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The number of farms in the United States dropped from a high of 6.8 million in 1935 to 2.34 million reported in 1974. Only 1.7 million farms are considered to be commercial, selling more than $2,500 of goods per year. Average farm size jumped from 197 acres in 1940 to 440 in 1974, and the average size of commercial farms is 534 acres. It is estimated that today less than one-half of all farmland is owned by the operator. Findings/conclusions: Three basic pressures have contributed to the concentration and specialization in the farm sector: rising farm costs, the availability of highly productive crop-specific farm technology, and Government policies and programs. Since World War II, general inflation and rising costs have continually narrowed profit margins. To maintain income, the surviving farmer increased his farm size, expanded production, and sought off-farm income. Although farmers made use of technological breakthroughs, they found themselves requiring more equipment, more land, and more capital. Federal programs designed to buffer fluctuations in supply and demand of foodstuffs and fibers have provided farmers with direct subsidies since the 1930s; however, only 10% of all farmers receive direct Government subsidies, and 1% receive almost 29% of all Government program payments. The corporate form of ownership makes up a substantial portion of larger farm classes, and changes in farm structure have had a substantial impact on rural surroundings. Much of the current Government policy is based on aggregate statistics, and much more could be learned

from simply analyzing the available data more thcroughly. (RRS)

STUDY BY THE STAFF OF THE U.S. 7877

# General Accounting Office

# Changing Character And Structure Of American Agriculture: An Overview

Farms in the United States are getting fewer but larger, more specialized, and more dependent on purchases of Supplies, Equipment and Technologies, and foreign markets.

Reduction in the number of farms and concentration of sales in the largest farms may reduce the resiliency of the farm structure to be able to deal with variations in commodity prices caused by unpredictable changes in the world economy.

This study discusses the importance of agriculture and its changing character and structure and presents a series of issues which warrant attention by the Congress and others responsible for the viability of the American farm sector.


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# FOREWORD

The United States is fortunate in having the world's most productive agricultural system, capable of supplying not only the Nation's needs but exporting nearly one out of every three harvested acres. The significance of America's agricultural sector reaches far beyond the Nation's dwindling two million farmers. Domestically, the food and agricultural sector is the largest employer in the United States. Internationally it functions as the major contributor to balancing growing trade deficits.

The basic trend in the farm structure since World War II has been one of increasing concentration, both of agricultural industries providing inputs as well as concentration of the actual farms themselves.

Many questions remain unanswered as to whether continuation of the current trend towards fewer and fewer farms is in the best interest of the American public. Questions have been raised as to whether the continued demise of the family farmer will reduce the resiliency of our agricultural system to produce during adverse times.

The purpose of our staff study was to document past and present structural changes in the U.S. farm sector, to discuss future issues and provide questions for further consideration so that policy guidance and evaluation can be more effective.

This study was prepared and directed by Ed Schaefer of our Food Coordination and Analysis Staff. Field interviews were carried out by the Food Staff and the following GAO regional offices: Atlanta, Chicago (Twin Cities sub-office), Philadelphia, and San Francisco. The study also involved the efforts of GAO's Technical Assistance Group as well as two private consultants.

Questions regarding the content of this study should be addressed to William E. Gahr, Assistant Director, Food Coordination and Analysis Staff, on (202) 275-5525.

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STUDY BY THE STAFF OF THE UNITED STATES GENERAL ACCOUNTING OFFICE

# CHANGING CHARACTER AND STRUCTURE OF AMERICAN AGRICULTURE: AN OVERVIEW

## D I G E S T


The United States food system dependence on increasingly fewer farmers, who in turn are dependent on a series of factors beyond their control, raises a basic question of farm sector resiliency to withstand supply-demand fluctuations without increasing Government assistance.

A series of cost-price squeezes, specialized technology, and the targeting of Government farm programs has created a farm sector that has fewer larger and more powerful farms; less family labor; less diverse production patterns; and increasing dependence on purchased inputs, foreign oil, and markets outside the United States.

Farm numbers have dropped from a high of 6.8 million in 1935 to 2.34 million reported in the 1974 Census of Agriculture. Only 1.7 million farms are considered to be commercial, selling more than $2,500 of goods per year. Average farm size, meanwhile, jumped from 197 acres in 1940 to 440 in 1974. When only commercial farms are considered (those selling $2,500 or over) the average size is even larger--534 acres.

Even though the average farm has grown in size, over half of all farmers receive income from off-farm sources. The average farm family took in nearly 60 percent of its total income from other sources.

In the past, most farms were owned by the families who operated them. Today, it is estimated that less than one-half of all farmland is owned by the operator, primarily because the farmer's annual net income flow is greater for the land renter than the land owner. Also, as capital and tax demands have increased, the corporate form of ownership has become more significant. This is primarily evident in America's largest farms (2 percent of all farms which

capture 37 percent of agriculture sales) where 20 percent are corporations.

Generally, three basic pressures have contributed to the concentration and specialization in the farm sector and the growth of new farm characteristics. These are:

1. Rising farm costs.

2. The availability of highly productive crop-specific farm technology.

3. Government policies and programs.

## OVERVIEW

The agriculture sector is heading toward fewer but larger farms which are capturing a larger portion of total farm sales. Today's farmer is moving away from the self-sufficient, independent, land-owning model of yesteryear into a commercial entrepreneur, specializing in single crops. He is enmeshed in the trends of national and international economics, relying increasingly upon a variety of other specialists to provide capital, new technology, supplies, land, petroleum products, and marketing assistance. Land no longer is the farmer's primary production input as productivity of the land now depends upon the skill and knowledge with which capital is applied.

## COST-PRICE SQUEEZE

Since World War II, general inflation and rising costs of farm inputs have continually narrowed profit margins. To maintain income, the surviving farmer increased his farm size, expanded production, and sought off-farm income. While the cost-price squeeze during the 1950s and 1960s removed many of those smaller volume farmers who did not expand or improve production, even the most aggressive farmers of the 1970s are feeling economic pressures. This is because biological productivity per acre has leveled and thereby has limited, at least temporarily, future production increases to farm expansion. This cost-price squeeze particularly inhibits the entering farmer whose land amortization costs alone can exceed

over 40 percent of his gross income in an average production year. Slight variation in yield and prices can cause extreme financial difficulties.

## TECHNOLOGY TREADMILL

In an attempt to maintain income through increased production, farmers made use of technological breakthroughs. However, they found themselves requiring more equipment and then more land, and still more powerful and faster equipment to stay ahead of narrowing profit margins, inflation, and competitive pressures. The result of farm product specialization over the last 2 decades was that farm worker productivity increased nearly twice as fast as that of the industrial worker. However, to maintain this productivity, the farmer became dependent upon petroleum-based inputs of fuel, fertilizer, and pesticides as well as other agro-industrial services to operate his increasingly specialized farm. As these specialized and nonrenewable inputs become more valuable, cost/price inflationary pressures on the farmer will increase.

## GOVERNMENT PROGRAMS

Federal programs designed to buffer fluctuations in demand and supply of foodstuffs and fibers have provided farmers with direct subsidies since the 1930s. These programs were directed at specific farm commodities, thereby benefiting crop-specific farms in certain regions, such as the corn and wheat belts, more than others.

Those subsidies, coupled with changes in technology and economic conditions, encouraged farmers to increase their farms in size and specialization. This resulted in an overall reduction in the number of farms but an increase in total production. However, only 10 percent of all farmers receive direct Government program payments, and 1 percent receive close to 29 percent of all the Government program payments.

In the early 1970s the American agricultural sector got a boost, primarily because of Government fiscal policies which led to a devaluation of the U.S. dollar and a shift to a

floating exchange rate. This move made U.S. agricultural commodities competitive abroad.

With several crop failures around the world, U.S. farm commodities were in great demand. American agriculture and the entire U.S. economy became more dependent upon the power of U.S. agriculture to help balance off a growing deficit in our Nation's balance of payments. However, the high farm income of the early 1970s was short-lived, as foreign crops succeeded and worldwide effective demand for U.S. products slackened.

Policies to foster foreign sales have put agriculture in a precarious position. Agriculture's new role in the economy has made U.S. farmers vulnerable to the uncertainties of world market conditions and as a result has placed the United States in a position which may demand increased governmental activity to help buffer fluctuations in supply and demand.

## LARGE FARMS vs. SMALL FARMS

The strength of today's largest farms is evidenced by the fact that only farms over 1,000 acres experienced a real rise in farm numbers, according to the 1974 Census. However, certain small acreage farms may also have considerable staying power.

Even though some smaller farms have considerable staying power, the farms at the top of the size scale dominate agricultural sales. The largest 20 percent of all farms (in terms of farm sales) make 80 percent of all gross agricultural sales. This leaves only 20 percent of total sales to be split among the vast majority of farmers.

The top 2 percent of the farms now account for approximately 30 percent of sales. In addition, what has changed significantly is the value of farm products sold. The value of products sold annually by our Nation's largest farms has climbed to $200,000 and more.

## FARM OWNERSHIP

Increased financial pressures on farms have resulted in changes in ownership patterns also. The corporate form of ownership makes up a substantial portion of the larger farm classes. However, the extent to which these larger corporate farms are farm family owned and operated, agribusiness conglomerates, or privately owned by nonfarm families remains unknown.

Although corporations are clearly not "taking over" agriculture on a national scale, corporate influence is very significant in certain geographic regions, localities, and commodities. A problem in determining corporate influence is the lack of hard knowledge about ownership and control of farmland.

The changes in farm structure have had a substantial impact on its rural surroundings. Farm population has dropped from over 15.6 million in 1960 to just under 8.3 million in 1976, with a disproportionate number of those leaving being young high school graduates.

In addition, areas dominated by larger farms have been shown to provide fewer social amenities to their residents. Rural businesses have also declined since the more sophisticated needs of larger farmers, coupled with improved transportation, have carried much of farm business outside of rural business centers.

## FARM STATISTICAL DATA

Much of current Government policy is based on aggregate statistics, although there is a wide diversity among farmers. Even though there are gaps in knowledge, much could be gained from simply analyzing the available data more thoroughly.

GAO attempted to construct comprehensive farm size profiles from 1974 Census data and field interviews. Farm income levels were used as a primary point in determining the relative well-being of the farmer. Farmer profiles could also be based partially upon other variables, such as capital invested, land size and quality, organizational structure, commodity and use of hired labor.

## GOVERNMENT ASSISTANCE

While vaguely aimed at helping the "family farmer," Government assistance programs have definitely benefited the largest farms to a proportionately greater extent. Because they are geared to production, the percentage of farmers receiving Government payments rises with farm size, as does the size of the payment. Government assistance programs have also become capitalized into land values, thereby benefiting larger landholders to the greatest extent.

Similarly, Government tax policies have promoted the trend away from smaller, family-owned and-operated farms, while attempting to do the opposite. Federal income tax laws provide an excellent tax shelter for outside investors. Recent estate tax laws may inhibit sale of farmland outside the owning family, thus creating a "landed aristocracy," with fewer avenues for new farmers to enter.

## MAJOR ISSUES

This study has 12 chapters. Each chapter discusses a particular trend that our research indicated was important in evaluating the farm structure. At the conclusion of each chapter is an "implications" and "issues for further consideration" section.

Presented below is a summarized version of the more detailed issues at the end of each chapter:

--Because agriculture is viewed as an important export earner, should the Federal Government play a more active role in providing world market intelligence, market stabilization, and sales promotion?

--Is the United States losing the family farm resiliency to produce during adverse economic conditions?

--With the continued demise of the family farm, will the rural socio-economic infrastructure decline even further?

--For socio-economic as well as national economic security reasons, should the United States take a more active role in helping to preserve the smaller, lower volume producers who have proven to be efficient producers?

--Does the U.S. Government know enough about who owns, controls, and operates America's farmland and who has benefited from past governmental programs and policies to make new efforts more specifically targeted so that the benefits can be made more effective and equitable? Would more information on all farm types permit a broader based distribution and improved targeting of Federal farm programs?

--Has the U.S. farm sector and the food system become too dependent upon nonrenewable petroleum resources?

# Contents

## CHARTS AND TABLES

## ABBREVIATIONS

| | |
|---|---|
| ASCS | Agricultural Stabilization and Conservation Service |
| ERS | Economic Research Service |
| ESCS | Economics, Statistics, and Cooperative Service |
| FEDS | Firm Enterprise Data System |
| FLB | Federal Land Bank |
| FmHA | Farmers Home Administration |
| SCS | Soil Conservation Service |
| SRS | Statistical Reporting Service |
| USDA | United States Department of Agriculture |
| SIC | Standard Industrial Classification |

## GLOSSARY

Commercial farm--having annual sales of at least $2,500.

Debt-to-asset ratio--(debts-to-net worth) ratio of total financial liabilities to its net worth. A farm with a total liability of $300,000 and a net worth of $600,000 has a debt-to-net worth of .50 meaning the creditors have 50% of the money in the farm and the owner the other 50% (300,000 ÷ 600,000 = 1:2 or .50)

Debt-to-equity ratio--Ratio of total financial liabilities to farms resources less the financial liability. A farm with a total liability of $300,000 and a net worth of $600,000 would have a debt-to-equity ratio of 1:1

(300,000 ÷ (600,000 - 300,000) 1:1 or 1)

Debt-to-purchase ratio--amount of debt undertaken for a particular purchase.

Disposal income--income remaining after deducting personal taxes and all other Government payments.

