Small Farms:

A Review of Characteristics, Constraints, and Policy Implications

By James E. Horne
Foreword

There is a very real fear that the small farmer, long a stalwart of American agriculture, may be disappearing from the scene. A variety of factors have contributed to the rapid decline in the number of small farmers, and if this trend is allowed to continue unchecked, the small farm as a viable entity may well disappear.

In "Small Farms: A Review of Characteristics, Constraints and Policy Implications," James E. Horne presents a detailed look at the various constraints on increasing agricultural income on small farms and suggests approaches to overcoming these constraints by emphasis on production, education, institutional change and policy.

Horne, Acting Director of The Kerr Foundation, Inc., Agricultural Division, has had extensive involvement in consultation work with small farmers in southeastern Oklahoma, and he draws on that experience for many of the comments in this paper. However, there is much commonality among problems faced by small farmers everywhere, and the findings Horne presents are equally relevant at the regional and national levels.

The widespread interest displayed by state and Federal agencies and private organizations in the fate of the small farmer has led to program efforts to prevent the demise of the small farm, but continuing and increased efforts are needed if this goal is to be achieved.

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Small Farms:  
A Review of Characteristics, Constraints  
and Policy Implications*

by

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*The author has been actively involved in consultation work with small farmers in southeastern Oklahoma and relies heavily upon that experience for many comments in this paper. The author is also indebted to Dr. Larkin Warner, Oklahoma State University, former Director of the Economics Studies Division of the Kerr Foundation, for his most valuable comments and suggestions.

Published by the Southern Rural Development Center    Box 5406
Mississippi State, MS 39762
September 1979

SRDC Series Publication No. 33
Because of the rapid decline in the number of small farms and a fear that they may disappear entirely, the small farmer has become the object of increasing interest in recent years. State and Federal agencies and other organizations have convened numerous workshops and conferences to discuss problems facing small farmers and possible solutions to those problems, and some programs to improve the small farmers' lot are underway. But the decline in the number of small farms continues, and many of the remaining small farmers still face the multitude of problems which has driven so many of their fellow farmers out of business.

This report begins with a very brief overview of the current trends in American agricultural production, then turns to a statistical summary of small farm operator characteristics and a look at the various constraints on increasing agricultural income on small farms. These constraints are classified as environmental, technological, financial and economic, and sociological. Approaches to overcoming these constraints may emphasize production, education, institutional change, and policy. Although this report uses a south-eastern Oklahoma setting to introduce some of the dimensions of the small farm problem, the findings it presents are equally relevant at the regional and national levels.
Small Farms - A Policy Challenge

The world food situation, trade deficits, energy problems, and inflation are issues of great concern to policymakers in our nation's capital. The American farmer has been called upon to help reduce trade deficits via agricultural exports and to produce more products to satisfy world requirements for food and fiber. Recent developments with China and increasing economic aggressiveness by the OPEC nations may further stimulate the opportunity and need for increased agricultural production.

In the past, most policy efforts to stimulate production were directed to the larger commercial farms. Utilizing economic principles to guide production, the larger farmer adopted new technology and better cultural practices and substituted capital for labor. In 1977, 31 percent of the total number of farms in the United States had sales over $20,000. This group accounted for 89 percent of total sales volume. The remaining 69 percent of all farms, with annual sales of less than $20,000, were responsible for only 11 percent of total sales. These smaller units controlled approximately half the nation's land in farms (17).

It has been suggested that policymakers interested in expanding agricultural production should not overlook probable surplus capacity on small farms (11). It is possible that some government programs and policies would be
more cost effective if they were directed toward the small farmer. Increasing agricultural income on small farms is a reasonable policy goal, and is probably in the best interest of the nation. Although not all small farmers desire to expand, most would welcome an increase in income. However, traditional approaches of delivery and incentives will have to be altered to deal with the unique sociological, psychological, technological, and economic needs of the small farmer.

**Defining a Small Farm**

What features are used to measure the size of a farm? How small is a "small farm?" Various guidelines have been suggested for delineating farm size. The national guideline defined by the Food and Agriculture Act of 1977, is $20,000 in annual sales or less. Others have used $10,000 (11). Seastrunk suggested developing a farm income scale within a local area and then considering the lower one-third as the target group (12). Voth and Redfern have suggested that value of assets might be an alternative (21).

