-one percent indicated age or health
of operator as a limitation.

Based on the information in Table XXXIX, both part-time and dual-occupation farmers expressed more limitations to their farming operations than full-time farmers. Although part-time and dual-occupation operators had expressed a desire to expand their operations, had a greater desire to raise more crops and purchase more machinery than full-time farmers. It appeared that the farmers not planning to change present operation have less perceived limitations.

EDUCATIONAL LEVEL OF SMALL FARMERS

Dual-occupation farmers reported completed the most formal education with an average 11.4 years. Ten dual-occupation operators had attended college, while only 19 had not completed high school. Full-time farmers reported completing an average 9.4 years education. Only two of these operators had attended any college, while 30 had not completed high school. Part-time farmers reported completing an average 9.3 years education. None of these operators had any college, and 20 of the 23 had not completed high school. Table XL indicates the education level of small-farm operators surveyed.
TABLE XL

A COMPARISON OF THE FORMAL EDUCATIONAL LEVEL OF SMALL-FARM OPERATORS TO THE TYPE OF SMALL-FARM OPERATION IN ILLINOIS EXTENSION REGION X 1977-78

<table>
<thead>
<tr>
<th>Highest Formal Educational Level</th>
<th>Percent Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=100)</td>
</tr>
<tr>
<td>Grade School Only</td>
<td>46</td>
</tr>
<tr>
<td>Attended High School</td>
<td>23</td>
</tr>
<tr>
<td>Completed High School</td>
<td>19</td>
</tr>
<tr>
<td>Attended College</td>
<td>12</td>
</tr>
</tbody>
</table>

*Less than five observations in some cells.

Although no chi-square values could be calculated there appear to be significant differences between type of small-farm operators in their formal educational levels.

Fifty-eight percent of the full-time farmers and fifty-six percent of the part-time farmers had only a grade school education, while only twenty-five percent of the dual-occupation farmers had educational levels that low. Twenty-seven percent of the full-time farmers and thirteen percent of the part-time farmers had completed high school, while forty-seven percent of the dual-occupation farmers had completed high school and twenty-eight percent had attended some college.
ADDITIONAL FARM INFORMATION

Within the southern Illinois area, the Farm Bureau, National Farmers Organization (N.F.O.), American Agriculture Movement, Grange and the Illinois Farmers Union have organizational membership. Seventy-one percent of those interviewed were Farm Bureau members, five percent were Farmer Union members, one was a N.F.O. member, and twenty-three percent held no farm-organization affiliation.

These operators had been farming for some time. There was an average of 25 years of farming experience by those reporting. Full-time farmers had farmed the longest, with an average of 29 years. Part-time farmers had farmed 25 years and dual-occupation operators had farmed 19 years.

The parents of ninety-two percent of the farmers had farmed most or all of their lives. One hundred percent of full-time farmers reported their fathers having farmed most or part of their lives. Ninety-one percent of part-time and eighty-three percent of dual-occupation farmers also reported their fathers as farmers.

Ninety-three percent of the farmers interviewed raised a vegetable garden. These gardens produced a large amount of food for the farm families. Fifty-nine percent of those interviewed listed the vegetable garden as an "extremely important part of the family's food supply".

REASONS FOR FARMING

When questioned as to "why do you farm?", a variety of answers were given. Table XLI indicates these responses. The most frequent response by full-time, part-time and dual-occupation farmers was that
they farmed because they liked it.

TABLE XLI

A COMPARISON OF REASONS FOR FARMING BY TYPE OF SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Reasons for Farming</th>
<th>Percent Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=95)*</td>
</tr>
<tr>
<td>Like to Farm</td>
<td>39</td>
</tr>
<tr>
<td>Way of Life</td>
<td>19</td>
</tr>
<tr>
<td>A Job</td>
<td>11</td>
</tr>
<tr>
<td>Place to Live</td>
<td>13</td>
</tr>
<tr>
<td>Supplement Income</td>
<td>13</td>
</tr>
</tbody>
</table>

*Five operators offered no reason for farming.

USE OF GOVERNMENT AGENCIES

The extent to which small farmers with different characteristics utilize the services of governmental agricultural agencies was examined. The agencies were limited to the Cooperative Extension Service, Agricultural Stabilization and Conservation Service (A.S.C.S.) and the Soil Conservation Service (S.C.S.). As indicated in Tables XLII, XLIII and XLIV, the participation and use of U.S.D.A. agencies varied. Eighty-two percent of those interviewed were familiar with the Cooperative Extension Service, and eighty-one percent said that it provided them with some help. Sixty-nine percent were familiar with the S.C.S., and forty-four percent of those said that it provided them some help.
Table XLII compares the use of the Cooperative Extension Service by types of small-farm operators in southern Illinois.

TABLE XLII

A COMPARISON OF THE USE OF THE COOPERATIVE EXTENSION SERVICE TO THE TYPE OF SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1975-78

<table>
<thead>
<tr>
<th>Cooperative Extension Service Status</th>
<th>Familiar with the Extension Service</th>
<th>Felt Extension Service Provided Them Some Help</th>
<th>Felt Extension Service Should Be Providing More Help</th>
<th>Family Member Visited Extension Office</th>
<th>Agriculture Adviser Visited Farm</th>
<th>Family Member Attended Tour, Meeting or Demonstration</th>
<th>Wife Participated in Home Economics Activities</th>
<th>Children Enrolled in 4-H</th>
<th>Received Information from Extension Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Farmers (N=100)</td>
<td>Percentage Small Farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time (N=41)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time (N=23)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual Occupation (N=36)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>88</td>
<td>83</td>
<td>75</td>
<td>&gt; .05, NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>81</td>
<td>80</td>
<td>81</td>
<td>72</td>
<td>&gt; .05, NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>51</td>
<td>77</td>
<td>72</td>
<td>&lt; .05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>27</td>
<td>26</td>
<td>53</td>
<td>&lt; .05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>51</td>
<td>35</td>
<td>33</td>
<td>&gt; .05, NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>8</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>67</td>
<td>63</td>
<td>74</td>
<td>67</td>
<td>&lt; .05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Less than five observations in some cells.
If the probability of a result happening by chance was .05 or less, the results were accepted as being significantly different. The probability was above the established criteria, indicating that differences were not statistically significant between type of small-farmer and 1) those familiar with the Cooperative Extension Service, 2) the number who were receiving some help from the Cooperative Extension Service, and 3) the number who had a family member attend an educational tour, meeting or demonstration.

There were statistically significant differences between the type of small farmer and the number who had a family member visit the County Extension Office. There were also statistically significant differences in the agriculture adviser's visits to farms and in those receiving information from the County Extension Office.