Gross farm income--total receipts of a farm, earnings, and profits.

Gross national product--total value at current market prices of all final goods and services produced by a Nation's economy before deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods.

Net farm income--income remaining from earnings and profits after all costs, expenses, and allowances for depreciation and probable losses have been deducted.

Net return--the amount received from an investment less depreciation allowance.

P&I--principal and interest.

Parity--relationship between prices farmers receive for their commodities and the prices they pay for production and living expenses.

Program allocation factor--divide the national program acreage for the crop by the number of estimated acres to be harvested for the crop.

Rate of return--ratio of net return to equity.

Real farm income--farm income that has been adjusted for the price level.

Regional analysis--the study of comparative growth and development in a geographic area, requiring data on the flow of regional products and stock of regional resources.

# CHAPTER I

## INTRODUCTION

As industrialized as this Nation has become, agriculture still functions as one of the critical cornerstones of our economy. Although many changes have occurred during the last 30 years, many of our farm policies and programs were initiated during or before this era and have changed little since that time.

The purpose of this study is to document past and present structural changes in the U.S. farm sector, assess future implications of the changes, and present issues so that socially sound farm policies can be developed and implemented. The ultimate goal of this effort is to provide an improved analytical framework for future policy guidance and analysis which will positively affect the U.S. farm structure.

The number of farms in 1978 may be below two million, with a projected drop by 1980 to under 1.5 million. As the number of farms are declining and agricultural production is rising, more sales concentration is evident. Other related trends can also be seen, such as substitution of capital for labor, decline in rural activity, difficulty for new farmers to begin, channeling of outside equity capital into agriculture and a corresponding bidding up of farmland values, as well as changes in farm ownership patterns with decreasing significance for the traditional family-owned and-operated sole proprietorship.

These trends raise a variety of issues which need consideration by policymakers in developing sound farm programs. The need for a comprehensive analysis of the trends in agriculture along with the implications of these changes led us to this review.

We believe it was particularly important to conduct a study at this time because of changes taking place in this decade in the economic environment within which the agricultural sector operates. Food has become a most important item in U.S. international trade, while world food reserves have fluctuated greatly. U.S. farmers also found fewer productivity increases and learned the problems with dependence on limited supplies of energy and other nonrenewable resources for increased products.

It is important for policymakers to know the impact of past policies and programs on the structure of agriculture

to formulate appropriate future actions. Because it is our function to evaluate the effectiveness of governmental programs and to provide the framework for improved policy formulation, this type of review not only falls within the scope of activities under which we operate, but will serve as the foundation on which to develop further efforts.

Scope of study

To reach our study objective we interviewed numerous farm families throughout the United States. We attempted to detemine what American farm families perceived as the causes of these trends, and to document their concerns regarding the future direction of American agriculture.

We based our analysis on four sources of information:

--An extensive review and analysis of most available secondary data from both public and private sources relating to farm structure.

--An analysis of the 1974 census data National Summary, published in December 1977, as well as the following State level summaries: California, Iowa, Minnesota, Montana, North Dakota, and Pennsylvania.

--Use of the United States Department of Agriculture (USDA) computer model Firm Enterprise Data System Model, located at Oklahoma State University, for a series of sensitivity runs on eight "typical" farm budgets.

--Farm level interviews (case studies) conducted in 19 counties in 16 different States. At least four farmers (part-time and small, medium, and large scale) from each county were interviewed in the Fall and Winter of 1977-78. Farm size category varied by the local Agricultural Stabilization and Conservation Service (ASCS) official and/or county extension agent perception of the above four categories, given each county's geographic and economic situation and the type of cropping system being used. Interviews were gathered in the following States, and were chosen to provide a sample of regions and cropping systems: California (3 counties), Delaware, Georgia, Iowa, Maryland, Minnesota, Montana, Nebraska, New Jersey, New York, North Dakota, Oregon, Pennsylvania (2 counties), Virginia, Washington, and Wisconsin. The purpose of the farm level interviews was to

(1) provide a brief profile of farmers by size classifications,

(2) assess the validity of current national agricultural trends as seen by farmers,

(3) determine what farmers felt were the causal forces and implications of these trends, and

(4) understand farm level concerns.

## CHAPTER II

## AGRICULTURE'S ROLE IN THE ECONOMY HAS GAINED SIGNIFICANCE

Agriculture is an important part of both U.S. foreign and domestic economic policies. It has become an important part of our foreign trade, helping to substantially balance off our trade deficits during the mid-1970s. Opening world markets to U.S. farm commodities, however, has made American farmers subject to uncertainties in world demand, leading to wide unpredictable swings in net farm income.

Factors affecting the economic well-being of the farming sector extend beyond the two-million-plus American farmers and far beyond the shores of the U.S. Agriculture is the largest industry in this country, employing some 17 to 20 million American workers directly and indirectly. Agricultural production and the direct agri-support industries accounted for one quarter of the country's gross national product in 1976.

### As U.S. agriculture became a dominant force in world trade, it made farmers vulnerable to fluctuations in world food supplies

Agriculture has become an important element in our international economic policy.

In the 1970s the United States became a great deal more dependent on other countries of the world, primarily because of its petroleum needs. With the spiraling costs of fuel, dollar volume of U.S. imports doubled in less than 8 years, but our exports grew at half that rate.

The major contributor to balancing our trade deficits was the increase in agricultural sales abroad. The devaluations of the U.S. dollar and a shift to a floating exchange rate in the early 1970s ended an era of long-term discrimination against the agricultural sector in world trade. Our agricultural commodities became competitive on the world market and their high sales abroad helped to take up the slack of our increasing trade imbalance. This change in the U.S. fiscal policy had the net effect of not only increasing demand for U.S. agricultural products but also stimulated supply as well.

--In 1973 the U.S. agricultural exports were sufficient to offset an $8 billion deficit in U.S. trade in nonagricultural products.

--In 1971 it was just $3 billion short of offsetting an almost $15 billion deficit in nonagricultural trade.

--In 1975 the $12.4 billion surplus in agricultural commodities was the only reason for a positive balance of payments of $11.1 billion.

Although agricultural exports dropped in absolute terms in 1974, the dollar value continued to rise and the proportion of exports represented by agriculture has remained relatively constant since then. But even this could not balance off the tremendous cost increases of our needed imports. Fuel imports rose 33 percent in 1976 and nonfuel imports were up 20 percent. In 1976 the United States had roughly an $8.7 billion trade deficit, rising to nearly $30.0 billion in 1977, a new record high. In the first quarter of 1978, however, the deficit jumped to $11.2 billion. Should this rate continue through 1978 the annual trade deficit could reach a staggering $47 billion. Part of the problem is the generally slow growth in all U.S. exports. New markets for agricultural products will have to be found if growth is to be spurred in that sector.

The increased role of agriculture in foreign trade adds to the uncertainties with which the farmer must contend. In addition to the uncontrollable factors which normally affect farming, the farmers now must deal with the unexpected, changing trends of other countries' agricultural sectors, due to natural causes as well as political manipulations.

From 1972 to 1973, therefore, farmers experienced record high income because crop failures in other parts of the world created a strong market for our agricultural commodities. Yet the effective demand soon slackened as mother nature took a turn for the better and other countries' agriculture prospered. At the same time, foreign governments have been able to utilize U.S. market information to their own advantage. Indications are some have used U.S. futures markets indirectly to hedge commodity purchases, yet have not always provided the United States with reliable information on their own markets.

This change in demand caught the U.S. farmers in an expansionary position causing prices to fall even lower as supply outpaced both domestic and foreign demand.

The swings in agricultural exports can be seen in Table 1, showing aggregate exports in million metric tons. In 1973 farmers benefited from record high exports, but in 1974 the

figure dropped by 16 million metric tons. The figure began to increase, but the 1977 preliminary figure still does not reach the 1973 exports.

Table 1

Aggregate Agricultural Exports

| Year | million metric tons |
|---|---|
| 1970 | 63.890 |
| 1971 | 59.314 |
| 1972 | 76.128 |
| 1973 | 108.408 |
| 1974 | 92.825 |
| 1975 | 98.740 |
| 1976 | 111.086 |
| 1977 (preliminary) | 107.193 |

Farmers now are faced with oversupply of farm commodities and therefore have had to cope with dropping income. While gross farm income continues to edge slightly higher, the trend in net income has been decidedly downward in recent years. Net income in 1976 was 40 percent below the 1973 record, making it the lowest in 9 years, and one of the lowest since the Depression, when the figures are adjusted for inflation. Net income has started to climb back up in recent months, but the farmer's purchasing power is still critically low. Improvements in 1978 will be mainly from higher livestock prices resulting from decreased supply caused by extremely low returns to that sector during the past 4 to 5 years and greater governmental intervention in the grain market to help support falling prices. Growth in farm sector exports will play an increasingly major role in the vitality and stability of the U.S. farm economy. A large potential share of our export market for U.S. grain (which the United States has a comparative advantage for producing as well as appropriate farm-related technologies) is with the worlds developing nations where food needs are presently beyond their effective demand primarily because of a lack of purchasing power. According to John Sewell of the Overseas Development Council not only do the developing countries depend on growth in the industrial countries, but it may now be true that the progress of the poorer countries may have an impact on economic growth and employment levels of the developed nations through stimulating demand for the products and also through significantly alleviating inflationary pressures.

For policymakers in the United States this means that our future farm, economic, and fiscal policies need to be designed to mutually benefit our Nation and the needs of the developing world.

## Agriculture is tied closely to the economic well-being of this country

When economic decline occurs in the farm sector, the country's general economy is also affected. Agriculture is this Nation's largest industry, employing about 17 to 20 million people in its production phases--from growing food and fiber, transporting and processing it, selling it at supermarkets, serving food at restaurants, to studying food. Agricultural assets totaled $671 billion in 1977--equal to 75 percent of the capital assets of all manufacturing corporations in the United States.

About 4.3 million people work in agriculture directly. Millions more contribute to the food system once it leaves the farm. For the first time in 1977 labor surpassed raw food material costs to become the largest component of the consumer food dollar. It accounted for one-half of processing and distribution cost.

Approximately 8 to 10 million people are involved in storing, transporting, processing, and merchandising farm commodities. That accounts for one out of every five jobs in private industry. In 1975 nearly 3,300,000 people were employed by eating and drinking places and 15,000 people were agricultural life scientists. In 1970 another 300,000 people were dietitians, health technologists, and technicians. The agricultural food system thus employs more people than any other industry, either directly or indirectly. These figures do not include the related jobs in processing agricultural fiber or leather products nor the manufacture of agricultural equipment and equipment components.

Agricultural production itself accounts for only 3.5 percent of the total U.S. gross national product. When direct agri-support industries are included, however, this rises to approximately 25 percent of the total gross national product.

Farmers took in about $94 billion for their commodities in 1976. Farmers are big spenders, however, using 75 to 85 cents of every dollar they take in for production costs. Thus they pump back into the economy some $80 billion annually through purchases of such input items as equipment, seed, feed, fertilizer, petrochemicals, taxes, and labor costs, not to mention personal items for the family. This means more jobs for the entire economy.

Farmers' links to the economy extend beyond dependence on the growing farm support subsector. Food processors alone purchase 59 percent of the output of metal container

manufacturers, 28 percent of the production of paperboard containers and boxes, and 26 percent of the output of glass container manufacturers. Farmers' dependence on the whole economy can also be seen with the purchase of a single item, such as a tractor. It is almost impossible to determine the number of nonfarm people who are linked to its manufacture--miners of ore; railroad workers shipping the ore; workmen in smelters and foundries; designers; engineers; draftsmen; machinists; people making the batteries, tires, electrical components, lights, gages, cushions, plastic, glass, and sheet metal; etc.

Although agriculture is vital to the general economy, it represents the economic lifeblood of certain regions. A July 1977 report on the importance of agribusiness to the metropolitan Kansas City economy indicates the strong Kansas City dependence on agriculture.

The study measured the impact on the Kansas City economy of agriculture and the related support services. Sales and receipts from agricultural production and agribusiness totaled over $5.6 billion in 1976 in metropolitan Kansas City--equaling two-thirds of the total sales and receipts derived from all manufacturing activity. Further illustrations of the significance of agriculture to the metropolitan Kansas City economy include the following.

--One out of every six people in the Kansas City work force is directly or indirectly supported by agribusiness.

--The manufacture in 1976 of agriculturally related products accounted for 19 percent of all product sales manufactured in the Kansas City area.

--Agribusiness accounted for 30 percent of the revenue from truck transport, 68 percent of barge transport, and 15 percent of rail transportation in or out of the city.

--Wholesale and retail trade of agricultural products, equipment, and machinery totaled nearly $3.6 million in sales and receipts for 1976.

--Government offices involved with regulations or information-gathering on farm production employ about 1,400 people with annual wage bills over $20 million.

--Farming employs 5,000 people, generating nearly $132 million in sales in 1976.

Besides its role as the country's major employer, agriculture is significant because it is the most efficient industry. At the farm level alone, one worker can produce three times more than he did 20 years ago, while the manufacturing worker's production has increased only 1.7 percent during the same timespan.

Today's farmers can buy farm and family needs from other segments of the economy, instead of providing them as they did for many years. This option has given him considerably more time to specialize in his principal occupation--farming.

Implications

Although farmers represent less than 4 percent of the total population, much of America's workforce processes and markets farm commodities or produces inputs for the farmer. Many others are involved in food preparation as well as the agricultural sciences. Agriculture, therefore, besides providing a basic life necessity, is an integral part of the country's economy.