In this report, a small farm is not rigidly defined. Conceptually, the designation is based upon community standards as proposed by Seastrunk (12). However, the small farmer referred to here will fit well within the aforementioned sales guidelines. The small farm also utilizes
mostly family labor and is normally no more than 240 acres in size. Rigid adherence to a dollar guideline could mean that, due to volatile agricultural prices, a farm would be considered small one year and large the next.

Small Farms in Southeastern Oklahoma

A profile of the small farm operator in southeastern Oklahoma can be developed from the Census of Agriculture and other statistical sources (16). Although southeastern Oklahoma has unique characteristics, it also has features not unlike much of rural America in the Ozarks and Appalachia.

The Study Area

The study area is composed of the 14 counties in eastern Oklahoma that make up the USDA's East Central and Southeast Oklahoma crop reporting districts (Figure 1). The 14-county area's total population in 1977 was 355,400 (10). Like many other parts of rural America, this region has recently been experiencing substantial net immigration and population growth--its total population expanded 10 percent between 1970 and 1977. Much of this population growth is related to the spread of industrial employment throughout the region, with concentrations of activity at Muskogee and neighboring Fort Smith, Arkansas. In addition, lake recreation in the area makes it increasingly attractive to the retired and semi-retired (3).
Figure 1
Southeast Oklahoma Counties*

* See Table 1 (p. 13) for a list of the 14 counties included in the study area.
In spite of recent economic growth, southeastern Oklahoma remains a relatively low-income area. In 1976, the 14-county region's per capita personal income was $4,044—only 63 percent of the national average (19). The incidence of rural poverty is high, with a significant portion of this poverty associated with small farming units.

Farm Characteristics

The Census of Agriculture for 1974 is the only comprehensive data publication permitting an examination of contrasting characteristics between small and large farms. There are a number of data limitations associated with this source, the most important of which is the fact that the only detailed comparisons of farm characteristics that can be made involve contrasting farms having sales of $2,500 per year and over with those having less sales. A comprehensive sector analysis is needed emphasizing detailed characteristics of farms with sales of less than $20,000. Obviously, this is not possible with existing data. In addition, the Census of Agriculture data are deficient regarding the activities of very small units, because no information is included for units with gross sales less than $1,000.

Agriculture in southeastern Oklahoma is dominated by cattle production. In 1974, almost three-quarters of the value of farm marketings in the region involved livestock and poultry (15).
It is clear that, by almost any definition, the great bulk of the farms in southeastern Oklahoma are relatively small (Table 1). Four-fifths of the region's 12,595 farms had sales of less than $10,000 in 1974. By increasing the limit to $20,000, 90 percent of the farms are included.

Rugged terrain and relatively poor soil quality characterize much of the region, and many farm units consist of rather small acreages. In 1974, about 56 percent of the farms in southeastern Oklahoma were less than 180 acres in size, and 86 percent were less than 500 acres.

As is the case nationally, most of the small farm operators in the study area are in the upper age brackets (Table 2). About 70 percent of the farmers are 45 years old or more. Many of these older farmers are occupationally and geographically immobile due to age, health, and lack of training. Any strategy for increasing agricultural income on small farms should take into account the difference in needs between younger and older operators.

Many of the region's farmers hold jobs off their farms. Among those reporting off-farm work in 1974, 70 percent worked more than 200 days off the farm. Any small farm development program must consider the amount of labor that is available to the farming operation.

Published Census of Agriculture data permit detailed farm operation comparisons only for the $2,500 per year sales break point (Table 3). In 1974, 52 percent of south-
eastern Oklahoma's farms had gross sales less than $2,500. Generally, farms with sales of less than $2,500 tended to be fully owned by the operator (54 percent), whereas farms with sales greater than $2,500 did not exhibit such a strong tendency. Farms with sales of $2,500 and over were more likely to be part-owned or tenant-controlled than were the smaller farms. For example, 30 percent of the small farmers were part owners, compared to 70 percent of farmers in the larger sales volume category. Tenant farming was about evenly divided among large and small farms—52 percent and 48 percent, respectively.

Farms with sales of less than $2,500 accounted for 19 percent of the land area in 1974, yet the value of their production was only 6 percent of the total. Their production costs, however, were about 9 percent of the total. It seems fair to conclude that small farms control a larger share of the land area, produce less per acre, and have higher per unit costs than large farms. The average size of the small farm in 1974 was about 132 acres, whereas farms with greater sales volume averaged 507 acres.