Seventy-seven percent of the part-time and seventy-two percent of the dual-occupation farm families indicated that a family member had visited the County Cooperative Extension Office sometime during the last three years. Only fifty-one percent of the full-time operators indicated that a family member had visited the County Cooperative Extension Office during that same period of time. This may relate to the desire of the dual-occupation and part-time farmers to make more farm operation changes than full-time operators.

Forty-one percent of all small-farmers had attended either a tour or educational meeting. Full-time farmers reported a fifty-two percent level of educational-meeting attendance, while part-time farmers reported only thirty-five percent attendance, and dual-occupation farmers reported a thirty-three percent attendance. Two-
thirds of the operators reported receiving at least some educational information within the last three years. Participation in 4-H and home economics was limited. Thirty-six farms reported children between the ages of eleven and twenty. The age requirement for 4-H in Illinois is eight to nineteen. Therefore, all thirty-six operations would have had children eligible for 4-H during the last three years. Five farms reported children enrolled in 4-H. This would indicate a fourteen percent participation of small-farm youth on farms which had eligible children.

Eighty-four percent of the farms reported that the farm family included a wife. Four percent of the farms reported that the wife participated in extension home economics activities. This would indicate a six percent participation level in home economics by small-farm families in which a wife was present.

When asked if Cooperative Extension Service should be 1) providing the farmer with more help, 2) is now providing the right amount of help, or 3) if it did not make any difference to them, only five percent felt they should be receiving additional help. Sixty-eight percent felt the Cooperative Extension Service was providing the right amount of help. Twenty-seven percent indicated that it did not make any difference.

In Figure 2, the responses to size of farm operation which small-farm operators perceive the Cooperative Extension Service as typically working with are graphed.
PERCEPTION OF THE EXTENSION SERVICE BY SMALL-FARM OPERATORS AS TO THE SIZE OF FARM WHICH THE EXTENSION SERVICE TYPICALLY PROVIDES SERVICE TO

Source: Results of Interview Survey of Small-Farm Operations in Southern Illinois Extension Region X, 1978
Small-farm operators indicated a strong perception of the Cooperative Extension Service as working with all size farms. Eighty-five percent of the part-time, sixty-nine percent of the full-time, and fifty-nine percent of the dual-occupation farmers perceived the Extension Service as working with all size farms.

When asked some of the same questions about the Soil Conservation Service, small-farm operators who were surveyed indicated that the Soil Conservation Service was providing the right amount of service to fifty-two percent of them. Twelve percent of those familiar with the S.C.S. felt they should be receiving additional help. Thirty-six percent felt that it really did not make any difference. When compared with the Cooperative Extension Service, twice as many farmers felt the S.C.S. should be providing them with more help. In Table XLIII, the responses of the small-farm operators indicate their feelings toward the Soil Conservation Service.
TABLE XLIII


<table>
<thead>
<tr>
<th>S.C.S. Status</th>
<th>Percent Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=100)</td>
</tr>
<tr>
<td>Familiar with S.C.S.(^a)</td>
<td>69</td>
</tr>
<tr>
<td>Felt S.C.S. Provided Good Deal or Some Help(^b)</td>
<td>44</td>
</tr>
<tr>
<td>Felt S.C.S. Should Be Providing More Help(^c)</td>
<td>12</td>
</tr>
</tbody>
</table>

\(^a\) \(X^2 = 16.714\) \(df = 2\) \(P < .05\)  
\(^b\) \(X^2 = 17.239\) \(df = 4\) \(P < .05\)  
\(^c\) \(X^2 = 18.883\) \(df = 4\) \(P < .05\)

The chi-square value of 16.714 with two degrees of freedom is below the established criteria, indicating the differences were statistically significant between type of small-farm operators and familiarity with the Soil Conservation Service. Eight percent of the full-time and eighty-seven percent of the part-time farmers were familiar, while only forty-four percent of the dual-occupation farmers indicated being familiar with the S.C.S.

The chi-square value of 17.239 with four degrees of freedom was also below the established criteria, indicating that differences were statistically significant between type of small-farm operators and feelings towards the help they were receiving from the S.C.S. Fifty-four percent of the full-time farmers felt the S.C.S. was
providing some or a good deal of help, while thirty-nine percent of the part-time and thirty-six percent of the dual-occupation farmers felt the S.C.S. was providing this level of help.

The chi-square value of 18.883 with four degrees of freedom was also below the established criteria, indicating that differences were statistically significant between types of small-farm operators and the level of help they were receiving from the S.C.S. Twenty-two percent of the part-time farmers felt the S.C.S. should be providing more help, while only ten percent of the full-time and eight percent of the dual-occupation had this feeling.

In Table XLIV, small-farm operators interviewed indicate their participation in A.S.C.S. programs and cost sharing.
TABLE XLIV


<table>
<thead>
<tr>
<th>A.S.C.S. Programs</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in Lime or Cost Sharing(^a)</td>
<td>18</td>
<td>24</td>
<td>22.0</td>
<td>8</td>
</tr>
<tr>
<td>Deficiency Payments Received(^b)</td>
<td>18</td>
<td>24</td>
<td>17.0</td>
<td>11</td>
</tr>
<tr>
<td>Disaster or Crop Loans Received</td>
<td>1</td>
<td>0</td>
<td>4.3</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^a\) \(X^2 = 3.631\) df = 2 \(P > .05, \text{NS}\)

\(^b\) \(X^2 = 2.296\) df = 2 \(P > .05, \text{NS}\)

The chi-square values of 3.631 and 2.296 with two degrees of freedom are above the established criteria, indicating no statistical difference between type of small-farmer and use of A.S.C.S. programs.

Eighteen percent of those surveyed reported receiving assistance for cost sharing or conservation practices. Eighteen percent of the farmers also reported receiving deficiency payments. One operator reported a disaster payment. The period of 1975-78 was above normal in number of days available to plant and harvest. This results in higher yields and less need for disaster payments.
INFORMATION NEEDED BY SMALL-FARM OPERATORS

When questioned as to what kinds of information on farm practices would be of most help, the answers varied. Thirty-four percent of the full-time farmers wanted more information on marketing, and twenty-two percent wanted additional information on crops and livestock. The part-time and dual-occupation farmers' requests were for information on crops and livestock. No part-time farmer requested information on marketing, while 16.7 percent of the dual-occupation farmers did. Additional areas of assistance identified by the small-farmer audience were pasture improvement, use of pesticides and credit. This information would be a strong basis for developing extension programs for small farmers. Table XLV indicates the break down of responses by those surveyed.