Agriculture has become an important part of U.S. trade relationships in the past few years. This new role, however, may affect traditional, domestic agriculture. The U.S. economy is now affected by gyrations of other countries' agriculture.

With agriculture's recognized importance in the Nation's economy, such unpredictable swings in farm income can seriously affect the country's economic security. Such unpredictable swings in farm income could seriously alter farming methods by causing farmers to adopt more conservative strategies which may result in less than optimum production levels. Farmers may choose to abandon crop specialization, primarily export crops, in favor of more diversification. Further, they may increase their cash savings for liquidity purposes instead of reinvesting in more production farm inputs.

Issues

--With the importance of agriculture to our entire economy, are there ways to minimize the effects of worldwide fluctuations in demand?

--Does the United States have an adequate worldwide food surveillance network which would lessen the shocks of such fluctuations caused by either nature or fabricated by other nations hoping to influence world commodity prices to their advantage?

--Since the food system employs so many people, can the United States afford the dramatic price changes of its basic farm commodities--the foundation of the entire system?

## CHAPTER II

## NARROWING PROFIT MARGINS RESULTING FROM WORLDWIDE ECONOMIC CONDITIONS COULD NOT KEEP PACE WITH RISING COSTS OF FARM INPUTS AND GENERAL INFLATION, PLACING THE FARMER IN A COST/PRICE SQUEEZE

Declines in farm earnings since the peak in farm prices and income in 1973, coupled with higher-priced inputs and record debt levels, have rekindled widespread concern about farmers' cash-flow problems. Farmers have had to face not only large real estate and capital expense investments, but high operating expenses as well. Estimates indicate that operating costs account for about 67 cents per dollar of sales on small farms, even with the help of unpaid family labor, and as much as 80 cents on farms with annual sales over $100,000.

Aggregate commodity prices in 1977 were 5 percent below returns farmers received in the favorable market year of 1973, but the inputs required by farmers continued to escalate--rising 23 percent during the same time period.

Livestock producers were particularly hard hit in the mid 70s. Eight times in this century producers have experienced 10-year high-to-low income cycles because of the length of the cattle breeding cycle and supply/demand considerations. Decisions which cattle producers must make on size of their herds, which will determine the amount of meat reaching the consumer market, take years to implement--a heifer held back for herd expansion cannot bear a calf until nearly three years of age. The low ebb of producers' cycle coincided with the early 70s high inflation, compounding cattlemen's financial problems. Cattle producers are seeing profits again in 1978, but the Administration decision to increase meat imports to lower consumer prices may limit their recovery.

The problem is heightened because today's farmers depend more on purchased inputs than did farmers of pervious years. Table 2 shows that purchased inputs were over 45 percent greater in 1974 than in 1955, and nonpurchased inputs declined nearly 30.5 percent during that time.

Table 2 - Index of Volume of Farm Inputs, 1955-74

(1967=100)

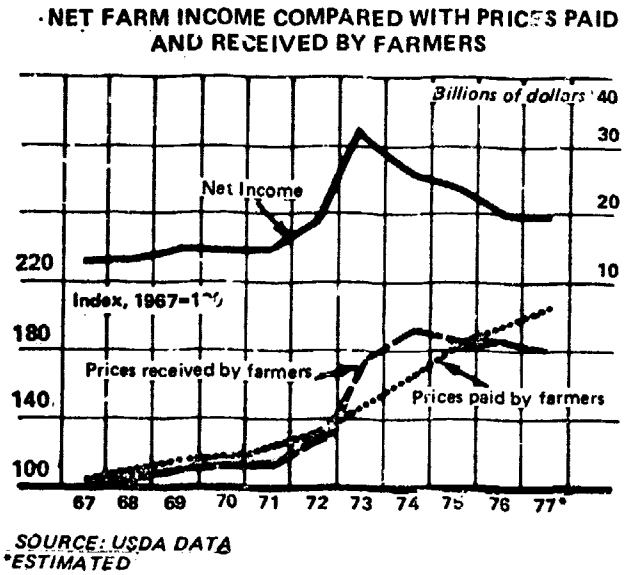
| Year | Total Inputs[1] ALL | NON-PURCHASED | PURCHASED[2] | FARM LABOR | FARM REAL ESTATE | MECHANICAL POWER AND MACHINERY | AGRICULTURAL CHEMICALS[3] | FEED, SEED, & LIVESTOCK PURCHASES[4] | TAXES AND INTEREST | MISCELLANEOUS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1955 | 103 | 141 | 75 | 182 | 103 | 96 | 40 | 73 | 82 | 100 |
| 1956 | 101 | 136 | 76 | 172 | 101 | 97 | 41 | 76 | 82 | 96 |
| 1957 | 98 | 130 | 76 | 160 | 101 | 96 | 41 | 75 | 81 | 100 |
| 1958 | 98 | 125 | 79 | 153 | 99 | 97 | 44 | 81 | 82 | 105 |
| 1959 | 100 | 123 | 83 | 149 | 100 | 97 | 50 | 84 | 86 | 109 |
| 1960 | 98 | 117 | 84 | 143 | 99 | 95 | 50 | 84 | 87 | 109 |
| 1961 | 97 | 115 | 85 | 137 | 99 | 93 | 54 | 87 | 89 | 108 |
| 1962 | 97 | 112 | 87 | 131 | 99 | 94 | 59 | 89 | 90 | 110 |
| 1963 | 97 | 108 | 89 | 127 | 99 | 92 | 66 | 89 | 92 | 110 |
| 1964 | 97 | 106 | 91 | 120 | 99 | 93 | 72 | 91 | 94 | 112 |
| 1965 | 96 | 102 | 92 | 108 | 99 | 94 | 77 | 92 | 95 | 109 |
| 1966 | 98 | 100 | 96 | 102 | 99 | 99 | 86 | 97 | 98 | 104 |
| 1967 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1968 | 101 | 100 | 102 | 97 | 99 | 102 | 106 | 101 | 103 | 106 |
| 1969 | 101 | 98 | 103 | 94 | 98 | 101 | 110 | 104 | 105 | 105 |
| 1970 | 101 | 96 | 105 | 92 | 98 | 101 | 110 | 109 | 106 | 107 |
| 1971 | 102 | 97 | 106 | 90 | 97 | 103 | 120 | 109 | 104 | 105 |
| 1972 | 102 | 95 | 108 | 87 | 95 | 101 | 125 | 110 | 107 | 113 |
| 1973[5] | 106 | 98 | 111 | 87 | 97 | 111 | 131 | 109 | 105 | 120 |
| 1974[5] | 105 | 98 | 109 | 87 | 97 | 109 | 135 | 108 | 104 | 120 |

[1] Includes operator and unpaid family labor, and operator-owned real estate, and other capital inputs.
[2] Includes all inputs other than nonpurchased inputs.
[3] Fertilizer, lime, and pesticides.
[4] Nonfarm portion of feed, seed, and livestock purchases.
[5] Preliminary.

Source: Fact Book of U.S. Agriculture.

Chart I shows the effect on farm income as the prices paid by farmers steadily increased, especially since 1972. The prices received, however, dropped sharply and began leveling. Net income rose sharply in 1973 and then declined rapidly during the following 4 years.

Chart 1




The most current price figures indicate that prices have risen since late fall of 1977. This rise is due to many reasons, including (1) higher livestock prices because of decreased supply, (2) higher prices for fruits and vegetables due to the effects of the heavy California rains last winter, and (3) increased Government efforts to raise farm prices.

USDA forecasts that farm prices for 1978 may average around 12 to 15 percent above previous year levels--after holding fairly stable the past 2 years. Because of higher livestock receipts and greater Government price support payment activities, gross farm income for 1978 is likely to be 10 to 12 percent above 1977's $106 billion even though crop prices received by farmers are still trailing previous-year levels. Government payments may rise about $1 billion from $1.8 billion in 1977. USDA indicated that wheat producers will be the primary beneficiary of nearly half this increase because of the late spring boost in the target prices for 1978 crop wheat to $3.40 per bushel.

The cost of farming continues to escalate with production expenses for 1978 expected to be between 8 to 9 percent over

last year. Despite higher production costs, however, net farm income reached $25 to $26 billion, excluding inventory adjustments, compared with $20.5 billion last year. But this is still well under the 1973 record high of $30 billion. Expressed in real purchasing power, it is some 40 percent below that of 1973.

Taking inventory changes into account, net farm income in 1978 should total $24 billion versus $21.5 billion in 1977. However, if expressed in terms of consistent 1967 dollars, this would be about $12 billion, a rise of only around $.5 billion from the previous year.

Protesting farmers make the cost/price squeeze a public issue

The economic problems of the farmers have been vocalized most recently by members of the protesting American Agriculture Movement. They claim that the low net income and even lower purchasing power of the farmer today places him in a cost/price squeeze unparalleled since the Great Depression. The farmers have demanded Government assistance to bring farm prices up to 100-percent "parity."

The parity concept to which the protesters are referring is essentially a calculation which has been used to describe the relationship between prices farmers receive for their commodities and the prices they pay for production and living expenses. In effect, if all commodities were at full parity, farmers would have the equivalent purchasing power at the base period of 1910 to 1914.

According to the American Agricultural Movement, farmers have not received 100-percent parity since the Truman administration. Between 1946 and 1952, farmers averaged 107-percent parity. Since that time farmers' shares of parity prices have steadily dropped. Shares averaged 84 percent under Eisenhower (1953-1960); 77 percent under Kennedy-Johnson (1961-1968); 76 percent under Nixon (1969-1974); and 73 percent under Ford in 1975. With the domestic drop in grain prices and continued low cattle prices, the outlook during the Carter administration at the end of 1977 was even worse. As of November 15, 1977, the indicators of farm prices showed farmers receiving only 66 percent of parity--the lowest in 44 years. The recent rise in cattle prices should improve this picture by the end of 1978.

There are inherent problems, however, in using parity as a means of measuring the economic situation of the farmer. The principle drawback is the fact that farm productivity has

jumped significantly since 1910-to-14. Parity is based on volume. The average price farmers received for bushels of corn should bear a standard relationship to the cost of producing that corn. It does not consider that farmers can now produce over three times the volume of corn per unit of land than farmers in the base period.

Moreover, the tremendous productivity increases have altered production costs and purchased items. Farmers no longer buy the same items. From 1910-to-14, however, farm fertilizer nutrients (NPK), supplied mostly by commercial fertilizer companies, increased 1753 percent, while the number of farms have decreased 76 percent.

## In the past, farmers who survived low returns did so by increasing productivity

The farmer has historically had a lower income than his nonfarm counterpart. During the 1950s, the farm population received an average of 54 percent of the nonfarm per capita disposable personal income. The 1960s brought a slight improvement, bringing the average disposable income to 65 percent of the nonfarm income. Only in the peak year of 1973 did farmers' income exceed the same for workers off the farm, and the figures have been dropping since then. By 1976 farmers earned 81 percent of the nonfarmer, compared to 109 percent in 1973.

Although they faced relatively stable commodity prices and increasing input costs since World War II, farmers have been able to make ends meet because of increased productivity per acre resulting from research and technology. In fact what distinguised advantaged farmers who remained and prospered on farms while millions left farming was that they were willing to accept some risk inherent in the adoption of new technology. These farmers were willing to invest in inputs which might occasionally be unprofitable, provided they received favorable long-run returns.

Less-advantaged lower volume farmers, typically with less-productive land and less access to capital, were left behind. They were usually more conservative in nature, less likely to go into debt, using available information less. More often than not, their farms were bought by more aggressive, larger neighbors.

Production capabilities began to level off in the 1960s. Farmers were having difficulty maintaining their incomes because production expenses continued to rise. Farmers with high-production operations, however, were again prosperous in the early 1970s. Serious world crop failures placed

a premium demand on U.S. grain surpluses. Economic problems at home have coincidentally resulted in devaluations of U.S. currency--making agricultural commodities competitive with world market prices. (See p. 4 in ch. II.)

Farmers were buoyed by the rapid rise in net income, more than doubling from 1970 to 1973. During this period the U.S. Government dismantled the Government commodity storage programs serving the grain sector, instead advocating increased free markets. But world demand soon slackened and farmers were faced with dropping output prices because of oversupply, little Government assistance, and high input costs.

With the energy crisis, even the most progressive farmers felt the squeeze. Their dependence on technological advances made them particularly susceptible to the unprecedented rises in energy costs. (See p. 33 in ch. IV.)

The situation is worse for farmers who expanded acreage or bought new expensive equipment recently with larger debts and lower incomes. Those who had been farming very long and had equity were more able to weather the low returns through refinancing.

## Farmers financial problems are surfacing at agricultural banks

The severity of farmers' cost/price squeeze can be viewed from many perspectives. Agricultural lenders are frequently good indicators of economic conditions on farms. Slower rates of loan repayment, increased requests for renewals and extensions of existing loans, reduced liquidity, and deterioration in loan quality have been reported by the Federal Reserve Bank of Chicago.

The data was obtained through recent surveys of some 600 bankers in the Seventh Federal Reserve District, an area including Illinois, Iowa, Wisconsin, Indiana, and Michigan. Nearly three-quarters of those responding indicated that second-quarter farm loan demand exceeded the corresponding period in 1976. Every State experienced increased demand, with bankers in Iowa citing a near 80-percent increase. With only 3 percent reporting lowered demand, the survey results provide the most solid evidence of the widespread strength in farm loan demand in more than a decade.