Farms with sales less than $2,500 also tended to have relatively higher investments in land, buildings, machinery, and equipment. For smaller farms, the value of land and buildings per acre was almost 20 percent greater than for the larger farms; the value of machinery and equipment per acre was 50 percent greater on the small units. Given the
fact of lower output per acre on the smaller units, this implies higher fixed costs per unit of output for the small farmer.

Finally, it appears that small farmer livestock production operations result in a substantially lower rate of turnover than is the case for larger units. In 1974, southeastern Oklahoma farms in the below-$2,500 sales category held 18 percent of the region's cattle inventory, yet produced only 11 percent of cattle sales.

Constraints on Increasing Agricultural Income on Small Farms

Low farm productivity, and thus low farm income, is the result of many complex forces impacting upon the small farmer. Increased production on small farms cannot be accomplished with traditional emphases on improved credit, technology, and management practices alone. Traditional programs must be integrated with new approaches sensitive to human needs, attitudes, goals, and aspirations.

Programs designed to increase agricultural income on small farms must be geared to deal with the constraints faced by the small farmer. For ease of discussion, these constraints are categorized as environmental, technological, financial and economic, and sociological.

Environmental Constraints

The small farmer is subject to many surrounding forces.
His ability to manipulate the enterprises of his farm—subject to his area's soils, plant and animal life, and climate—affects his net income at the end of the year. Following is a discussion of these constraints within the study area.

Soils. In their natural state, the soils of southeastern Oklahoma are low in physical productivity.* Although poor soil quality is not the sole cause of low farm incomes in the area, it is a contributing factor.

Most of the area's soils fall into one of three groups: (1) Ouachita Highlands, (2) Ozark Highlands, and (3) Eastern Cherokee Prairie. Of minor importance are the groups Southern Coastal Plains, Arkansas Valleys and Ridges, and Boston Mountains.

Soils in the Ouachita Highlands are shallow, steep, rocky, and of low fertility. Their principal economic usage is for forest and pasture production. Pine and hardwood forests cover much of the 14-county region; if cleared, these areas are suitable for tame pastures.

Ozark Highlands soils are similar to the Ouachita group, but are more rocky and contain little pine. Timber

*Gerald Bryan, Kerr Foundation agronomist, assisted in the description of the soils in Southeast Oklahoma.
production is of little economic value. Pastures and specialty crops cover most of the area suitable for clearing.

The soils of the Eastern Cherokee Prairie are basically grassland soils, primarily supporting native pasture with some scattered timber areas. The areas are intermingled with cross-timber soils. Eastern Cherokee Prairie soils are more fertile, deeper, less rocky, and more naturally productive than Highlands soils. They do not occupy a large proportion of the area.

Bottomland soils interlace the entire eastern part of Oklahoma along creeks and rivers. These deep alluvial soils are fertile and highly productive, but they do not represent a large proportion of the area.

Most soils in southeastern Oklahoma must be limed with 2 to 4 tons of agricultural limestone per acre to correct soil acidity and then fertilized with 400 pounds of 0-20-20 or a similar grade to correct for low phosphorus and potassium levels before production begins. Such preparation and a continuing soil fertility program are necessary for optimal economic production of most crops.

For most traditional programs, an initial investment in soil fertility has not been profitable because of the low returns inherent in such enterprises and the general managerial ability of the farm operator.
Profitable farm management requires that increases in production be coupled with efficient utilization of the production. For example, forage production can be greatly increased through the addition of soil nutrients. However, that production is wasted unless utilized by the correct class of livestock and then marketed efficiently.

While it has been said that poor soil results in poor income, this is not a necessary relationship. Although physical productivity may be less on poor soils, the marginal value of the product and/or the farmer's labor could be higher, thus offsetting any negative effect of lower physical product. Income variations between areas of differing soils are often due primarily to differences in the quantity of resources applied to the average farm and to differences in the concentration of labor and capital (7).

Although the soils in southeastern Oklahoma are low in physical productivity, they are not the exclusive cause of low farm incomes. Soils can be made more productive with the addition of capital expenditures for soil nutrients, selection of higher-return enterprises, and increased labor productivity through training and/or education.