TABLE XLV
A COMPARISON OF KINDS OF INFORMATION NEEDED MOST BY SMALL-FARM OPERATORS ON THEIR FARM BY TYPE OF SMALL-FARM OPERATION IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Kinds of Information</th>
<th>Percent Small Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=100)</td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Pasture Improvement</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Crops and Livestock</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>22</td>
</tr>
<tr>
<td>Pesticide Use</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Credit</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>
When asked an open-ended question as to where they usually get farm information on new practices, thirty-eight percent included the Cooperative Extension Service. Sixty-two percent did not. More full-time and part-time operators included the Cooperative Extension Service as a source of new farm-practice information than did the dual-occupation farmers. In Table XLVI, the responses are indicated.

TABLE XLVI

A COMPARISON OF SOURCE OF INFORMATION ON NEW FARM PRACTICES BY TYPE OF SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Total Farmers (N=100)</th>
<th>Full Time (N=41)</th>
<th>Part Time (N=23)</th>
<th>Dual Occupation (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension Service</td>
<td>38</td>
<td>42</td>
<td>48</td>
<td>28</td>
</tr>
<tr>
<td>Not Extension Service</td>
<td>62</td>
<td>58</td>
<td>52</td>
<td>72</td>
</tr>
</tbody>
</table>

\[ X^2 = 2.748 \quad \text{df} = 2 \quad P > .05, \text{NS} \]

The chi-square value of 2.748 with two degrees of freedom was above the established criteria, indicating no statistical difference between type of small-farm operator and the use of the Extension Service in obtaining information on new farm practices.

When asked if the Cooperative Extension Service were to hold a meeting for farmers in the area, where should it be held, forty-nine percent indicated the local school. Only twenty percent indicated the county seat. Fifteen percent indicated the extension center, nine percent said a church, and one percent indicated a restaurant.
These answers would tend to indicate the need for a decentralized location of meetings and an acceptance of the local schools as a place for educational extension meetings.

When the interviewees were asked if they would attend an educational meeting showing methods of good livestock health care, almost one-half said maybe. Thirty-six percent answered yes, and only sixteen percent said no. Table XLVII summarizes the responses.

### TABLE XLVII

A COMPARISON OF THE RATE OF ATTENDANCE OF AN EDUCATIONAL MEETING ON LIVESTOCK HEALTH BY TYPE OF SMALL-FARM OPERATOR IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Percent Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Farmers (N=100)</td>
</tr>
<tr>
<td>Would Attend</td>
<td>36</td>
</tr>
<tr>
<td>Would Not Attend</td>
<td>16</td>
</tr>
<tr>
<td>Would Maybe Attend</td>
<td>48</td>
</tr>
</tbody>
</table>

\[ X^2 = 11.026 \quad \text{df} = 4 \quad P \ll .05 \]

The chi-square value of 11.026 with four degrees of freedom was below the established criteria, indicating that differences were statistically significant between type of small-farm operators and desire to attend a livestock health meeting. Only six percent of the dual-occupation farmers said they would not attend, while thirty percent of the part-time and seventeen percent of the full-time answered in the negative.
GOAL ALTERNATIVE RANKINGS

In the personal interview schedules completed by the one hundred farm operators, an effort was made to test if profit maximization was a primary goal. In ranking the eight goal alternatives in the survey, farmers placed profit maximization third. In order of ranking by all farmers, the eight goals were: 1) stay in business, 2) improve standard of living, 3) maximize profit, 4) increase farm productivity, 5) reduce debt, 6) increase farm size, 7) provide college education for children, and 8) increase leisure time.

Consideration of this goal ranking indicates that stability and certainty were more important in the value structure of small-farm operators than profit maximization. The development of an extension program should take this indication into consideration and focus on this goal rather than strict profit maximization. Table XLVIII summarizes the responses to the ranking of goals by small-farm operators interviewed. The answers were weighted with the first priority goal valued at seven points, the second at six points, the third at five points, the fourth at four points, the fifth at three points, the sixth at two points, the seventh at one point and no points for the eighth selection.
TABLE XLVIII
A COMPARISON OF GOAL RANKING TO SMALL-FARM OPERATORS IN ILLINOIS EXTENSION REGION X, 1977-78

<table>
<thead>
<tr>
<th>Goal Selection</th>
<th>Total Points</th>
<th>Priority Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stay in Business</td>
<td>544</td>
<td>1</td>
</tr>
<tr>
<td>Improve Standard of Living</td>
<td>482</td>
<td>2</td>
</tr>
<tr>
<td>Maximization of Profit</td>
<td>459</td>
<td>3</td>
</tr>
<tr>
<td>Increase Farm Production</td>
<td>411</td>
<td>4</td>
</tr>
<tr>
<td>Reduce Debt</td>
<td>371</td>
<td>5</td>
</tr>
<tr>
<td>Increase Farm Size</td>
<td>234</td>
<td>6</td>
</tr>
<tr>
<td>Provide College Education for Children</td>
<td>207</td>
<td>7</td>
</tr>
<tr>
<td>Increase Leisure Time</td>
<td>191</td>
<td>8</td>
</tr>
</tbody>
</table>
Chapter 10

SUMMARY, CONCLUSION AND RECOMMENDATIONS

In this chapter, the study is summarized. From these conclusions, implications are drawn both for a small-farmer program in Illinois Extension Region X and for educational programs with small and limited-resource farm operators in general. Finally, implications for further research are discussed.

THE SMALL-FARM SITUATION

In the dynamic real world, adjustments to changing technology are slowed by imperfect knowledge and the immobility of resources. As a result of rapid changes in agricultural production technology and consequent low prices for agricultural products, our nation has a long history of public policies which intercede in the agricultural sector. Since 1930, adjustments of enormous magnitude have occurred in farm numbers, farm population and farm size. The burden of adjustment has fallen heavily on human inputs in the agricultural sector.

The majority of farms in the United States continue to have sales of under twenty thousand dollars. However, these small farms do not produce output in relation to the land, labor, capital and resources they have in their control.

Most agriculturists and sociologists agree that in the near future, small-farm families will continue to face competitive
pressures. Research indicates that farms with annual gross sales of under twenty thousand dollars are not economically-efficient-sized units.

Despite pressures from continued mechanization, increasing equipment size and changing technology, farm numbers are stabilizing. Reasons for this stabilization include limited competition between small and very large farms in some geographic areas where large-scale equipment and operations are not well suited. Off-the-farm employment, retirement farming and the desire to live in non-urban areas may be resulting in the emergence of small-farm population with heterogenous socio-economic characteristics.