The increased farm loan demand reflects, in part, new loans to finance current operating expenses. Slower loan repayment rates and a simultaneous increase in loan renewals and extensions have also contributed to the strong demand.

Thes
of f e factors have led to a tightening in the availability
unds for lending.

depo The slower loan portfolio turnovers have emphasized
depo sit growth as a means of funding new loans. Although
rura sit growth has apparently continued fairly strong at
loan l banks, it has not paralleled the increased number of
aged s. Loan-to-deposit ratios at the surveyed banks aver-
fift 61 percent--4 percent more than last year. Nearly two-
leve hs of the bankers indicated that their ratio exceeded the
l they desired.

rura The tightening liquidity pressures are apparently causing
Almo l banks to use correspondent bankers and other lenders.
pond st one-fifth of the rural banks reported using corres-
perc ent banks at a higher than normal rate and about the same
requ entage stated that they make more referrals of farm loan
ests to other lending institutions.

that One hopeful sign is that the mid-West bankers reported
not declines in farm earnings and commodity prices have
farm yet created a problem of major dimensions. Although
doub loan portfolios with severe repayment problems have
3.5 p led from the average--6 percent in 1977 as compared with
is s percent of the dollar value of the loans normally--it
till considered a small proportion.

"Typi
reve cal" farm enterprise models
l severity of conditions

the p Although the public has been generally sympathetic to
knowl pleas of the protesting farmers, most Americans have little
In th edge on which to test the accuracy of farmers' claims.
for f is case the public does not even have a reference point
strik armers' hourly wage, as they would with a labor union
e.

inves Most of the populace has no idea what a typical farmer's
recei tment is, what affects prices, or what returns are
inves ved. They would perhaps be surprised to learn that the
to th tment required of today's farming sector is second only
at of the petroleum industry.

we in To provide greater insight into the current situation,
today vestigated the effect of recent financial pressures on
Typic s typical farms. The farms we studied were from the
(ERS) al Farm Series developed by an Economic Research Service
the E study group in USDA. ERS was recently reorganized into
The E conomics, Statistics, and Cooperative Services (ESCS).
SCS is developing a system of about 50 typical farms,

although most findings have not been published to date. The purpose of the system is to provide base-line data about the operating characteristics of farms in major crop producing areas.

Each typical farm was developed from a review of 40 to 50 farms in major producing counties in the state. Basically, a major cropping system operation was determined in a given state and farm surveys were conducted in a group of counties in that State engaging in the same type of enterprise.

Extreme size farms, either large or small, were excluded. A model size farm, the size appearing most often, was then selected from the remaining farming units as the typical operating unit.

A computer model developed by the Commodity Economic Division of ESCS was used to make financial analyses of the farms. The model contains data on size of the farms in acres, the items and value of physical resources required for production, the combination crops and livestock, the cost and level of inputs (fertilizer, manpower, etc.), yields or levels of production, and estimated receipts. Changes were made in selected factors, such as yields and costs, to assess the impact on farmers' net returns. With the help of ESCS personnel we ran a number of analyses with the model.

Table 3 shows the capital requirements for the chosen farming units. Depending on different tenure arrangements, the total dollar amount may not need to be financed by farm operators.

The table does demonstrate, however, the large investment which is required and the management skill associated with those typical farming operations. The table also indicates the different capital requirements among regions of the country producing differing crop mixes.

As indicated, an investment of nearly $2 million is required by a typical California rice farm with valuable land and needed irrigation equipment. Even the lowest investment required--in a typical Georgia peanut and beef cow farm--topped $560,000.

Table 4 shows net return and rate-of-return (ratio of net return to beginning equity) for the same typical farms using 1976 commodity prices and projected 1978 input prices. With the exception of the California farms, the net returns for a farm with typical tenure are projected to drop in 1978. The rate of return drops substantially for all the farms.

TABLE 3 TYPICAL FARM INVESTMENT REQUIREMENTS*

| | Iowa corn and hog farm | Oklahoma cotton, wheat and beef cows | Ohio soybeans and winter wheat | California rice farm | Colorado winter wheat and beef cows | Nebraska corn farm and beef cows | Georgia peanut farm and beef cows | North Dakota spring wheat and potatoes |
|---|---|---|---|---|---|---|---|---|
| 1. Land | | | | | | | | |
| a. Acres | 320 | 960 | 240 | 1,200 | 3,200 | 640 | 580 | 990 |
| b. Value | $619,200 | $532,800 | $441,600 | $1,572,000 | $652,219 | $615,552 | $334,950 | $556,380 |
| 2. Improvement & Equipment | 68,110 | 24,666 | 5,151 | 7,609 | 32,380 | 23,394 | 22,328 | 6,439 |
| 3. Livestock | 13,300 | 3,046 | - | - | 33,571 | 9,190 | 14,680 | - |
| 4. Machinery | 146,948 | 140,453 | 132,465 | 329,344 | 195,819 | 184,800 | 190,341 | 255,194 |
| 5. Total investment | $847,558 | $700,965 | $579,216 | $1,908,953 | $913,989 | $832,937 | $562,299 | $818,013 |
| 6. Enterprises (crops) by acres | | | | | | | | |
| Corn | 135 | | 85 | | | 288 | 198 | Potatoes |
| Soybeans | 125 | | 90 | | | | | 274 |
| Cotton | | 140 | | | | | | Wheat |
| Wheat | | 336 | 28 | 308 | 576 | 64 | | 210 |
| Rice | | | | 650 | | | | Barley |
| Sorghum | | | | 126 | | | | 116 |
| Peanuts | | | | | | | 125 | |
| 7. Labor requirements in hours | 3,361 | 2,493 | 720 | 6,576 | 2,782 | 3,012 | 3,056 | 3,176 |

* Farm values adjusted for 1977 prices.

TABLE 4 NET RETURN FROM FARMING OPERATION

| Farm Type | Owner | | Renter | | Typical equity | Net return-to-beginning equity ratio |
|---|---|---|---|---|---|---|
| | 100% Equity in land & equipment | Minimum Equity in land & equipment | 100% Equity in equipment | Minimum Equity in equipment | | |
| Iowa corn & hog | | | | | | |
| 1976 | $ 38,742 | $- 1,798 | $ 16,586 | $ 6,993 | $ 24,561 | 9.6 |
| 1978 | 6,658 | - 46,678 | -14,934 | -25,850 | - 7,219 | - 2.1 |
| Oklahoma cotton, wheat and beef cows | | | | | | |
| 1976 | 9,728 | - 29,561 | - 4,200 | -12,381 | - 608 | - 0.2 |
| 1978 | 7,194 | - 36,331 | - 6,367 | -15,616 | - 3,493 | - 1.2 |
| Ohio soybeans & winter wheat | | | | | | |
| 1976 | 15,908 | - 7,941 | 3,339 | - 3,269 | 6,693 | 4.8 |
| 1978 | 3,587 | - 31,417 | - 2,045 | - 9,559 | - 2,321 | - 1.1 |
| California rice farm | | | | | | |
| 1976 | 151,712 | 46,319 | 94,045 | 76,248 | 104,841 | 19.4 |
| 1978 | 163,354 | 42,922 | 98,898 | 79.138 | 116,497 | 16.0 |
| North Dakota spring wheat & potatoes | | | | | | |
| 1976 | 119,485 | 80,972 | 79,152 | 66,792 | 100,914 | 33.8 |
| 1978 | 59,600 | 10,497 | 19,036 | 5,824 | 41,064 | 9.8 |
| Colorado winter wheat & beef cows | | | | | | |
| 1976 | -10,330 | -64,618 | -20,019 | -37,794 | -13,914 | - 3.3 |
| 1978 | - 6,433 | -63,159 | -17,520 | -32,689 | -13,856 | - 3.3 |
| Nebraska corn farm & beef cows | | | | | | |
| 1976 | 70,458 | 18,204 | 24,803 | 14,811 | 43,822 | 17.2 |
| 1978 | 48,080 | - 7,971 | 13,752 | 2,336 | 27,422 | 9.8 |
| Georgia peanuts & beef cows | | | | | | |
| 1976 | 25,289 | - 6,537 | - 7,431 | -18,245 | 19,525 | 6.1 |
| 1978 | 23,982 | - 9,827 | - 8,539 | -20,782 | 18,760 | 5.4 |

The table also shows the net return of farms which would result from five different tenure arrangements for each farm. Six of eight farms appear bleak for newer farmers because they are most likely farmers having minimum equity* in either land or equipment. In every case but one, those who were new landowners possessing minimum equity were the most adversely affected by the cost-price squeeze. They will lose up to $63,000 in 1978, according to projected figures.

This problem is further illustrated by Table 5 which focuses on Iowa farmers with five types of tenure variations, all having otherwise identical farming operations.

Table 5
Returns for Different
Types of Tenure in Iowa in 1976

| | Net return | Ratio of return-to-equity |
|---|---|---|
| 100 % owner equity | $38,700 | 6.0 |
| Minimum owner equity | -1,800 | -1.1 |
| 100% renter equity | 16,600 | 9.9 |
| Minimum renter equity | 7,000 | 13.9 |
| Typical equity | 24,600 | 9.6 |

It can be seen that renters tend to have a much higher rate of return on investments than owners. In addition, renters with 100-percent equity in equipment fare better than owners with 100-percent equity in land and equipment.

Some policymakers have extolled the advantages of stabilizing farmland prices. However, the table indicates that if prices of farmland were to stablize, thereby eliminating the incentive for purchase of land as a hedge against inflation, farm operators looking for the highest return on investments would then rent rather than buy land. This development could significantly alter the future farm ownership structure.

Two more potential pressures that can reduce farm income--reduced yields and increased cost of land and equipment--are shown in Table 6. With a 10-percent reduction in yields--within the normal range in variation resulting from factors such as adverse weather conditions--a 25-percent or even larger reduction in profits would result. If commodity prices remain the same while land and equipment costs are projected to a 1977 level, then returns are decreased for the five farms.

*Owning approximately 25 to 30 percent.

Table 6
Reduction in Returns for
Five Farms With Reduced Yields or
Increased Land and Equipment Costs

| | Possible Net Returns (Typical Tenure) | | |
|---|---|---|---|
| | 1976 Price | 10% Decrease in yields | 1977 price on land & equipment |
| Iowa corn and hogs | $ 24,600 | $18,300 | $22,800 |
| Okla. cotton, wheat and beef | -600 | -6,500 | -2,500 |
| Ohio soybean and wheat | 6,700 | 3,800 | 4,600 |
| N.D. wheat and potatoes | 100,900 | 78,600 | 97,000 |
| Ca. rice and wheat | 104,800 | 62,500 | 79,100 |

(Analysis based on USDA's Firm Enterprise Data System Model.)

Finally, the importance of timing market sales is shown in Table 7. Fluctuations in seasonal crop prices meant the difference between an Iowa farmer losing $7,300 and making $33,000, given the exact same resource and factor endowments and labor utilized during the production year. Timing market sales to achieve the most profit can be very difficult, however, since the use of timely market news, forecasts, future market contracting, and hedging techniques is involved.

Table 7
Comparison of Net Return Under
Different Seasonal Commodity Prices (note a)

| | Net return 1976 Prices (Typical Tenure) | | |
|---|---|---|---|
| | Lowest | Average | Highest |
| Iowa | $ 7,300 | $ 24,600 | $ 33,000 |
| Oklahoma | -11,200 | -600 | 9,000 |
| Ohio | -800 | 6,700 | 9,300 |
| North Dakota | 45,900 | 100,900 | 155,400 |
| California | 77,800 | 104,800 | 169,900 |

(Analysis based on USDA's Firm Enterprise Data System Model.)

a/Computations may differ slightly from actual figures because the highest and lowest prices were based on the 1976 calendar year, while the average seasonal price was based on the crop market year.

Although Table 7 shows how important marketing information is, a recent GAO report found that farmers were not using Statistical Reporting Service (SRS) reports which provide information on supplies of agricultural products on

a State and national basis. 1/ The farmers were either unaware of the SRS reports or believed them inaccurate, untimely, or irrelevant to their needs. We recommended that SRS improve its communication with farmers.

Implications

Although many Americans have become aware of farmers' financial difficulties only because of their protest movement, it is obvious that the cost/price squeeze was not invented by malcontent farmers to gain more Government assistance. Farmers who have historically suffered low real incomes found their profit margins reduced even further in the mid 70s.

If current 1978 farm earnings increases are short-lived, the problems already surfacing could become more pronounced. Agricultural banks are reflecting the situation. According to the Federal Reserve Bank of Chicago, future lending may be more cautious, with potential repayment possibilities based on depressed commodity prices.

If lending becomes more cautious and changes in the economic or political environment do not occur, more farmers will be unable to obtain loans. Situations requiring farmers to sell assets--including inventories and/or real estate--to meet their fixed financial commitments will probably occur more often. The impact on farmers could be substantial, especially on farmers who have accumulated large debts.

Statistics on typical farms highlight the serious economic squeeze for many farmers. One major problem is the lack of control over many factors causing economic problems as farmers have become more dependent on purchased inputs. One area where farmers exert some control, however, involves the time when they sell their commodities. Reliable market information and carefully planned marketing strategies, therefore, become crucial. Farmers are not getting this marketing information in many instances.