**Plant Varieties.** Many small farmers face problems in establishing or improving plant varieties. If animal agriculture is the farmer's main source of income, he may not have adequate space to defer land until new plants can become established. The farmer may not be able to forego the
Table 1
Size Distribution of Farms,
East Central and Southeast Oklahoma
Crop Reporting Districts, 1974

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of Farms</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Sales:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$1,000 to $2,499</td>
<td>6,037</td>
<td>48</td>
</tr>
<tr>
<td>$2,500 to $4,999</td>
<td>2,603</td>
<td>21</td>
</tr>
<tr>
<td>$5,000 to $9,999</td>
<td>1,726</td>
<td>14</td>
</tr>
<tr>
<td>$10,000 to $19,999</td>
<td>934</td>
<td>7</td>
</tr>
<tr>
<td>$20,000 to $39,999</td>
<td>588</td>
<td>5</td>
</tr>
<tr>
<td>$40,000 to $99,999</td>
<td>460</td>
<td>4</td>
</tr>
<tr>
<td>$100,000 and over</td>
<td>247</td>
<td>1</td>
</tr>
<tr>
<td>Size of Farms in Acres:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 179</td>
<td>7,062</td>
<td>56</td>
</tr>
<tr>
<td>180 to 499</td>
<td>3,778</td>
<td>30</td>
</tr>
<tr>
<td>500 and over</td>
<td>1,755</td>
<td>14</td>
</tr>
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Table 2
Age of Operators and Off-Farm Work, East Central and Southeast Oklahoma Crop Reporting Districts, 1974

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of Farms</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of Operators:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25</td>
<td>139</td>
<td>1</td>
</tr>
<tr>
<td>25 to 44</td>
<td>3,438</td>
<td>28</td>
</tr>
<tr>
<td>45 to 64</td>
<td>6,543</td>
<td>52</td>
</tr>
<tr>
<td>65 and over</td>
<td>2,403</td>
<td>19</td>
</tr>
<tr>
<td><strong>Off-Farm Employment:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting Days of Off-Farm Work</td>
<td>7,211</td>
<td>50</td>
</tr>
<tr>
<td>Under 100 Days</td>
<td>903</td>
<td>6</td>
</tr>
<tr>
<td>100 to 199 Days</td>
<td>1,225</td>
<td>9</td>
</tr>
<tr>
<td>200 Days and over</td>
<td>5,083</td>
<td>35</td>
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Source: U.S. Dept. of Commerce, Bureau of the Census, 1974 Census of Agriculture, Vol. 1, Part 36. See Table 1 for list of counties included in this study.
<table>
<thead>
<tr>
<th>Variable Studied</th>
<th>All Farms</th>
<th>Farms with sales of $2,500 and over</th>
<th>Farms with sales less than $2,500</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Percent</td>
<td>No.</td>
</tr>
<tr>
<td>General Characteristics:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Farm Operators</td>
<td>12,595</td>
<td>6,558</td>
<td>6,037</td>
</tr>
<tr>
<td>Full Owners</td>
<td>8,929</td>
<td>4,133</td>
<td>4,796</td>
</tr>
<tr>
<td>Part Owners</td>
<td>2,877</td>
<td>2,012</td>
<td>865</td>
</tr>
<tr>
<td>Tenants</td>
<td>789</td>
<td>413</td>
<td>376</td>
</tr>
<tr>
<td>Land in Farms (Acres)</td>
<td>4,121,882</td>
<td>3,326,274</td>
<td>795,608</td>
</tr>
<tr>
<td>Average Size of Farm (Acres)</td>
<td>327</td>
<td>507</td>
<td>132</td>
</tr>
<tr>
<td>Farm Investment Data:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value of Land and Buildings ($1,000)</td>
<td>1,087,108</td>
<td>837,617</td>
<td>249,491</td>
</tr>
<tr>
<td>Value of Machinery and Equipment ($1,000)</td>
<td>121,274</td>
<td>86,202</td>
<td>35,072</td>
</tr>
<tr>
<td>Value of Land and Buildings (Per Acre)</td>
<td>264</td>
<td>252</td>
<td>314</td>
</tr>
<tr>
<td>Value of Machinery and Equipment (Per Acre)</td>
<td>29</td>
<td>26</td>
<td>44</td>
</tr>
<tr>
<td>Farm Production:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value of Agricultural Products ($1,000)</td>
<td>145,702</td>
<td>137,631</td>
<td>8,071</td>
</tr>
<tr>
<td>Value of Agricultural Production Per Acre</td>
<td>35</td>
<td>41</td>
<td>10</td>
</tr>
<tr>
<td>Value of Livestock and Livestock Production ($1,000)</td>
<td>67,600</td>
<td>60,404</td>
<td>7,196</td>
</tr>
<tr>
<td>Farm Production Expenses ($1,000)</td>
<td>140,959</td>
<td>128,508</td>
<td>12,451</td>
</tr>
<tr>
<td>Inventory of Cattle and Calves (Number of Head)</td>
<td>813,122</td>
<td>663,084</td>
<td>150,038</td>
</tr>
</tbody>
</table>

Source: U.S. Dept. of Commerce, Bureau of the Census, 1974 Census of Agriculture, Vol. 1, Part 36. See Table 1 for list of counties included in this study.
income from that land in the short run, even in the expectation of greater profits in years to come.