Public policy towards agriculture affects small-farm operators. Relative to publicly-financed agricultural research, critics argue that over-emphasis is placed on the area of production efficiency, with insufficient emphasis on the alternatives and adjustment possibilities of farm operators put at a relative competitive disadvantage by new technology developments. The role of disseminating and promoting adoption of research results is the responsibility of the Federal Cooperative Extension Service. Evidence appears to indicate that the Cooperative Extension Service has much work to do with small farmers, particularly those with few resources.

In the formation of national agricultural policy, the central issue has been low returns to agricultural resources. Subsidy and allotment programs have not alleviated the low-income, poverty problem of some small-farm operators, and have displaced labor and shifted production from marginally-competitive to specialized agricultural areas.
During the late 1960's and 1970's, public concern with income
distribution, equality and rural development has become more prominent
in public policy. In agriculture, this has raised the issue of whether
special programs should be developed for small-farm operators. The
U.S. General Accounting Office has recommended intensified assistance
for small-farm operators.

One issue, central to the argument, is the extent to which
small-farm operators are low-income people. Research indicates
substantial nonfarm incomes among small farmers. However, the evidence
also indicates that there are large numbers of small farmers with low
total incomes.

FINDINGS BASED ON STUDY OBJECTIVES

In this section, the primary objectives of the study will be
discussed in terms of the descriptive study results. Each primary
objective is restated and then discussed.

1. The first study objective was to develop an agricultural
and social profile of the small-farm family in southern Illinois.

According to the study results, small-farm operators are engaged
in diverse types of farm production. Preferences vary among
individuals, but trends are reflected. If one were to describe the
mode of the sample as the typical small-farm operator, the individual
would be as follows.

The operator would have an annual gross farm income of just
under twenty thousand dollars. He would consider his primary
occupation as farming and raise forty-seven acres of corn, seventy-five
acres of soybeans and fifty-three acres of wheat with yields similar to county averages. He would apply herbicide to his corn and soybeans, plant hybrid seed corn and use eighty-one pounds of nitrogen on his corn fields. He would not germination-test his soybean seed, double crop or test his soil for fertility.

Our hypothetical small-farmer would market his grain at harvest or feed it to livestock. He would sell his beef as weaned calves and his hogs as feeder pigs. He would receive one-half his farm income from livestock sales. He would raise thirteen sows and farrow 7.6 pigs per litter. Any milk produced would be consumed by family and neighbors. He would be married and have older children living at home. His wife would not work off the farm, but the family would have non-farm income of just under ten thousand dollars per year. The farm family would own most of the land they were farming. Future plans would call for maintaining the present operation as is. Those desiring to make changes would be in the area of buying more machinery and raising more livestock and crops. The limiting factors to change would include the age and health of the operator, debt load or credit and livestock facilities.

Our hypothetical farmer would be a Farm Bureau member with over twenty-five years of farming experience and 10.8 years of formal education. He would be familiar with the Cooperative Extension Service and have visited the extension office at least once during the last three years. His children would not be enrolled in 4-H, and his wife would not be participating in a home economics unit. He would like to receive educational newsletters and have agricultural meetings held in
the local school. His goal is to stay in business and improve the family's standard of living.

2. The second study objective was to evaluate and review existing work done with and programs for small-farm families in Illinois and other states.

According to literature reviewed, there have been several projects aimed at working with small-farm families. They have been conducted by various state extension services and the U.S.D.A. Their basic approach has been to provide technical assistance on a one-to-one basis to selected farmers. The use of professional staff, para-professional "technicians", and volunteers has been successful. Experience indicates that careful planning, cooperation among business, government and individuals within the community, the adequate training of the program staff and resources to conduct demonstrations and to subsidize the initial expenses are all important in developing a successful program. All of the programs involved close, personal relationships between the staff and client. In chapter three, the Georgia Small-Farm Program, North Carolina Program, Missouri Small-Farm Program, Texas Intensified Farm Planning, Virginia Program, Kentucky Program, Illinois Intensified Farm Development Program, Wisconsin Marginal-Farmer Program and the Elk River Project were reviewed. Most of the projects reviewed have had positive impacts in raising participants' income through improved management practices and new enterprise combinations. It appears that the one-on-one approach of an extension technician working directly with individual, small-farm operators is successful; however, the close, interpersonal
relationships which are involved in such an approach should be recognized in designing the program. Demonstration projects which provide hard evidence of profitability also appear valuable. Problems beyond management and enterprise improvements may be encountered when working with small farms.

The evidence to date indicates that small-farm operators are receptive to assistance programs, and that these programs can improve the small-farm income situation.

3. The third study objective was to develop guidelines for the development and delivery of educational programs by the Cooperative Extension Service for small-farm operators.

The results of this study indicate that there are many ways to work with the same audience successfully. It also indicated certain trends and needs which run through successful extension programs with small-farmer clientele. The following chapter is this student's model for the development of a small-farm program by the Cooperative Extension Service planning unit.

4. The fourth study objective was to identify the factors which cause divergence between potential and present farm income levels.

The evidence indicated that small-farm incomes can be increased through better management, production yields and resource use. On a policy level, differentiation of the small-farm population on the basis of nonfarm employment and income is useful.

The small farmer is primarily concerned with the economic well-being of his own firm and the impact of his economic position on the present and future situation for his family. His goals include
physical, economic and social needs very similar to those of higher-income producers. Most basic in his desires is to subsist and to maintain his family from year to year while avoiding the general instability situations beyond his own control associated with markets and production. This strategy requires cautiously-developed managerial skills which are poorly understood by many not actively participating in the small-farm system. To attain the subsistence objective, he must identify those production processes, commodities and markets that will allow him to minimize the risk of failure and serious disruptions in the family process. For this reason, small-farm development is a slow, deliberate process of interdependent growth. The large change, so often sought, occurs by a series of well-instituted, small, interdependent activities.

Risk perception and risk aversion then become major performance criteria, determining how the small farmer will react to various potential means of improving his economic status. He will adopt agricultural technologies that he perceives to be within the realm of risk maximums acceptable for his own income and asset position. Should the probability of success run very high for a given improved practice, yet be associated with a very high probability of failure, the farmer is less inclined to adopt the new practice than he is to maintain production with proven technology and a low probability of raising his productivity, but at the same time, a low probability of failure.

Thus, limited-resource producers usually will not operate with highly-variable technologies in the short run, even though the average income position may be quite high over the long run. A general
reaction to this situation by many people outside the small-farm system has been that those farmers are backward and traditional in their behavior and irrational relative to their economic behavior in using new technologies.