Issues

--Given the difference in prices that farmers can potentially receive for commodities during the marketing

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1/See "The Statistical Reporting Service's Crop Reports are Not Used by Farmers." GGD-78-29.

year, should the Government help farmers maximize their incomes?

--Given the limitations of the parity concept, should a better indicator of the economic well-being of farm families be developed and kept current?

--Should all farmers, regardless of commodity, be guaranteed a minimum return on their investments?

--Should the Government make a greater effort to provide farmers with the market information they need?

# CHAPTER IV

## INCREASED MECHANIZATION OF FARM OPERATIONS HAS LED TO AN INCREASING DEPENDENCE ON ENERGY, ESPECIALLY PETROLEUM-BASED RESOURCES

Always facing small profit margins, farmers found historically in years after World War II they could better themselves, or just stay solvent, by mechanizing to increase productivity. Equipment manufacturers supplied farmers with larger, more powerful machinery. The entire agriculture system--from agriculture schools and colleges to the research community--also tried to find ways to make farmers extensively more productive through capital-intensive farming and mechanization.

It is difficult to determine whether the new technology was necessitated by increased farm size or whether the farms expanded to fit the available machinery. Willard Cochrane of the University of Minnesota called the siutation a "technology treadmill." The technology-oriented U.S. society encouraged farmers to adopt new technology, thus reducing costs per unit of land, enabling expansion, increasing the return rate, and starting of the process again. With pressures from other expanding farmers and increasing input prices, farmers found they had to expand simply to maintain their income status.

Farm size and equipment became dependent on each other. In turn agriculture became highly dependent on fossil fuel to run the machines. At the same time, farmers began using more petroleum-based inputs, such as fertilizers and pesticides.

Farmers were therefore hard hit by the sharp rises in prices and curtailment in supply of these resources in the early 1970s.

### Using expensive machinery became standard

Farmers found that by using modern machinery they could increase their output per unit of land without increasing labor costs. The speed of the large tractors also enabled them to avoid expensive delays caused by bad weather. Enlarging their farms seemed economically sound. Smaller lower volume farmers who could not afford technological advancements were usually hurt financially.

About 4.5 million tractors are in use on farms today--double the number in use in 1945. Horsepower increase in modern machinery is more dramatic, however. Only 2 percent of the tractors sold in 1965 had over 100 horsepower; but by 1976 nearly half of the tractors were at least that powerful. Today, 150 to 300 horsepower tractor models are common, and models are available with 450, 600, or even 750 horsepower.

Machines made recently have incorporated significant technological advances into their designs. Where most planting and cultivating machines for row crops were two- and four-rowed in the 1950s, there are now 12- to 24-row planters for corn and soybeans. Other machines have also doubled or tripled in size and efficiency.

Of course advanced equipment demands higher prices. A new tractor today costs more than a typical farm did 30 years ago. A high-power tractor can cost more than $100,000.

Large inventories of expensive equipment have become commonplace and special governmental tax incentives and depreciation allowances have added to this trend. In 1969 about 62,000 farms had inventories valued over $50,000. By the time of the 1974 Census, however, almost a quarter of a million farmers had invested that much--with over 110,000 farmers investing at least $70,000 in equipment.

Table 8
Average Per Farm Equipment Inventory of Commercial Farms, 1974, by Geographic Region

| | Average equipment inventory | Percent of farms with equipment valued at $70,000 and over |
|---|---|---|
| National | $27,547 | - |
| Northeast | 28,050 | 6 |
| North Central | 29,435 | 8 |
| South | 21,943 | 5 |
| West | 34,515 | 10 |

Source: U.S. Census of Agriculture 1974.

Table 8 shows that average per farm equipment expenditures vary by geographic region. The lowest expenditures are in the South, averaging nearly $22,000. In addition, only 5 percent of farms in the South had equipment inventories of $70,000 and over, compared with 10 percent in the Western region, which averaged $35,500 per farm.

The aggregate figures, however, do not fully illustrate the substantial investment in equipment which is required of today's farmer. The Firm Enterprise Data System of the USDA Economic Research Service (see p. 19 of ch. III) estimates that in 1978 a typical Iowa corn and hog farm with 320 acres has machinery valued at about $147,000. A typical California rice farm with expensive irrigation equipment requires machinery valued at nearly $330,000.

Besides making demands on farmers in terms of direct costs, the new machinery ties the farmer closely to fossil fuel. Fuel consumption of all farm machinery rose from over 3.3 billion gallons in 1940 to 7.6 billion gallons in 1969 and even higher in the peak farming years of the early 1970s. In 1974 the cost of farm energy totaled over $4.2 billion, accounting for nearly 6 percent of total farm production costs.

## High use of fuels, fertilizer, and pesticides led to energy dependence

Following World War II, the use of high-powered machinery and pesticides and commercial fertilizers made farmers increasingly dependent on petroleum-based resources. At the time it was a wise choice. We used the Chase Econometric model in making the following charts. Chart 2 shows that labor costs rose steadily into the early 70s, but costs for fuel and energy, as shown in Chart 3, were relatively stable. The situation changed in 1973 when all petroleum-based products saw dramatic rises and the dependence upon petroleum was questioned. As Chart 4 indicates, the high prices for fertilizer from 1973 to 1975 led to curtailed use by farmers. With less demand prices dropped and farmers again used heavy fertilizer.

U.S. farmers have become dependent on nonrenewable energy because it has paid to do so.

The U.S. food and agricultural sector today uses 22 percent of the Nation's total energy supply in the production, processing, marketing and preparation of food, natural fibers, and forest products. The food system alone uses 16.5 percent --or 12.4 quadrillion--Btu'sof the Nation's total energy consumption. Four-fifths of the total energy consumption is used beyond the farm gate. The remaining one-fifth-- or only 3 percent--of the national total, is used directly in farm production. For comparative purposes this is less than the amount needed to fuel jet aircraft and almost half the amount of energy used by American families in preparing the food for home consumption and equal to the amount of energy used by the food service establishments.

CHART 2 CHANGES IN TOTAL PRICES PAID
AND RECEIVED; AND PRICES PAID FOP FARM WAGES RATES

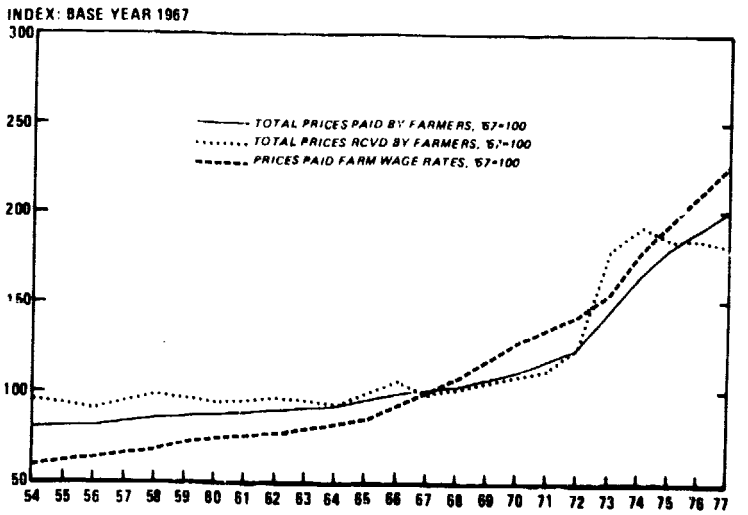



CHART 3 CHANGES IN PRICES PAID FOR ENERGY, FERTILIZER, AGRICULTURAL CHEMICALS

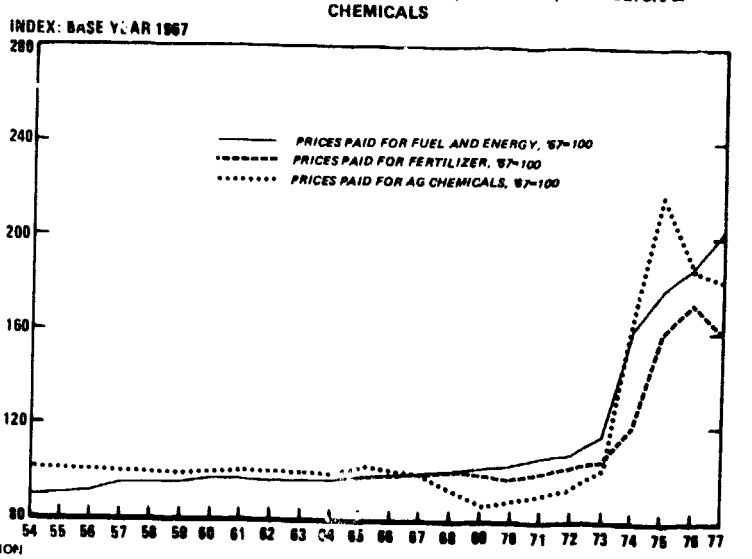
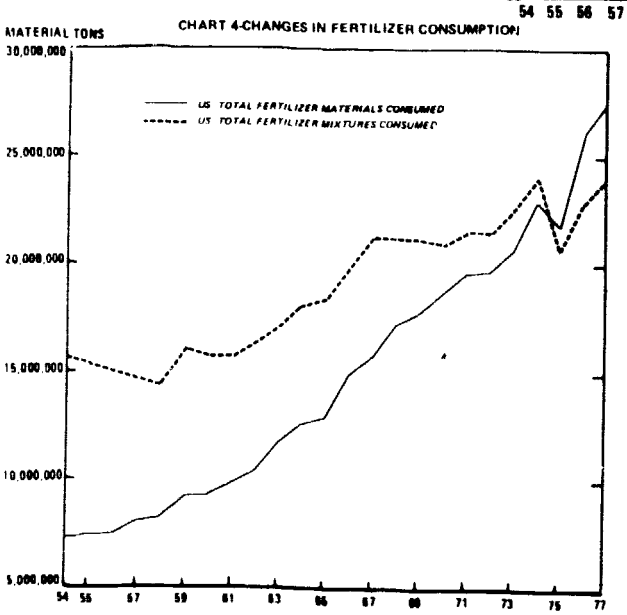



CHART 4-CHANGES IN FERTILIZER CONSUMPTION




SOURCE CHASE ECONOMETRICS, USDA DATA

Major farm uses of petroleum and petroleum derived products include:

--Fertilizers--increased over 500 percent since World War II.

--Irrigation, requiring the highest input of direct energy use, some 20 percent of the farm's energy bill (although this use is regionally specific).

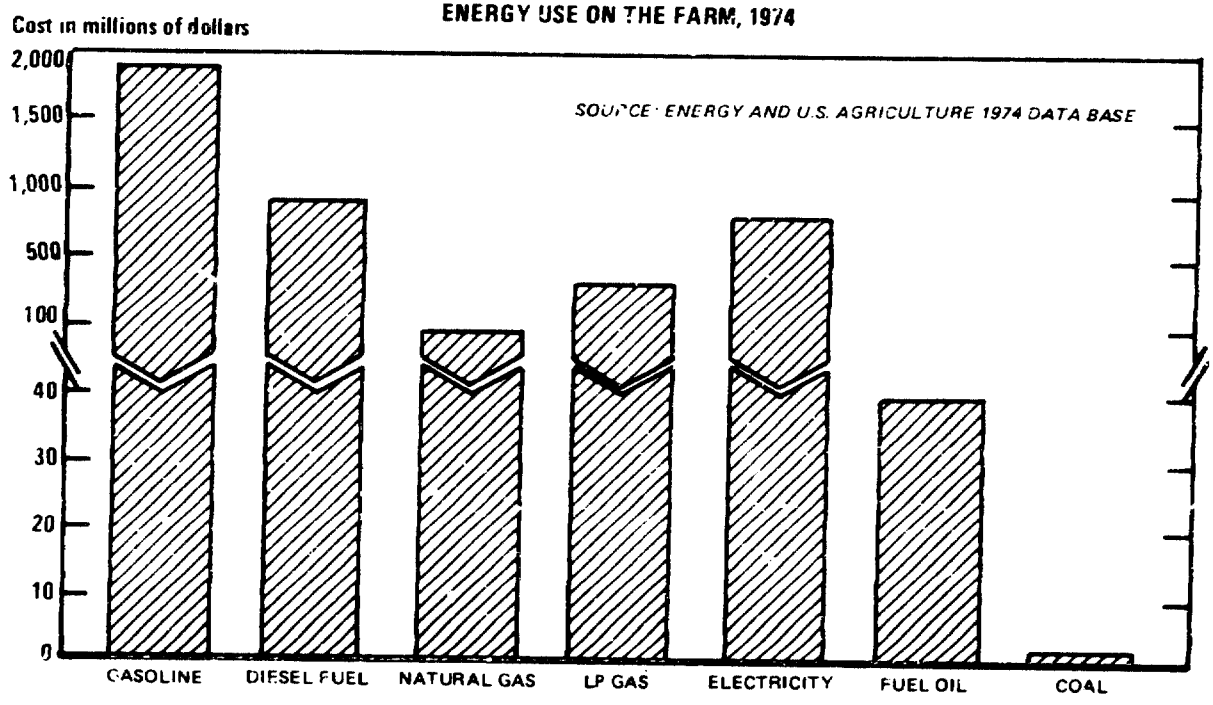
--Fuel for tractors and farm machinery and for operations such as crop drying.