In many instances, repopulation of land with new plants requires the expensive procedure of chemical killing of existing vegetation. Such is the case when common bermuda grass is to be replaced with superior varieties.

Agricultural consultants and researchers sometimes recommend improved varieties to farmers, only to find little or no improvement in yields and stand survival. This happens when the management level does not increase to match the genetic potential and cultural requirements of the plants. New varieties will not produce increased yields if management is below par. As a result, the farmer may be disappointed and in worse financial shape than before.

It is difficult for the small farmer to secure better seed, sprigs, or other plant stock, because supplies are limited and he is often located far from the supply source. Small farmers need better communication about the supply, location, price, and management requirements for improved plant stock.

**Brood Stock.** In southeastern Oklahoma, most small operators rely on animal agriculture for a sizable portion of their operation. Many of the herds are so small that the owners cannot perceive the potential returns from utilizing performance-tested sires. Small farmers typically attempt to increase the quality of their herds by saving the better replacement females. While this method is acceptable,
results are slow, and usually the genetic base of the herd is so small that any improvement will be slight. The easiest and quickest route to increased weaning weight is through quality herd sires.

For those small producers who do decide to purchase better sires, information is often limited. Their knowledge about sources, availability, and prices may prohibit them from implementing that decision. A small farmer will likely be reluctant to travel more than a couple of hours to obtain a superior bull or boar.

**Technological Constraints**

Large commercial farmers have rapidly adopted new technology to reduce per unit costs of production. For the most part modern agricultural technology has focused on reducing labor requirements—the one factor that is adequate on many small family farms.

**Lack of Suitable Technology.** Large commercial farmers have benefited greatly from agricultural research and development of better techniques. Unfortunately, many small farmers are unable to adapt this technology for their uses. This problem is well-stated in a quote from a letter written by a disgruntled small farmer to a leading farm magazine: "Do you think everyone owns 2,000 acres and 500 cows? What about something for us little guys with only 50 or 60 acres?"

At least one lawsuit has been filed against a major
university for its expenditure of tax monies on technology that allegedly forces small farmers off the land (6). There is no doubt that the current selection of machinery leads some small producers to overinvest in equipment and thus to increase their fixed costs of production. Smaller farms in southeastern Oklahoma have an investment of about $44 per acre in machinery and equipment while larger farms have an investment of about $29 per acre (Table 1). Buying used equipment is an alternative for small farmers, but that means higher repair and maintenance costs as well as more down time.

Appropriate technology for small farms should stress production of machinery which is easy to maintain and free of unnecessary luxury gadgets. Equipment should be sized according to small farm labor situations. For example, a two-cylinder John Deere tractor that is fired with a magneto, uses no batteries, and is cranked with a flywheel is the kind of equipment needed by many small farmers today. The technology is available; the equipment simply needs to be put back on the market at a reasonable price.

**Rate of Adoption.** Small farms have adopted new technology more slowly than larger commercial farms. Several factors, both economic and attitudinal, have contributed to this condition.

Although the adoption of new technology has proven profitable to farmers, the rate at which they begin to try
changes is varied. While an innovation might well be profitable for farmers who have the necessary financial capital, not all farmers are so fortunate. Those who do not have the capital tend to discount potential returns at a higher rate than those with adequate capital.

Unfortunately, once the slower adopters accept an innovation they often find that output among all farmers has increased. Without an accompanying increase in aggregate demand, prices decline. Thus, it is to the benefit of the individual farmer to adopt new technologies as quickly as possible, thereby capturing returns before others follow.

Rate of adoption is also influenced by labor availability, education, and risk-bearing ability. Small farmers with adequate available labor and with skills not readily marketed in off-farm employment are usually slower to adopt new labor-saving technology, they may or may not be improving their economic well-being.

The adoption of new technology introduces a new level of risk to the farm. This exposure to additional risk as a result of capital expenditures prohibits many small farmers from making the transition. Much of the high-technology capital equipment requires substantial production volume to keep per unit costs low.