The magnitude of the output realized at the small-farm level is dependent upon four major conditions. These are 1) the production system, 2) the market system and incentives, 3) family consumption requirements, and 4) risk aversion. Most often we focus on how the production system influences small-farm production, and then we turn "some" consideration to market incentives, but fail to give due concern at all to family consumption and risk-aversion necessities. Family consumption is one of the most important items influencing small-farm production. Ninety-three percent of all farmers indicated the garden was extremely important to their family's food supply. Influencing family needs are family size, the resource position of the family and socio-cultural preferences. The economic status of the family directly affects the degree of risk the family is willing and able to assume in the production process. Risk aversion, then, is dependent upon family structure, family needs (which, in turn, are influenced by the resource position of the family), family size and the basic consumption needs and aspirations. Thus, it is risk aversion and family consumption that are the first factors to determine the level of participation the small farmer can contribute in a given area.

The production system is basic to small-farm production. Items of primary influence on the production system are the quality of technical knowledge available to the farm firm, the farmer's ability to
assimilate that knowledge into his operation and his general managerial skills in determining optimum production patterns within his resource and risk constraints.

A people-oriented program can help us be more successful in working with small farmers. Present production-oriented programs give little consideration to the farm family unit. We need extensive study of the family, however, to provide information on attitudes, values, goals and aspirations. These valuable insights should aid development of more successful programs. A greater understanding of the small-farm family will help establish more workable programs for any area or group of small farmers.

5. The fifth study objective was to determine whether subsectors within the small-farm population can be identified.

In this study, days of employment off-the-farm were used to develop three subsectors within the small-farmer audience. These subsectors included 1) full-time farmers, one who works ten days or less off the farm; 2) part-time farmers, one who works more than ten days but less than one hundred, fifty days off the farm; and 3) dual-occupation farmers, one who works more than one hundred, fifty days off the farm. Based on this breakdown, forty-one percent of the area farmers were full-time farmers, twenty-three percent were part-time farmers and thirty-six percent were dual-occupation operators.

The full-time and part-time operators considered their primary occupation as farming, while the dual-occupation operators did not. The full-time and part-time operators practiced a more diverse type of agriculture than did the dual-occupation farmers. Dual-occupation
farmers did some forward contracting of grain and stored more grain for sale after harvest, while full-time and part-time farmers fed more of their grain and did no forward contracting. Seventy percent of full-time farmers were farrow-to-finish swine producers, while eighty-seven percent of the dual-occupation operators sold their pigs at feeder weights. Part-time operators were doing both.

More than one-fourth of the dual-occupation operators had no livestock sales, while less than five percent of the full-time operators had none. Fifty-nine percent of the full-time operators received more than one-half of their farm income from livestock sales. Thirteen percent of the part-time farmers and thirty-six percent of the dual-occupation farmers received more than one-half of their income from livestock sales.

Dual-occupation farmers received seventy-five percent of their total income from nonfarm sources, while full-time farmers received forty percent from nonfarm sources.

Full-time farmers owned the most farm land and farmed more acreage than part-time or dual-occupation operators. But when compared to ten years ago, both part-time and dual-occupation farmers own and farm more land. Full-time farmers have dropped in both ownership and land being farmed. This trend is further revealed in examining present farming intentions. Only seventeen percent of the full-time operators plan to expand, and ten percent plan to cut back, while fifty-eight percent of the dual-occupation farmers and thirty-nine percent of the part-time farmers plan to expand, and none indicated a desire to cut back.
Less than eighteen percent of the full-time farmers indicated a limitation of land, debt or credit to keep them from making changes, but sixty-four percent of the dual-occupation farmers indicated a lack of land, and sixty-one percent of the part-time farmers indicated debt load as limitations to farm changes.

The dual-occupation farmers were the best educated, with nearly one-half having completed high school. Grade school education was the norm for both part-time and full-time farmers.

Full-time farmers were most familiar with the Cooperative Extension Service and other U.S.D.A. agencies. More part-time farmers felt that both the Soil Conservation Service and the Cooperative Extension Service should be providing them with additional help.

Full-time farmers wanted more information on marketing, crops and livestock production and the use of pesticides. Part-time and dual-occupation farmers requested information on crops and livestock production, but indicated little interest in marketing or pesticide use.

The dual-occupation farmers indicated the highest level of willingness to attend an educational meeting or desire to receive an educational newsletter. Full-time and part-time operators were more receptive to educational newsletters than meetings.

This study provides the bench mark data from which future changes brought about by small-farm programs can be measured and evaluated. There is a great deal of variation among small-farm operators. The results concerning management practices help to identify areas of weakness in management with which para-professionals
can assist the farmer.

The problems identified by each small farmer, such as lack of operating money, health or age, are constraints within which the staff must work. Within these constraints, Extension can help each farmer make the best of their situation as far as their farming operation is concerned. The constraints offer some opportunities (for example, an outside job takes time, but can provide operating capital), but also creates limitations as to what changes in management practices and production can be expected.

The survey results indicate that most of the farmers contacted are not striving towards a commercial scale of farm operation. Nevertheless, their farm incomes are a significant part of their total income.

Within this framework, those areas in which the farmers expressed an interest in receiving assistance, provide some guidelines as to where programs should place emphasis.

Qualified para-professionals, working on a one-to-one basis at the local level, can provide leadership and guidance to the small farmers. Although these programs require competent professional supervision, they can reach more small farmers for the money than professionals in the same role.

Last, but not least, once small-farm programs have been developed, total commitment by all involved is needed. Only through total commitment can the welfare of the small-farm family be improved and a program be successful.
Chapter 11

CONSIDERATIONS FOR THE DEVELOPMENT
OF A MODEL SMALL-FARM-FAMILY PROGRAM

There are many methods and many learning experiences which lead to successful Extension programs. There are, however, trends and threads which run through most successful Extension programs for small farmers. A change agent should give consideration to these threats when developing a program for the small-farmer audience. A number of suggestions concerning the design and conduct of future Extension programs for small farmers can be extrapolated from the present study, and the review of programs in selected states. In this chapter, recommendations will be presented for the design of future programs for the small-farmer or as a family audience.

When developing a small-farmer program, it is vital that the program be guided by a carefully-developed and well-articulated overall design. Educational efforts should be based upon the needs and upon a long and short-term strategy for accomplishing these goals.

A well-constructed project design should facilitate goal achievement without constraining experimentation with methods and programs. It is important that exploration be guided by a well-developed strategy rather than be permitted to occur without sufficient plan.
Programs for small farmers without an established purpose and plan of action are likely to lead to random bits of knowledge for a few interested individual farmers, but are less likely to progress towards the goals of overall-improved practices and quality of living. Extension programs for small farmers are action-orientated. They are guided by a plan of work, composed of educational objectives and learning experiences to meet needs.