Chart 5 shows that gasoline, followed by diesel fuel, were the principal energy expenditures nationally in 1974, using 3.7 billion gallons at a cost of $1.87 billion. These two sources of energy are used mainly for powering equipment. Natural gas, costing farmers (in aggregate) $100 million, is crucial to fertilizer and pesticide production. Next in usage, LP gas, is needed for irrigation and crop drying, for tobacco curing, and warming of livestock and plant housing. Electricity mainly powers irrigation, lighting, and mechanized operations. Depending on locality, it is usually derived from fuel oil, natural gas, or coal.

Ninety percent of the production energy is used for growing, harvesting, and curing crops, with most used to power machinery. Livestock production accounts for the remaining 10 percent of production energy.

Chart 5

## ENERGY USE ON THE FARM, 1974




| | | |
|---|---|---|
| GASOLINE | 3.7 BILLION GAL | $1,870 MILLION |
| DIESEL FUEL | 2.6 BILLION GAL | 950 MILLION |
| NATURAL GAS | 164 BILLION CU FT. | 100 MILLION |
| LP GAS | 1.5 BILLION GAL | 450 MILLION |
| ELECTRICITY | 32 BILLION KWH | 830 MILLION |
| FUEL OIL | 304 MILLION GAL | 40 MILLION |
| COAL | 33,000 TONS | 2 MILLION |

Grain production, especially corn, accounts for about one fourth of the energy used on crops, and cotton production demands high energy because of irrigation and heavy use of pesticides. The major users of fuel oil are the citrus industry--for frost protection--and the tobacco industry--for flue-curing. Citrus and tobacco crops account for approximately 70 percent of the fuel oil used in crop production.

Seven States accounted for almost half the energy used in farm production in 1974: Iowa, Nebraska, Kansas, Illinois, Minnesota, Texas, and California.

Chart 6 clearly shows farmer dependence on energy. The data was reported by the Small Farm Energy Project, a Nebraska research and demonstration project with the goal of energy self-sufficient farms. The chart gives the averge energy purchases for the farmers who are cooperating with the project to make energy changes on their farms.

Average farms in the project include a family of five living on about 360 acres, with 240 cultivated acres. These families work with a truck, a car, and three 55-horsepower tractors. They also care for 25 dairy cows, 14 beef cows, and 10 sows.

Chart 6

Average Cooperator Farm Energy Use 1977

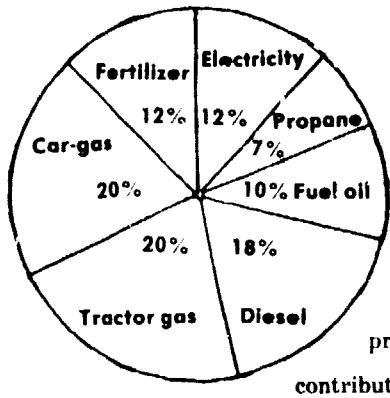
| Energy source | Quantity | $/unit | Million Btu | $/MBtu | $ total |
|---|---|---|---|---|---|
| Electricity | 30,100 kWh | .030 kWh | a/103.0 | $ 8.80 | $ 906 |
| Propane | 582 gal. | .359/gal. | 55.9 | 3.74 | 209 |
| Fuel oil | 611 gal. | .429/gal. | 85.5 | 3.06 | 262 |
| Diesel | 1,100 gal. | .443/gal. | 155 | 3.16 | 490 |
| Tractor gas | 1,360 gal. | .587/gal. | 171 | 4.66 | 797 |
| Car gas | 1,340 gal. | .598/gal. | 169 | 4.75 | 803 |
| Direct energy purchase | | | 739.4 | | $3,467 |
| fertilizer and chemicals | | | b/103 | 10.68 | 1,100 |
| Total energy purchases | | | 842.4 | | $4,567 |

a/This value represents the energy content of the electricity. To generate this much would require 3.1 times this amount or 319.3 million Btus.

b/This value represents the energy necessary to produce fertilizer and chemicals.

Chart 6 (continued)

Typical Farm Energy Use Distribution




This energy pie illustrates the proportion each fuel contributes to total energy purchases.

Source: Small Farm Energy Project Center for Rural Affairs, Hartington, Nebraska.

Chart 6 shows that although it was only 12 percent of the total energy bill the most expensive energy purchase is electricity. Gas for cars, 20 percent of the energy purchases, was second most expensive, followed by gas for tractors, which also amounted to 20 percent of all purchased energy.

There is great geographic variation in energy use, relating to supply and cost, availability, as well as commodities produced. Energy use peak time also varies substantially by region and farming enterprises.

Our interviews with farmers of varying sized farms in 16 States 1/ confirmed farming in each of their areas is closely related to petroleum resources. A farmer in Nebraska considered dependence on fertilizer, pesticides, and herbicides as "just an economic fact of life for the modern farmer." The farmers said that petroleum-based inputs make every acre as productive as possible, thus permitting farmers to efficiently expand their land bases if desired.

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1/As one way of getting information more meaningful than aggregate statistics, we conducted interviews with over 75 farmers in 19 counties of 16 States. At least four farmers of varying sizes were interviewed in each county in the Fall and Winter of 1977/78.

Farmers feel pinch of increased cost, curtailed supply of petroleum

It is no surprise that skyrocketing energy prices affected farmers. Direct agricultural energy costs between 1973 and 1977 (not including energy used in the production of fertilizer, chemicals, and machinery or energy used in farm family living) rose as follows: electricity, 59 percent; gasoline, 69 percent; diesel fuel, 99 percent; fuel oil, 109 percent; LP gas, 130 percent; and natural gas, 220 percent.

High prices were not the only problem farmers faced. Farmers and all Americans had to deal with limited supplies to meet increasing needs. Regional availability inequities made the situation worse.

Farmer dependence on petroleum-based inputs has not improved greatly in the past few years. From 1974 to 1977 there was an 8 percent rise in the use of natural gas, LP gas, and electricity. Farmers are still depending more heavily on fossil fuels, as illustrated by corn harvesting. Ear corn was once picked and air dried, but it is now automatically shelled in the fields while wet and dried mechanically, using either electricity or LP gas. The cost to dry the grain down to an appropriate moisture level for storage (15.5 percent) can cost farmers as much as 25 cents a bushel if done by commercial drying facilities, depending on moisture content. According to the Council for Agricultural Science and Technology, in some instances the energy used in drying corn may exceed the total energy required for seedbed preparation, planting, cultivation, and harvesting.

Our regional case studies reported farmers are still receptive to heightened petroleum-powered technology. For example, the most popular exhibit at a farm progress show in Iowa was an experimental eight-wheel drive tractor. Although Illinois was considered a State with minimum sales potential for four-wheel drive tractors, today it is the leading State in sales.

There has been little dissemination of information by the Government or the Land Grant Universities on alternative farm operation systems which make greater use of renewable resources, some of which are now readily available, such as solar dryers. In addition, there has been little or no public sector incentive program for assisting willing farmers with the inherent risk of early adoption of new systems.

Because of agriculture's unique position of relying on biological processes, any disruption in needed inputs, including energy, has significance beyond the period of unavailability. There are critical times when planting and harvesting must occur. Any shortfall during this time could be devastating for the national food supply if it occurred on a national basis, or could at least result in an extreme economic crisis for those farms which may be regionally affected.

Some farms succeed with less mechanization

America's food system, while recognized for its productivity, does not yield as much per unit of land as do systems of some other countries. Many nations that have not switched from manpower to machinery to the same extent as the United States have been able to maintain or achieve high levels of output, but usually at the cost of higher food prices. Sterling Wortman, a vice-president of Rockefeller Foundation, recently said:

> "Mechanical agriculture is very productive in terms of output per man-year but not as productive per unit of land as the highly intensive systems are. And it is arable land that is scarce for most farmers in many countries."

In fact, even in our own country, some smaller farms have become quite successful and competitive without expanding their land base or becoming as dependent on petroleum-based inputs.

For the most part these farms can be found on the periphery of urban influences throughout the United States. Feeling the pressures associated with increased urbanization, these farmers changed their production systems as well as their marketing strategies. Many chose organic production systems while others adopted a combination of systems. All systems resulted in increased manual labor. A corresponding decline in equipment and energy costs per dollar of gross sales also resulted.

The change did not stop here, as many farmers also changed their marketing strategies. They often circumvented traditional channels for more direct routes to ultimate consumers. Some farmers even chose "pick-your-own" techniques which helped minimize operator harvesting costs and dependence on petroleum-powered machinery.

While the growth of such intensive small farms on the urban fringe has not been overwhelming, this development should not be overlooked because it is estimated that between one quarter to one third of all cropland in the United States is located near urban influences. As a result, small farms may play an increasingly important role in reducing non-productive transition zones between large farms and urban development.

Implications

The emphasis on increased agricultural production in this country since World War II, is no longer the answer to the farmer's problems. Instead the farmer in the late 70s saw commodity prices dropping because of over-supply. Fluctuating foreign market demands for American agricultural products have resulted in gyrations of both prices and supply in recent years, necessitating a revised role for government assistance. Government programs today are geared to "set-asides" to take some land out of production. (See p. 122 of Ch. IX.)

Farmers now have expensive machinery, for which they are often in debt, giving them capabilities beyond U.S. food needs. These farmers are closely tied to petroleum-based fuel, a dwindling and costly commodity. Private industry as well as the academic and research communities are still encouraging the use of petroleum-based fuel. There is little incentive to experiment with greater use of renewable resources.

Agriculture in other countries, as well as in many small farms in this country, has succeeded without overdependence on machinery and petroleum-based fuels. High yield per unit of land can be achieved, although output per man-hour may be less. Cost/benefit analyses, comparing energy-intensive and labor-intensive systems, will have to consider the social costs incurred in society by farmers who are tied to non-renewable resources which must be bought, to a large extent, from foreign nations. These analyses must also consider the latter benefits of using an abundant resource: manpower.

Issues

--Given the importance of agriculture in domestic and international affairs, can the country afford the risks inherent in a system dependent on nonrenewable resources, many of which are under foreign control?

--Is the Government encouraging industry and academia enough to develop technological improvements based on renewable resources?

--Is the Governmnent taking a sufficiently active role in providing farmers with information and technical assistance on production systems which depend less on petroleum and natural gas?

--Have governmental tax depreciation allowances on machinery and equipment fueled the race for increased farm sector mechanization?

--Can lessons be learned from the successful labor-intensive small farms which use appropriate technology and immulated in various segments of U.S. agriculture?

# CHAPTER V

# INCREASED CAPITAL REQUIREMENTS PUT PRESSURES ON FARM OPERATORS

Farmers in recent years have seen farmland and nonland resource values rise to unprecedented levels. The total value of farm real estate rose to $524 billion by January of 1978, an increase of $42 billion over the estimated 1977 value.

As noted previously, farmers must continue to expand their operations just to stay one step ahead of inflation. (See p. 15 of ch. III.) In many cases this need to expand has forced farmers into debt financing. Although a good many farmers have enough equity to balance the debts, many new --and frequently young--farmers are facing financial difficulties in trying to pay debts with shrinking incomes.

## Farmland values doubled nationally in 5 years, spurring land investment

Farmland values have sharply risen in the 70s. From March 1, 1972 through February 1, 1978, land values increased an average of 114 percent nationally. The highest increase occurred in 1973, with a 25 percent rise corresponding to the peak period in grain prices, with other years reporting land value increases of 14 percent.

If the 5 year average increase of about 16.5 percent continues, land currently valued at $1,000 per acre would be worth $33,535 per acre in the year 2000. Even if the annual increase drops to half that level, today's $1,000 acre would be worth $6,193 by the end of the century.

The high demand for farmland has reflected, in part, its value as a hedge against inflation for the owners. Although it did not always achieve this goal, farmland was an asset to owners in the mid 1970s. During the boom which began in 1972, the real value of farmland went up 42 percent. Land values greatly exceeded the high inflation rates.

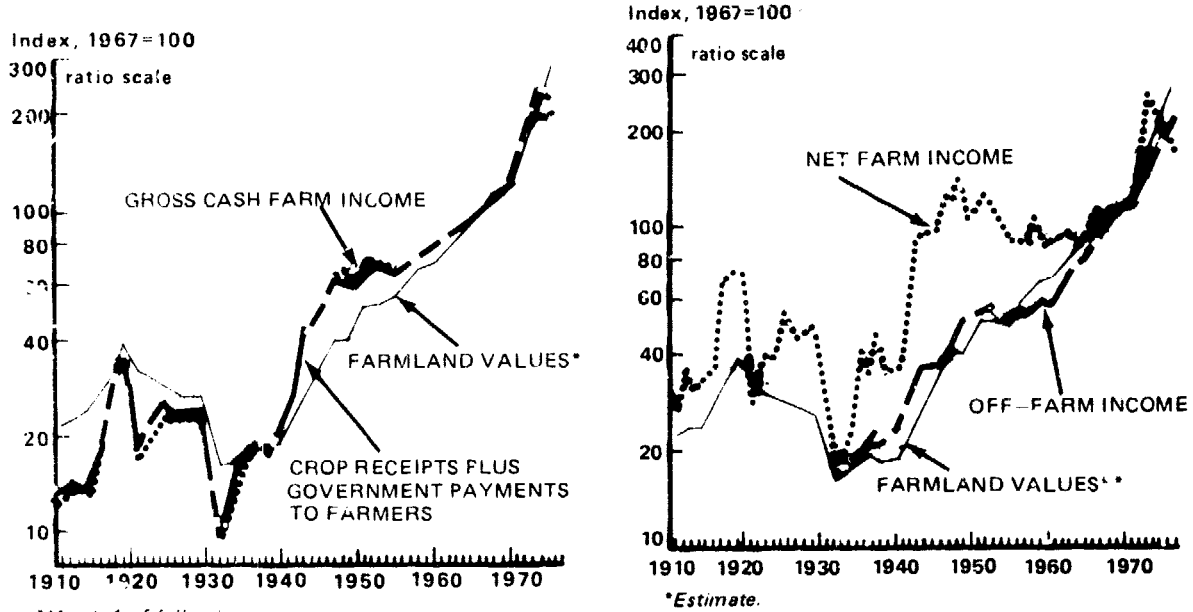
Farmland became an increasingly attractive investment for nonfarmers. Although nonfarm corporations own a small number of farms, they account for a sizable proportion of crop production--especially in specialized items--as well as most total land resources.