Most technological innovations produce a new pattern of production opportunities for the farmer. The change may require a new set of resources, another level of management,
and a new cash flow pattern. The transition may require a movement that is not incremental. The investment might thus result in a "sink or swim" situation. Most farm people are unaccustomed to this type of change. The closer the farmer is to poverty, the less likely he is to accept a change.

While new technology at first represents an unknown to be mastered by the manager, it may ultimately result in a reduction of risk for the good manager. For the poor or average manager, new technology, because of the added capital investment and increased farm size, may tend to force the manager past his natural management abilities and thereby increase his risk (5).

Financial and Economic Constraints

Under conditions of low income and low farm productivity, the pressure to maintain a basic subsistence living deters many small farmers from making substantial long-term investments. They do not adopt capital intensive production practices, and thus they avoid increasing their level of risk. Financial and economic constraints have to be examined in light of their impact on the household, as well as on the production aspects of the farm.

Farm Credit. The small farmer is often constrained by his ability to secure, profitably utilize, and repay borrowed money.

Most small farmers--and even many larger operators--
attempt to borrow money with only faint estimates of how much is needed as an initial investment, of how much operating expense will be involved until returns begin, and of their capacity to repay.

Many lending institutions seek only larger borrowers, in order to minimize their service costs per dollar loaned. To obtain a loan, the small producer may have to pay a higher rate of interest. Since most small farmers possess limited information about available sources of credit, they usually do not compare interest charges or other measures of credit's true cost. The terms of loans to small farmers are likely to be tailored to the lender's convenience and profitability instead of being mutually beneficial.

Lenders may help the large operator prepare a cash flow and a projected profit and loss statement. Since the small farmer is not a preferred customer, he probably will not receive that service. Consequently, small farmers often face the disappointment of being rejected for a major loan because of insufficient attention to planning. A small farmer whose knowledge of sources of credit is limited may become so frustrated he will never try to borrow again, thereby cutting himself off from the potential of higher income based on wise borrowing.

Farm credit programs must be designed to help limited-resource farmers finance needed changes in their resources mix. Small farmers need to reorient their thinking about
credit in order to facilitate these changes. Farm credit institutions should reorient their capital resources to include low-income farmers, especially where production possibilities are good (9). Small farmers need to know more about repayment options, various sources of credit, and correct structuring of farm debt.

Marketing. Marketing agricultural products represents a challenge to both large and small producers. For small producers, the problems are both perceptual and real.

Small farmers, due to their relatively low volume of sales, are severely restricted as to marketing alternatives. If they produce traditional products within the local area, they are limited in alternatives and bargaining strength due to low volume. They operate as "price takers."

Production of non-traditional products poses similar problems. The small producer alone cannot attract a market because of low volume. Therefore, he must develop his own market. Direct marketing takes time and effort to develop, but has proven profitable for some small farmers.

Transportation from farm to market can limit opportunities. In the study area, long distances and mountain ranges are barriers to producers with older model trucks and trailers. Except in the outer areas of southeastern Oklahoma, there are no established grain and oil crop markets. In fact, in certain parts of southeastern Oklahoma, few organized markets are available for any kind of product.
Marketing information is vital to sound farm management. The extent to which small farmers receive and utilize marketing information is not known. Nor is it clear whether available information is well suited to the needs of small farmers.

Sociological Constraints

Economic growth is enhanced under conditions of (1) abundant natural resources, (2) a well-trained work force, (3) an educated populace, (4) stable government, (5) adequate transportation facilities, and (6) favorable and progressive attitudes. This does not necessarily mean that all of the above must be present to have growth. For example, Israel, with a "sandpile," and Japan, with a "rockpile," have demonstrated that a high standard of living is possible without a rich endowment of natural resources (13).

Improvements in delivery system services and other agricultural programs will depend upon policy makers gaining deeper insights into the attitudes, aspirations, and other sociological and psychological characteristics of farm people. These features represent a challenge even when dealing with large-scale commercial operations; they become increasingly diverse and complex in the case of small agricultural units. The entire 1978 edition of the U.S. Department of Agriculture's Yearbook of Agriculture, entitled Living on a few Acres, is devoted to very small-scale agricultural
operations. That publication merely scratches the surface when it presents a classification of people living on a few acres, whose objectives may be to:

- Use the acreage solely as a residence;
- Pursue hobbies or recreational activities;
- Reduce the family's food costs by gardening;
- Provide an "alternative" lifestyle for meeting food and energy needs;
- Provide an extra (part-time source of income by selling produce from the acreage, or engaging in some other sideline (18).