Ample time needs to be allowed to develop rapport with potential participants. Gaining the trust and confidence of small-farm families and their cooperation and participation in Extension programs is likely to be more difficult than the development of these relationships with commercial farmers. Since the concerns and needs of small farmers may vary from those of the mainstream of agriculture, programs will need to be skillfully developed in ways which appeal to this clientele group, if their participation is to be sustained once obtained.

To obtain maximum participation, program planners need to understand the attitudes, concerns and needs of the small-farm families for which the programs are intended. Programs that affect sustained participation over extended periods of time are likely to be those that provide tangible benefits and learning experiences otherwise unobtainable. Programs that stress abstract goals seem less likely to succeed.

Once sustained participation is obtained, it is important that participants be provided the skills and resources necessary to continue programs without professional assistance. Programs which are permitted
to collapse when staff guidance is withdrawn may be detrimental to their intended purpose.

The Extension organization needs to determine whether available resources and organizational structures are adequate to accomplish the planned goals. If goals of programs for small-farm families are not matched carefully to the resources the organization is able and willing to generate in their pursuit, it may be necessary to shift resources from other programs or commitments. The fulfillment of commitments in this manner can have negative consequences for other programs from which resources were taken.

Evaluation components of small-farmer programs should be planned and conducted. Programs, whether new or on-going, should include this evaluation component. This will further achieve program goals by providing measures of progress and information necessary to correct the design of processes which are failing to achieve their purposes.

Extension programs for small farmers depend heavily upon the professional and para-professionals with program responsibilities. Careful selection of staff members with attention to motivation, interest, and personality for work with small farmers is critical. Further, the need for the staff to possess the ability to communicate and demonstrate basic agricultural skills is critical to achieve effective results. In addition to selection, it would be helpful to involve the staff members responsible for conducting the programs in the program design.

At the heart of a successful small-farmer program will be the ability of the change agents to identify and meet the needs of the
small-farm family. One of Extension's greatest strengths has been its flexibility in helping people adjust to needs imposed by a changing environment. Changes important to the small-farm families will include helping them meet their needs for biological, physiological, economic, social, aesthetic and moral well being. Programs are successful only to the extent that they focus on and help meet recognized needs.

In many cases, the Extension staff will need to be aware of and work with attitude-change procedures. This will dictate the use of involvement such as demonstration plots, tours and neighborhood programs. Other methods of attitude-change which have been effective include one-to-one contact and working in small groups.

Programs directed towards contacting small farm operators will require more personal contact and less dependence on mass media. Program evaluation should de-emphasize the number of personal contacts in favor of more effective communication contacts. Program accomplishments should be evaluated in terms of changes in human behavior, attitudes and abilities rather than changes only in physical units.

A successful program normally requires considerable direct contact or individual visits with the enrolled families, at least in the beginning stages of the program. Measurable progress is often slow, especially in the early phases of the program. Many families are slower than aggressive farmers in adopting modern technology, making necessary changes or expanding the business. Therefore, results will usually not show up quickly and may be below expectations.

If possible, families should be encouraged in some activities
that will give quick results. This may involve the adoption of technology, expanding volume, increasing efficiency, changing enterprises, adding enterprises or any other method that will give relatively quick income results. If income is not increased, the producer should feel that something worthwhile has been learned. The first change initiated by the staff member must be successful in the judgment of the producer cooperator.

It may be desirable to measure progress in physical terms rather than monetary terms, since it is often difficult to obtain complete records from the group. If the agricultural price situation changes rapidly, the actual progress made on the individual farm may be difficult to appraise if measured entirely in monetary terms. This has been especially true the past several years.

A program for small-farm families involves a different type of audience than many Extension staff members have worked with in the past and should be considered a program in which success is not as high as one may like.

The approach most often used in achieving successful results with small farmers had, as a common thread, the use of para-professional aids. These aids made one-to-one contacts with selected farmers. The motivation, training, and commitment of the staff, together with the leadership provided by supervisory personnel, adequate funding, and demonstration projects, appears to be the key elements influencing program success.

Extension workers have often been good at helping develop plans. However, with this type of audience, the follow-up to implement the
plans is very essential. It is not enough just to plan with these individuals. Proper follow-up to observe, encourage, and guide implementation may be necessary. Care must be taken not to push the families beyond their capabilities. Working with these families requires special staff skills and patience.

Some consideration should be given to the title given to the program. Although the program may be designed to work primarily with low-income farm families, the title given to the program may well be small-farm program or limited-resource-farm program. People do not often like to be classified as being in a low-income category. The title of the program, and how it is implemented in the individual communities could have a major impact on its success.

Once people get confidence in Extension personnel, they are more likely to respond to some of the traditional Extension activities and meetings. This response makes for more efficient use of staff in carrying out any program.

Demonstrations, tours, and meetings must be within the scope of potential achievement by the individuals. The small-farm operator who may be considering seeding five acres in alfalfa may not be impressed by a demonstration on a farm where they are seeding eighty acres of alfalfa. Even though the techniques may be basically the same, the size of the enterprise may be the factor that determines whether or not he will respond.

It should be recognized that in highly-competitive agriculture, farm families with limited resources and skills may never have favorable incomes as long as resources are limited. Because of the
rapid mechanization of agriculture, families with limited land or capital may find they are going to continue to be at a disadvantage when they attempt to increase income levels. Those that are growing or aggressive are more likely to maintain or improve their position than those that have leveled off or are not in a position to grow.

When working with the families and examining all the alternatives, the best choice for some may be an occupation or business outside of agriculture. If these farmers should leave agriculture, this should not be considered a program failure.

The diffusion of knowledge, skills, and values is the key to success. The adoption and diffusion of program objectives is one of walking with the farmer before you run. A successful starting point, level one, might be one simple recommendation. (See Figure 3.) As the Extension staff and farm operator become more confident in each other, they progress to level two, which is a more complex association. Over time, this association can continue to develop upward to levels three, four, and five, which would include work with the total farm operation. While farmers are starting to improve, they are in different stages of development and require varying degrees of assistance. Some small-farm operators will be ready for entry level assistance beyond level one, while others will be at the lowest level. A major responsibility of the Extension staff will be the determination of the level and farm enterprise in which to begin an educational program. The task will then evolve into moving the small-farm operator to the next higher level. Some farmers will be able to move to higher levels at a more rapid rate than others. The following is a diagram of the five levels of developmental teaching.
Figure 3.