There have been some attempts to capitalize even more on the rising value of farmland. The Continental Illinois Bank and Trust Company had made plans in 1977 to set up a $50 million trust fund to purchase working farms in the mid West. Fund shares were then to be sold as a tax-sheltered investment; however, strong opposition, including that of Secretary of Agriculture Bob Bergland, killed the plan.

One of the major foundations of farmland values is the income which farmers can generate from the land. Farm income has not necessarily correlated with land values over the years, however, as chart 7 shows. In fact, while farmland value has continued to soar, farm income has declined recently. Net cash income from farming for 1977 is expected to be lower than earlier in this decade. Some experts are concerned that the current interest in land has carried land prices beyond the level justified by farm earnings.

Chart 7

**FARMLAND VALUES COMPARED WITH GROSS AND NET FARM INCOME**




*March 1 of following year.

Source: Federal Reserve Bank of Chicago

*Estimate.

**March 1 of following year.

In today's farmland market, expected capital gains from the land have become the dominant factor in the value of the land. This does not supply farmers, however, with the cash flow necessary to repay debts. In addition, there is no guarantee that prices for land will continue their upward spiral. In fact, increases in farm real estate values are slowing down, with a 9 percent increase during 1977 and a projected rise of only 6 percent by the end of 1978. In some

isolated cases, actual sales of farmland since the summer of 1977 have been below what was recorded earlier in the same area. For example, farmland values dropped in Nebraska to an average of $385 per acre--4 percent below that recorded between February 1977 and February 1978.

In general, however, land values will likely continue to increase along with nonfarm demand for land. Some States recorded big increases in 1977 over 1976 prices, the largest in Wisconsin, South Dakota, and Maryland. These increases were up 18 percent, 17 percent, and 16 percent, respectively. Nationally, the average price of farmland in 1977 was estimated at $490 per acre--up from $219 in 1971. Prices rose over 1976 prices an average of 9 percent during 1977.

Other farm resources also escalated

Meanwhile, nonland farm assets have also multiplied. Average nonreal estate assets per farm in 1940 averaged as little as $1,700. By 1970, assets increased to over $22,500 and in 1977 they almost doubled to about $44,400.

Nonland resources include farm machinery and motor vehicles, crop and livestock inventories, and equipment. The Department of Agriculture projects that the total value of these assets will be over 12 percent higher at the end of 1978.

Aggregate nationwide figures do not accurately reflect the dynamics of the investment now required, however. Using the USDA Firm Enterprise Data System, a typical Central Iowa corn and hog farmer would have nonland assets in excess of $200,000 in 1978, and a Colorado cattle and winter wheat farmer would have nonreal estate assets over $250,000.

There are numerous reasons for the rising cost of nonland resources, many interrelated. They include

--increased equipment investment per unit of labor,

--increased use of purchased vs. farm-derived inputs,

--adoption of larger capacity machinery,

--inflation,

--increased machinery and equipment prices, and

--more livestock per farm and/or higher valued stock.

## Farmers increasingly turned to debt financing

As expansion is frequently an economic necessity, farmers obviously needed help in financing larger farms. One way of getting this assistance was to ask assistance from lending institutions. Many farmers went to lending institutions. Today's farmers in aggregate are in debt eight times more than their 1950 counterparts.

Farmers, however, are not deeply in debt in an absolute sense. Throughout this period of increasing debt, the debt-to-equity ratio was usually less than 16 percent, as seen in Table 9. In aggregate, farmers are in a relatively better position than nonfarmers, since total nonfarm debt increased 11-fold since 1950 and consumer debt increased 10-fold.

Farmers' strong financial position is the result of a high equity level maintained in their assets. The total real estate debt grew from $9,900 per farm in 1970 to $20,500 in 1977 and is projected by USDA to average nearly $24,000 in 1978. But assets also climbed, with real estate valued at over $73,100 in 1970 worth $180,700 in 1977 and projected to be only $4,000 short of $200,000 in 1978. Similarly, nonreal estate assets nearly doubled in value, going from the 1970 figure of $33,600 to $63,100 in 1977.

Table 9

Ratios of Farm Debt-to-Asset and Debt-to-Equity

Farm Debt-to-Asset Ratio (note a)

| | 1970 | 1975 | 1976 | 1977 |
|---|---|---|---|---|
| Real estate | 13.5 | 12.2 | 11.9 | 11.4 |
| non-real-estate | 24.0 | 23.9 | 24.3 | 26.3 |

Farm Debt-to-Equity Ratio (note b)

| | 1970 | 1975 | 1976 | 1977 |
|---|---|---|---|---|
| | (Percent) | | | |
| Real estate | 16 | 14 | 14 | 13 |
| non-real-estate | 32 | 32 | 32 | 36 |

a/Financial liability divided by total land and nonland resources.

b/Financial liability divided by resources less financial liability.

Source: USDA

These positive figures refer to farmers in aggregate. Because many farmers own their assets debt-free, others have high debt and low equity. These farmers are now in jeopardy as commodity prices have slipped. The 1974 Census indicates that half of the farm operations under 45 years of age were indebted in comparison with about one-third of those 45 years old and over.

Average FLB borrower appears financially sound

To try to gain some insight into major farm real estate borrowers, we reviewed the characteristics of borrowers from the Federal Land Bank (FLB), which is the largest farm real estate lending institution accounting for about a third of all farm borrowers. Financing by the seller is becoming increasingly significant, however, with an estimated 44 percent of all new credit extended for farm real estate transfer during the year ended March 1, 1976, coming from that source according to USDA estimates.

Following is a profile of typical FLB borrowers in 1976:

--Average age 44, about the same since 1973. A fourth of the loans were made to farmers under 35.

--Typical farm operation of about 900 acres, 60 percent of which the borrower owned. The rest was rented.

--Total assets of $500,000, with liabilities of $176,000. This gives him a debt/asset ratio of 35 percent.

--Net farm income of $31,000. About 74 percent of the borrowers had off-farm income, averaging $23,000 additional income.

--Average size farm loan of $79,000, representing about 55 percent of market value of the security.

A more detailed description is outlined in Table 10.

Table 10
Characteristics of Typical FLB Borrower

| Characteristics | 1973[a] | 1974[a] | 1975[a] | 1976[a] |
|---|---|---|---|---|
| Of borrower - | | | | |
| Age | 43 | 43 | 44 | 44 |
| Assets | $351,327 | $443,920 | $473,731 | $499,486 |
| Debts | $12[illegible]78 | $153,702 | $164,825 | $176,213 |
| Net worth | $27[illegible],349 | $290,218 | $308,906 | $323,273 |
| Debt/asset ratio | 3[illegible] | 35% | 35% | 35% |
| Debt/net worth ratio | 59% | 53% | 53% | 54% |
| Net nonfarm income[b] | $21,435 (79%) | $21,155 (78%) | $24,601 (76%) | $23,382 (74%) |
| Net farm income | $17,155 | $22,692 | $26,447 | $30,643 |
| Of farming operation - | | | | |
| Acres farmed | 796 | 877 | 956 | 908 |
| Acres in security | 290 | 286 | 314 | 295 |
| Acres rented[b] | 824 (32%) | 983 (36%) | 934 (41%) | 852 (44%) |
| Acres other land owned[b] | 575 (35%) | 496 (43%) | 495 (48%) | 456 (50%) |
| Building value | $25,268 | $29,601 | $33,348 | $36,641 |
| Appraised value | $91,498 | $109,093 | $127,770 | $143,243 |
| Market value | $94,648 | $115,393 | $135,531 | $150,259 |
| AV/acre[c] | $316 | $484 | $407 | $485 |
| MV/acre[c] | $327 | $514 | $432 | $509 |
| AV/MV | 97% | 95% | 94% | 95% |
| Of loan - | | | | |
| Loan amount | $55,312 | $64,272 | $72,761 | $79,079 |
| New money | $44,070 | $54,673 | $59,744 | $63,593 |
| Rate | 7.46% | 8.10% | 8.67% | 8.68% |
| Term | 27 years | 27 years | 27 years | 27 years |
| Loan/AV | 60% | 59% | 58% | 57% |
| Loan/MV | 58% | 56% | 55% | 55% |

[a]Includes only farm loans.

[b]Average based only on borrowers reporting.

[c]Appraised value (AV) and market value (MV).

Source: Farm Credit Administration

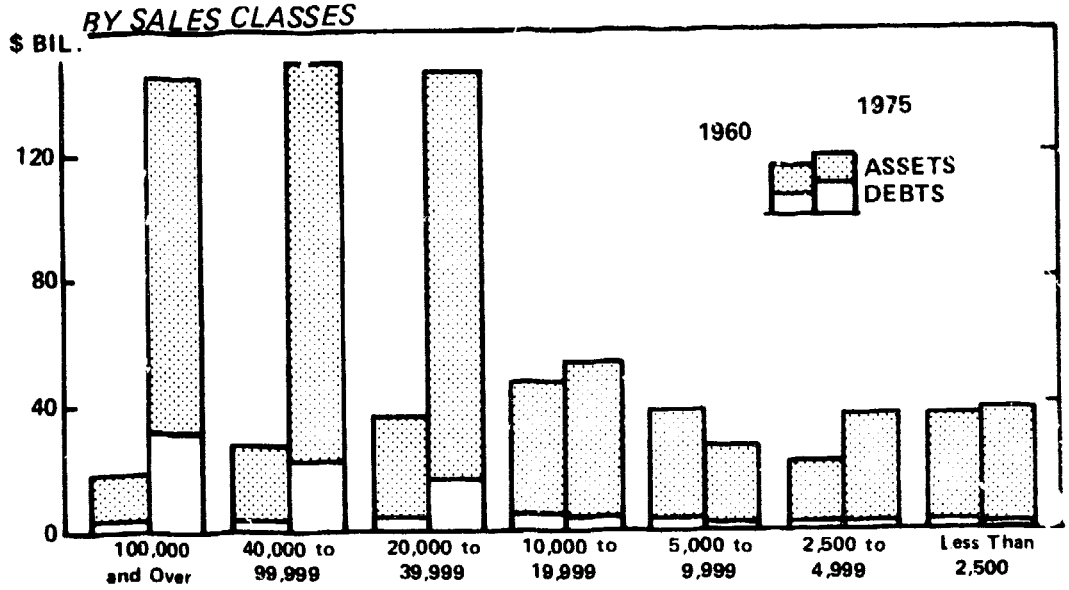
The highest percentage of money borrowed--33 percent--was used for real estate--slightly up from 1975. Refinancing of FLB loans also increased slightly, probably reflecting farm expansion. Refinancing of loans held by other lenders was down slightly in 1976.

The figures reflect a well-capitalized, aggressive, and successful farm operator. Ninety-five percent of the borrowers were individual operators. These farmers frequently were able to spread fixed ownership costs of new land

acquisitions over total operated acreage. These large owner-operators have therefore, played a significant role in the farm real estate market, offering small farmers and nonfarm interests stiff competition for the land.

This view of large farmers buying up even more land is also reflected in statistics on the indebtedness of various size classes of farms, as seen in Chart 8. Farms with sales in excess of $100,000 per year averaged nearly 30 percent indebtedness. Smaller farms averaged only 10 to 12 percent.

CHART 8 - FARM ASSETS AND DEBTS, 1960 AND 1975, BY SALES CLASSES




Source: USDA

Younger borrowers secured by off-farm income

To get a fair evaluation of the financial picture of individual farmers, however, the data must be analyzed further. FLB reports that younger farmers, 35 and under, account for one quarter of all loans. They have a significantly higher debt-to-asset ratio--43 percent compared with 35 percent in 1976 for all FLB borrowers.

These younger farmers farmed 40 percent less land and used slightly less of their farmland as security. A larger proportion used the money to buy land. FLB loans to younger farmers were secured because average young borrowers also had high nonfarm incomes of over $20,000.

Characteristics of young FLB borrowers in 1975 and 1976 are shown in table 11.