There are, of course, small operators in southeastern Oklahoma who fit into each of these classifications—particularly those who are part-time farmers. Yet the region has a long history of persistent rural poverty, and the attributes of its traditional small operator are of special interest. For these farmers, conservative views and resistance to change, even change which has proven workable in the past, represent behavioral problems which are a partial explanation for low income levels.

**Attitudes of the Traditional Small Farmer.** Small farmers are often alienated from the mainstream of agricultural activities. New technology, extension programs, and government assistance are usually geared to the needs of the larger commercial farmer. Since few of the small farmer's real needs have been given attention, his feelings of alienation are reinforced. Even when genuine assistance is offered, the small farmer may be skeptical.

The small farmer seldom actively seeks assistance.
When he does, he will rely mostly on friends, family, and neighbors.

The small farmer is generally suspicious of research results and must see many field trials on neighbors' farms before accepting the practice on his own farm. Even then, he probably will not borrow money to adopt the practice.

Tradition plays a larger role than one might expect in day-to-day management of the small farm. New technology is very slow in replacing old techniques that have been handed down for generations.

Unfortunately, many low-income farmers have never traveled out of their own area enough to see other ways of doing things. In talking with them, one often discovers that they are very interested in seeing new methods, but do not believe the methods would work on their own farms.

If given the opportunity to leave the farm, few small farmers would go, even though their income from farming is perpetually low. One study in North Carolina indicated that those individuals lowest on the economic ladder resisted the idea most strongly (4). Most viewed their farms as the only node available to increase incomes. Relatively advanced age is also an important factor for many small farm operators' feelings about relocation.

Another study indicated that farmers who are educationally disadvantaged find it especially difficult to acquire supplemental jobs (8). In this study, more than half the
farmers were found to be disadvantaged, and 37.5 percent had completed only 5 to 8 years of schooling. Health and age also were cited as important barriers to gaining off-farm employment in Crittenden County, Arkansas.

The Case of Subsistence Farming. Subsistence farming in its purest sense is probably not found anywhere in southeastern Oklahoma. However, there are a substantial number of operators that have lifestyles and characteristics similar to the subsistence farmer. In the 14-county study area, 47 percent of all farmers had annual sales of less than $2,500. Admittedly, many of them have other income, but there remains a good number who are subsisting on very low incomes.

Many small farmers have chosen farming as an occupation because of the values they attach to farm work—including the opportunity to be one's own boss. The leisure and simplicity which characterize subsistence farming have been so ingrained into the value system of some farm couples that a non-farm alternative—even with higher income—is not sufficient to uproot them. It is unwise to assume that it is irrational for a farmer not to maximize profits. For many, the farm producing unit is not profit-inspired, but satisfaction-inspired.

Increasing Income on Small Farms

Assuming that an increase in agricultural income is both a reasonable and a worthwhile goal on many small farms,
there are several interrelated approaches which can be used. Direct emphasis can be placed on changing production practices. A more indirect approach focuses upon education and posits that a principal problem of the small farm sector is underinvestment in human capital. An institutional approach points to the need for reorientation of existing agricultural service organizations and the probable need for innovative institutional arrangements. Finally, there are broad features of general public policy which could be shifted to assist small farmers in increasing their agricultural income.

The Production Approach

Net income can be increased by manipulating the farm's resource mix. The optimal combination of land, labor, capital, and management is necessary to achieve maximum economic returns. For most small farmers, the supply of land is relatively fixed. Therefore, in most cases, increased net income will occur only if labor, capital, and management are adjusted to this limitation. A Missouri study indicated that operating capital is the most severe constraint on productivity, with land second in importance (11). When nearly all income is spent for production costs and family living expenses, little is left for capital investments. Low-income farmers thus tend to remain low-income farmers.

For those farmers unwilling to seek credit, solutions will depend upon finding ways to market their surplus labor. Any change in production methods or enterprises should
include immediate cash returns. For farmers who internally ration their credit, adoption of innovations will be slow if short-term losses must occur before long-term profits can be obtained.

Labor and management ability on small farms is limited in many cases. Part-time farmers may have the management ability to increase net farm income, but not have the labor available in the necessary quantity and at the right time to carry out management practices. On some small farms, operators may not have the training to utilize available technology or management practices. Training for some small farmers should be characterized by a "how to" approach, rather than a "theory" approach.