DEVELOPMENTAL TEACHING LEVELS FOR SMALL-FARM OPERATORS

Level I
Direct Recommendations
- Plant Certified Seed

Level II
Amount of Fertilizer for Crop

Level III
Total Enterprise
- Beef
- Hogs
- Soybeans

Level IV
Combination of Enterprise
- Hogs and Corn or Beef Cattle and Pastures

Level V
Total Farm
Management of the Whole Farm Unit
The following is a list of considerations in developing a small-farm-family program.

1. Return to the Basics. The process for small-farmers programs must return to the basics. Facts, values, beliefs, individual goals, individual needs and specific problems of small-farm families as a group must be understood in developing or identifying small-farm development programs. It should not be assumed that we know what these basic characteristics are and how they are manifest in the performance criteria and behavior of small farmers.

When the concern is about the well-being of farmers, and about agricultural production, marketing and consumption in total, it is not important to expect that much time should be spent clearly defining illusive-size characteristics of those being worked with.

2. Farmers are Consumers and Producers. Programs for small-farm families must include the concepts of the farmer as a consumer and as a producer.

3. Use of Para-professionals. Para-professionals have been very successful in working with the small-farm operator. Resources can be extended to provide educational programs to additional small-farm families through the use of para-professionals.

4. Gain the Trust of Farmers. Before the change agent can get the small-farm operator to make changes, he must gain the trust of the operator and his family.

5. Flexibility is Necessary. The program, and the change agent must be flexible in developing and implementing educational programs with the heterogenous small-farm families.
6. **Early Success.** It is important that an early success can be developed when first working with a new family, or in a new community. The ability of the staff member to work with the family or in the area might entirely depend on the success of the first project.

7. **Good Community Feeling.** The image of the program in the community, and by the small-farm family is important. The program name and terminology used should be carefully selected.

8. **Learn by Doing.** Meetings, demonstrations, and farm activities should provide ample opportunity for hands-on activities. Each learner should be provided learning experiences with the opportunity to practice what is being taught.

9. **Move From the Simple to the Complex.** Activities, projects, recommendations and work with small-farm operators should start with a simple practice and gradually move toward the complex total farm management.

10. **Evaluation Based on Non-Income Factors.** Evaluation of programs for people should include factors other than income when determining the success of a program. Programs and practices can be successful, but changing economic conditions may show little, if any, progress or success.
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FARM INTERVIEW SCHEDULE

Number __________  Date __________

The following questionnaire is important in helping the University of Illinois and the Cooperative Extension Service in serving farmers in southern Illinois. Your help is most appreciated.

1. Did you raise corn or grain sorghum in 1977?  ___ Yes  ___ No
   (If no, go to question 9)

2. How many acres of corn and grain sorghum did you raise in 1977?______________ acres

3. To how many acres did you apply herbicides (weed killer)?______________ acres

4. To how many acres did you plant hybrid seed corn?______________ acres

5. What percent of the corn did you:
   Harvest yourself?______________%
   Have custom harvested?______________%

6. What percent of crop was:
   Sold before harvest?______________%
   Sold at harvest?______________%
   Fed to livestock?______________%
   Stored for later sale?______________%

7. What was your average yield from all corn plantings in 1977?______________ bu/acre

8. How many pounds of actual nitrogen were applied per acre to corn?______________ lbs.

9. Did you raise soybeans in 1977?  ___ Yes  ___ No
   (If no, go to question 17)

10. How many acres did you raise in 1977?______________ acres

11. How many of these acres were double crop soybeans?______________ acres

12. To how many acres did you apply a herbicide (weed killer)?______________ acres
13. Was the seed tested for germination?____ Yes __ No

14. What percent of the 1977 crop was sold:
   Before harvest?__________________________ %
   At harvest?______________________________ %
   Fed to livestock?__________________________ %
   Stored for later sale?______________________%

15. What was the average yield from all non-double crop soybeans grown in 1977?________ bu/acre

16. What was the average yield from all double crops in 1977?________ bu/acre

17. Did you harvest wheat in 1977?____ Yes __ No
   (If no, go to question 23)

18. How many acres of wheat did you raise?____ acres

19. What variety of wheat was planted?

20. How much actual nitrogen was applied per acre to wheat?________ lbs/acre

21. What was the average yield from all wheat harvested last year?________ lbs/acre

22. Did you plant clover in the wheat?____ Yes __ No

23. Other crops and number of acres which produced income in 1977.______________________

24. Have soil tests been taken on your farm?____ Yes __ No
   (If no, go to question 27)

25. When was the last test taken?______________________

26. Do you fertilize according to the soil tests:
   All of the time?___________________________
   Most of the time?__________________________
   Rarely?__________________________

27. Do you raise beef cattle?____ Yes __ No

28. Number of cows maintained last year.________

29. Are calves usually sold as:
   Calves?__________________________ %
   Yearlings?__________________________%
   Slaughter Weight?__________________________%
30. What kind of pasture do you have?
   Grass legume mixture
   Fescue only
   Red clover
   Volunteer
   Other

31. Where do you usually get your bulls?
   Raise them
   Breed sales
   Neighbor
   Other

32. Did you raise any pigs in 1977? __ Yes ___ No
   (If no, go to question 38)

33. Is your operation best described as:
   Farrow to finish
   Raising feeder pigs
   Finishing feeder pigs

34. Number of sows maintained last year

35. How many times per year do you farrow?

36. Number of feeder pigs raised last year

37. Number of finished pigs sold last year

38. Did you raise any sheep last year? __ Yes ___ No
   (If no, go to question 42)

39. Number of ewes in flock

40. During what month are lambs dropped?

41. Do you shear your own lambs? __ Yes ___ No

42. Did you raise any milk cows or goats last year? __ Yes ___ No
   (If no, go to question 45)

43. Was milk primarily for use by:
   Family
   Family and neighbor
   Commercial sale
   Other

44. Number of milk cows or goats maintained
45. What percentage of all livestock marketed are sold to:
   Local sale barns? ________________________________ %
   Terminal markets? ________________________________ %
   Neighbors or individuals? __________________________ %
   Association sales? ________________________________ %
   Other? ________________________________________ %

46. Would you say livestock sales and products accounted for which of the following part of your total farm sales?
   Less than 25 percent______________________________
   25-50 percent____________________________________
   51-75 percent____________________________________
   76 or more percent________________________________

47. Would you attend an educational meeting showing methods to use for good health of livestock if there was no charge?——— Yes _____ No _____ Maybe

48. Would it benefit you to receive a practical newsletter from the University of Illinois on livestock health and feeding?——— Yes _____ No _____ Uncertain