Since management ability is of overriding importance, production people should orient programs toward those management techniques that involve only small cash outlays initially. This is especially true for farmers at the lower end of the management ability ladder.

The Educational Approach

There is little doubt that education is a profitable investment for society. Under the right circumstances, it can also be profitable for the individual.

The role of education in alleviating problems of small farm poverty is best viewed in a long-run frame of reference; education is more likely to help the children of the small farmer than the farmer himself.
A study by Tweeten states:

Education has a high economic payoff to individuals in most areas and occupations. It is highly profitable to individuals in rural poverty areas who have geographic and occupational mobility, but it is likely to be only marginally profitable to those lacking mobility...Individuals who profit most from education are those who leave the local community (14).

Other reports have suggested that education may not be a productive investment for persons who remain on farms in the low-income areas of Kentucky and Oklahoma (1,2). Tweeten further indicated that although limited capital and lack of economic opportunities in low-income rural areas limit the productivity of education for persons who remain in the area, it still offers the only real hope for increasing income (14).

Without the opportunity to acquire skills, persons with low incomes must surely remain in fields where the labor supply is great and the supply price is low. Policies which increase the opportunity for low-income persons to acquire education can, in the long run, bring about greater equality in economic opportunities and income.

An Institutional Approach

Institutions that service the needs of farmers should be encouraged to devote a portion of their time and resources to the requirements of the small farmer. The goal of most institutional programs should be to acquaint small farmers
with available services and to support such services with a more personalized approach to individual problems.

Some agencies could help in forming cooperatives, undertaking market and enterprise feasibility studies, establishing specialized training programs, and implementing agricultural lease programs for equipment and livestock. Institutions and organizations should be alert for the opportunity to implement programs that the individual farmer could not do alone. Agencies could provide meeting space and serve as intermediaries promoting cooperation within local power structures. Some institutions should be active in "on-the-farm" demonstrations to exhibit the economic value of various management practices.

The Policy Approach

The wisdom of a system in which agricultural production is dispersed among many small farms has often been debated. In light of the average age of farm operators and their level of marketable skills, it seems reasonable to expect many small farmers to remain on their farms even if their relative income stays at present levels. Part-time and retirement farmers will also likely persist for many years to come. In low-income years, part-time and retirement farmers will probably subsidize their agricultural operations or accept a lower rate of return for their labor and management in order to stay in business.
While the number of policy implications is virtually unlimited, let us reexamine briefly the major constraints small farmers face and suggest broad policies that could help reduce the harshness of these constraints.

Environmental constraints were defined as those caused by the interaction of man, animals, and plants with the environment and natural resources. Tax incentives similar to the current investment credit might be appropriate to stimulate small farmers to invest in better brood stock, plant varieties, and soil nutrients. Since many small farmers pay little or no income tax, the credit might be rebated, regardless of tax liability.

Technological constraints could be resolved in a similar manner. Manufacturers of agricultural equipment might receive investment credits of higher amounts than present levels to develop technology suitable for small farm use. At the same time, investment credits would encourage small farmers to acquire such capital equipment. In view of the current energy situation, energy-saving technology for small farms might even be rewarded with a greater credit.

Financial and economic constraints might be handled by credits to institutions or private individuals that developed machinery and equipment lease arrangements for small farms. Credit institutions might receive tax relief by increasing their loan activity to farmers with gross sales below a specified limit. Current programs that make special credit
provisions for small farmers (such as the Agricultural Credit Act of 1978) should be encouraged and should be staffed to accommodate the needs of small farmers. Marketing agencies and cooperatives should be encouraged to make special efforts to handle the products of small farms.

Sociological constraints will be removed only by time, plus continuing and dedicated effort by policy makers. All programs, policies, and efforts should be people-oriented. Attitudes toward change cannot be legislated. Agencies which accept this view would want to employ people who are not only technically capable, but compassionate and willing to understand the problems of small farmers from a humanistic viewpoint as well as an economic one.

**Conclusion**

This report has used the small farms of southeastern Oklahoma to illustrate the need, constraints, and feasibility of increasing agricultural income of small operators. The message of this report is that various agricultural service delivery organizations need to be much more sensitive to this dimension of American agriculture than they have been in the past. This does not mean emphasis on small farms to the exclusion of the needs of large-scale operations. Obviously, the greatest concerns for maintaining and improving agricultural productivity remain with those sectors already accounting for the bulk of American farm output. At the margin, however,
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SRDC Series Publication No. 33

November 1979