49. Do you have children who live on the farm?——— Yes _____ No

50. What are their ages? /_____ /_____ /_____ /_____ /_____ /_____ /

51. Would you say family members who live at home provide:
   A good deal of farm labor?__________________________
   Some farm labor?_______________________________
   Little farm labor?______________________________

52. About how many days per month do family members, other than operator, contribute to work on the farm?_____________________________ days

53. Do you do any work off the farm?——— Yes _____ No
   (If no, go to question 57)

54. About how many days did you work off the farm last year?_____________________________ days

55. What types of employment, other than farming, have you had since joining the work force?_____________________________
56. Do you consider your primary occupation as:
    Farming?______________________________
    Non-Farming?__________________________

57. About what percent of your income is from off the farm?___________________________ %

58. Did your wife work off the farm last year?
    Full time______________________________
    Part time______________________________
    Not at all______________________________

59. What level of the total family's income earning comes from off the farm:
    Less than 20%__________________________
    21-40%_______________________________
    41-60%_______________________________
    61-80%_______________________________
    More than 80%________________________

60. What farm magazines do you receive?__________________________

61. Would you say that you normally:
    Read all through the magazine?__________
    Read some articles?____________________
    Page through the magazine?______________

62. What farm organizations are you a member?__________________________

63. Are you familiar with the Agricultural Extension Service (Farm Adviser) in this county?__________________________ Yes  No (If no, go to question 66)  Unsure

64. Would you say the Extension Service gives you:
    A good deal of help?____________________
    Some help?____________________________
    Little help?____________________________

65. Do you feel it should be providing you with:
    More help?____________________________
    About right now?________________________
    Doesn't make any difference?______________
66. Do you think the Agriculture Extension Service is best described as:
   - Working mostly with large commercial farm operators?
   - Working mostly with medium and small farm operators?
   - Working with all size farm operators?

FAMILY PARTICIPATION AND DEVELOPMENT
Check those that apply. Extension activities within the last three years:

<table>
<thead>
<tr>
<th>Husband</th>
<th>Wife</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visited the extension office.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extension adviser visited farm.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attended Extension Service tours, meetings or demonstrations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participated in home economics activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participated in 4-H activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participated in expanded food and nutrition program.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received information from county extension office.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

74. Are you familiar with the Soil Conservation Service? Yes No
   (If no, go to question 77) Unsure

75. Would you say it gives you:
   - A good deal of help?
   - Some help?
   - Little help?
76. Do you feel it should be providing you with:
   More help?-----------------------------
   About right now?----------------------
   Doesn't make any difference?----------

77. Why do you farm?______________________________

78. What information would help you most in your farming?______________________________

79. Do you have a family vegetable garden?------  ___ Yes  ___ No
   (If no, go to question 81)

80. Do you feel the family vegetable garden is best described as:
   Extremely important part of the family's food supply?---------------------------
   Provides a large amount of food during the summer?---------------------------
   Provides some fresh vegetables during the growing season?-----------------

81. In the last year have you participated in A.S.C.S.:
   Cost sharing programs on lime or improvements?----------------------  ___ Yes  ___ No

82. Received deficiency payments?----------------  ___ Yes  ___ No

83. Received disaster payments?----------------  ___ Yes  ___ No

84. A.S.C.S. nonrecourse crop loans?----------  ___ Yes  ___ No

85. Where do you usually get information on new farm practices?__________________________

86. If extension were to arrange a meeting for farmers in this area, where would you suggest it be held?__________________________
87. Over the next three to five years, what changes would you like to make in your farming operations?
   - Expand your farming operation
   - Maintain present farm operation
   - Cut back present farming operation

88. With your farming operation, what are some changes you would like to make? (Check those mentioned.)
   - Raise more livestock
   - Raise more crops
   - Rent additional land
   - Buy more land
   - Purchase more machinery

89. What may prevent you from making these changes on your farm?
   - Not enough land
   - No land for sale nearby
   - Age or health of operator
   - Lack of livestock facilities
   - Lack of family or hired help
   - Present debt
   - Ability to borrow money
   - Do not want to go into debt
   - Uncertainty of future
   - (Other) ______________________________

90. What is the highest grade school you had an opportunity to complete?

91. How many years have you farmed?

92. Did your father farm:
   - Most of his life full-time
   - Part-time and work part-time off farm
   - Did not farm

93. Number of acres that you now farm
   - Farmed 10 years ago

94. Number of acres that you own
   - Owned 10 years ago
95. Approximate income received from sales of all agriculture products in 1977:
   a) Under $5,000
   b) $5,000 - $10,000
   c) $11,000 - $20,000
   d) $21,000 - $30,000
   e) $31,000 - $40,000
   f) Over $40,000

96. Please rank the following, in order of highest priority, of your goals in the farming operation:
   1. Improved standard of living
   2. Providing a college education for children
   3. Increased farm production
   4. Stay in business
   5. Reduce borrowing or debt
   6. Maximize profit
   7. Increase leisure time
   8. Increase farm size

97. How much forage did you raise in 1977?

98. How much forage did you buy in 1977?
Frank Lyle Brewer was born March 26, 1947 in Bloomington, Illinois. He grew up on a crops and livestock farm in Champaign County, Illinois. He graduated from Unity High School in 1965. He attended Illinois State University and graduated from the University of Illinois with a Bachelor of Science degree in Agriculture Industries in 1969. He took a position as assistant extension adviser, agriculture with the Illinois Cooperative Extension Service in Edgar County following graduation. While working in this position, he completed a Masters of Science degree in Extension Education with emphasis in agriculture economics in 1972. In 1974 he was transferred to Jefferson County as extension adviser, agriculture. Mr. Brewer was accepted into the Doctoriate Program of Extension Education programs at Louisiana State University in 1977.

Mr. Brewer is a specialized adviser in horticulture within the Cooperative Extension Service. He has also been active in working with county cooperatives and overall farm management. He is a member of the Illinois and American Society of Farm Managers and Rural Appraisers and active in the Illinois Extension Advisers Association.

In August, 1968 he married Anita Marie Kroes. They have three daughters, Kristine, Kara and Kimberly. He presently lives at Woodlawn, Illinois and works as the Jefferson County Extension adviser, agriculture.
Candidate: Francis Lyle Brewer

Major Field: Extension Education

Title of Thesis: An Educational Framework from Which to View Extension Programs for Small-Farm Families in Southern Illinois

Approved:

Edward W. Cassie
Major Professor and Chairman

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Dean of the Graduate School

EXAMINING COMMITTEE:

Sudoh, Verna

Rowe, Fred

Lid J. Hedding

Coye D. Costly

Date of Examination:

October 22, 1979