Table 11

Characteristics of Typical Young FLB Borrower

| | 1975 a/ | | 1976 b/ | |
|---|---|---|---|---|
| Of borrower - | | | | |
| Age | 29 | | 29 | |
| Assets | $403,315 | | $355,056 | |
| Debts | $164,368 | | $146,720 | |
| Net worth | $238,947 | | $208,336 | |
| Debt/asset ratio | 41% | | 41% | |
| Debt/net worth ratio | 69% | | 70% | |
| Net nonfarm income b/ | $ 23,401 | (75%) | $ 20,133 | (73%) |
| Net farm income | $ 26,378 | | $ 26,691 | |
| Of farming operation - | | | | |
| Acres farmed | 968 | | 738 | |
| Acres in security | 292 | | 235 | |
| Acres rented b/ | 1,047 | (44%) | 758 | (47%) |
| Acres other land owned b/ | 512 | (37%) | 360 | (37%) |
| Building value | $ 32,305 | | $ 31,955 | |
| Appraised value | $112,683 | | $112,058 | |
| Market value | $118,114 | | $116,365 | |
| AV/acre c/ | $ 386 | | $ 478 | |
| MV/acre c/ | $ 404 | | $ 496 | |
| AV/MV | 96% | | 96% | |
| Of loan - | | | | |
| Loan amount | $ 67,689 | | $ 65,347 | |
| New money | $ 58,139 | | $ 55,455 | |
| Rate | 8.66% | | 8.68% | |
| Term | 28 years | | 28 years | |
| Loan/AV | 61% | | 60% | |
| Loan/MV | 58% | | 58% | |

a/ Includes only farm loans.
b/ Average based only on borrowers reporting.
c/ Appraised value (AV) and market value (MV).

Source: Farm Credit Administration

## Joint FLB/FmHA program aimed at low-equity farmer

FLB also has a program to reach more needy farmers--a joint effort with the Farmers Home Administraion (FmHA). The program is designed to help borrowers with low equity purchase land by permitting each financial institution to make loans to the same borrower on the same security. There are two types of arrangements available: joint closings and subordination of FmHA loans. New farmers who have little equity but substantial repayment capacity would be eligible for a joint closing. The second type of arrangement permits farmers with FmHA loans to borrow additional funds from FLB, if they are eligible, and FmHA loans are subordinated to the FLB loans.

Over half the joint borrowers in 1976 were under 35. It is therefore logical that typical FLB/FmHA borrowers were more highly leveraged and had less equity in their businesses than average FLB borrowers.

The number of joint borrowers in 1976 increased by about 500 individuals to nearly 4,250. The typical FLB/FmHA borrowers were then 36 and operated about 630 acres of land, half of which they owned. They averaged a net farm income of $27,000, making additional off-farm incomes of $9,000.

Table 12 shows the characteristics of joint FLB/FmHA borrowers from 1973 through 1976.

## Current real estate lending does not reach all farmers in need

Farmers served by FLB are obviously viable, financially well-endowed farmers, whether young or old.

FLB is a conservative lending organization. In recent congressional field testimonies, for example, one FLB borrower complained that his loan would be approved only if one of his family had adequate off-farm employment to guarantee its repayment.

FLB does attempt to reach less fortunate farmers through its joint program with FmHA. But even the joint loan program is not reaching all farmers having credit needs. A task force report on The Family Farm in California, issued in November 1977, concluded that there is a shortage of funds for low-equity farmers and for beginning farmers who have the necessary skills, but not the required collateral, for a successful farm.

Table 12
Characteristics of Typical Joint FLB/FmHA Borrower

| | 1973 | | 1974 | | 1975 | | 1976 | |
|---|---|---|---|---|---|---|---|---|
| | FmHA Joint Closings | FmHA Subordination | FmHA Joint Closings | FmHA Subordination | FmHA Joint Closings | FmHA Subordination | FmHA Joint Closings | FmHA Subordination |
| Of borrower - | | | | | | | | |
| Age | 35 | 39 | 34 | 40 | 34 | 40 | 33 | 40 |
| Assets | $126,090 | $153,378 | $166,622 | $197,819 | $206,563 | $246,543 | $237,043 | $292,598 |
| Debts | $78,254 | $85,462 | $102,096 | $104,142 | $123,381 | $126,381 | $136,026 | $147,741 |
| Net worth | $47,836 | $67,912 | $ 64,526 | $ 93,677 | $ 82,751 | $120,162 | $101,017 | $144,857 |
| Debt/asset ratio | 62% | 56% | 61% | 53% | 60% | 51% | 57% | 50% |
| Debt/net worth ratio | 164% | 126% | 158% | 111% | 150% | 105% | 135% | 103% |
| Net nonfarm income[a] | $7,044 (62%) | $6,706 (54%) | $8,073 (59%) | $7,084 (49%) | $8,733 (60%) | $8,038 (49%) | $9,232 (57%) | $8,510 (51%) |
| Net farm income | $13,717 | $16,368 | $18,562 | $22,372 | $21,651 | $25,417 | $24,949 | $30,108 |
| Of farming operation - | | | | | | | | |
| Acres farmed | 576 | 651 | 576 | 641 | 580 | 697 | 583 | 709 |
| Acres in security | 256 | 358 | 333 | 327 | 240 | 353 | 224 | 338 |
| Building value | $16,200 | $22,569 | $19,149 | $29,296 | $22,213 | $32,714 | $25,944 | $37,665 |
| Appraised value | $60,039 | $71,291 | $74,502 | $90,533 | $91,583 | $118,397 | $104,509 | $141,336 |
| Present market value | $61,652 | $72,958 | $76,587 | $94,987 | $97,725 | $125,895 | $109,649 | $148,365 |
| AV/acre[b] | $267 | $231 | $316 | $277 | $381 | $336 | $467 | $418 |
| MV/acre[b] | $273 | $235 | $333 | $291 | $406 | $357 | $490 | $439 |
| AV/MV | 97% | 98% | 95% | 95% | 94% | 94% | 95% | 95% |
| Of loan - | | | | | | | | |
| Loan amount | $27,797 | $29,713 | $36,695 | $36,716 | $44,700 | $50,386 | $50,589 | $61,928 |
| Loan/AV | 46% | 42% | 49% | 41% | 49% | 43% | 49% | 44% |
| Loan/MV | 45% | 41% | 47% | 39% | 46% | 40% | 46% | 42% |
| Number of loans - | 2,779 | 995 | 3,116 | 1,394 | 2,225 | 1,570 | 2,567 | 1,679 |

[a]Average based only on borrowers reporting

[b]Appraised value (AV) and market value (MV).

Source: Farm Credit Administration

Debt servicing capacity has decreased

Those who have been able to borrow money are now often finding their repayment abilities declining. Agriculture Department officials project real net cash income in 1978 to be more than 4 percent lower than in 1977 and more than 25 percent lower than 1973.

To determine the approximate per-acre debt assumed annually by farmland purchasers, multiply the average per-acre dollar value of farmland by the debt-to-purchase-price ratio for the farm real estate transfer.

--200 acres of farmland purchased for $300,000 (average purchase price per acre of farmland is $1,500).

--Finance $228,000, thus debt-to-purchase-price ratio is 76 percent ($\frac{228,000}{300,000}$).

--Approximate per-acre debt assumed by farmland purchasers is $1,140 ($1,500 x 76 percent).

Assuming that the purchase is financed for 25 years at 8 percent interest with equal annual payments, the amount to be paid each year per acre is $106.80 annual principal and interest (P&I) payments. (This figure was determined by using the capital recovery factor for 8 percent interest and 25 years--0.09368. $1,140 x 0.09368 equals $106.80 annual P&I payments.)

A debt-to-purchase ratio of 76 percent was used in the example because recent analyses have shown that P&I payments have increased faster than land values during the past 20 years, reflecting the general rise in both mortgage rates and debt-to-purchase-price ratios. In the past few years the proportion of the financed purchase price has averaged about 76 percent--70 percent in the mid-1960s and 60 percent in the mid-1950s.

It is important to understand the difference between the debt-to-purchase ratio described above and the debt-to-asset ratio. The latter is the total farm debt related to the total farm assets; the former is the amount of debt undertaken for that particular purchase.

Farmers expanding their operations, therefore, may have a high debt-to-purchase-price ratio of 76 percent, but a substantially lower debt-to-asset ratio when their total farm investments are considered. The impact is most

pronounced on farmers just starting out who have accumulated little land and nonland resources. Their resources are insufficient to spread out the purchase cost, thereby improving their debt-servicing capacity. For those beginning less-advantaged farmers, their debt-to-purchase ratio may closely approximate their debt-to-asset ratio.

The proportion of gross income required to repay the debt can be determined by estimating the ratio of principal and interest payments to expected gross receipts per acre.

$\frac{\$106.8}{267}$ = P&I per acre / Expected gross receipts for acre of corn* = 40%

(*119 bushels/acre expected yield of corn x $2.25 per bushel = $267)

Therefore the P&I payments require 40 percent of the gross cash receipts. This leaves $160.20 to cover all other costs.

Calculations by the Federal Reserve Bank of Chicago indicate that high land values and lower corn prices have indeed pushed the ratio of P&I payments to cash receipts in Illinois to a new high of about 40 percent. The previous high was the 1970 figure of 35 percent, up from 20 percent in the 1960s.

A debt servicing requirement of 40 percent of gross receipts is dangerously high, considering the volatile character of agriculture, especially if farmers cannot spread this proportion over land already owned clear and simple. A number of natural difficulties, such as too little or too much rain, can substantially cut yields. Meanwhile farmers have little control over fluctuating prices for their products.

Thus if a drought were to cut yield to 90 bushels of corn per acre (still above the national average) and corn prices fell to $2.00 per bushel, the expected gross receipts would drop from the $267 per acre estimated earlier to $180 per acre.

The effect on the farmers' ability to pay their debts is obvious. The P&I payment would stay the same at $106.80, while the debt servicing requirement would be close to 60 percent. That would leave the farmer with $73.20 per acre for seed, fertilizer, pesticides, soil preparation, planting, harvesting, drying and hauling the corn to market or storing it--the cost could approach twice this amount.

In the above example, a farmer just entering farming or expanding his operation could not cover his cost if his debt-to-purchase ratio were 76 percent--the average ratio in recent years. Farmers with substantially lower debt-to-asset ratios would be better able to cover the costs or losses. They would be able to refinance or extend their loans, or they could spread their debt by using their existing land resources to help service the new land purchase debt.

Farm operational loans become harder to get for the most distressed farmers

Not only are farmers having a difficult time securing and paying back loans for purchase of land, but they are experiencing even greater problems with operational loans. According to a March 1978 survey by USDA's new Economic, Statistics and Cooperative Service, most U.S. farmers are able to get credit, but marginal operators will continue to have problems getting credit and repaying outstanding loans. A small but significant number of short-term borrowers in 12 States hit hard by reduced income and cash flow problem will not be able to get operational funds from commercial sources.

The bankers in these 12 States reported that they had a non-real-estate loan portfolio totaling 714,000 clients of which 22,000 would not qualify for similar loans in 1978--up from approximately 9,000 in a normal year.

The Production Credit Association reported a comparable situation, indicating that about twice the normal number of farmers have borrowed up to their maximum limit and therefore are ineligible for further loans. This represented about 4 percent of their loan clientele.

In addition private bank borrowers have been using accumulated equity to refinance shorter-termed production loans. As a result, borrowers refinancing short-term loans into real estate debt rose sharply from a normal yearly low of 2 percent to about 7 percent, or 50,000 farmers. This figure was even higher for PCA borrowers, which rose from an average of 3 percent to approximately 9 percent.

Once again average figures do not accurately reflect the severity of the situation in some States. The percent of commercial bank farm borrowers who refinanced short-term debt into real estate-secured loans was 25 percent in Georgia, 19 percent in South Dakota, and 13 percent in Colorado.

## Off-farm income has helped ease financial burdens

Farmers have coped with limited farm income and skyrocketing financial requirements by receiving income from other sources. More than two out of three farmers receive over half their income from nonfarm sources.

The percentage of off-farm income received by an average farmer has risen steadily over the years. In the mid 50s off-farm income represented only half of what farmers could make on their farm. By the mid 60s, off-farm income equaled farm income. In 1970, the percentage rose to 55 percent and 1976 statistics indicated off-farm income provided farmers with nearly 60 percent of their total income, including Government payments.

Farmers at both small and large ends of the scale earn the most off-farm income. An average farmer with sales less than $2,500 earned over $15,500 in off-farm income in 1976, giving a relatively high total income of over $17,500. The next highest off-farm income was earned by farmers in the $100,000- and-over class, with an average of over $13,000 in 1976. Farmers with sales between $20,000 and $99,999 brought in the lowest outside earnings, averaging between about $5,500 and $7,000. Average farmers in every sales class under $20,000 earned more from their off-farm jobs and investments than from farm sources.

Statistics from the Labor Department show the impact farmers are having on the general labor force, as they increasingly seek second incomes. As shown in table 13, over one-fifth of those persons holding two or more jobs in 1976 held at least one job in agriculture. This percentage has remained relatively stable over the past 15 years, despite the fact that the number of farms has decreased by almost one half.

Nearly 7 percent of those classified as farmers or farm managers held two or more jobs. Almost 3 percent of all workers who held more than one job were primarily farmers. Over 17 percent were farmers secondarily. Five percent of farm laborers and supervisors were multiple job holders--1.6 percent holding agriculture jobs as their primary occupation and over 2 percent secondarily in agriculture. Two percent of workers with primary jobs in agriculture also held secondary jobs which were farm-related.

TABLE 13 - TYPE OF INDUSTRY AND CLASS OF WORKER OF PRIMARY AND SECONDARY JOBS FOR PERSONS HOLDING TWO JOBS OR MORE, MAY 1975 THROUGH MAY 1976 (Numbers are in thousands)

| Date, type of industry, and class of worker of primary job | Total work force | Persons holding 2 jobs or more | | Type of industry and class of worker of secondary job | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Agriculture | | | Nonagricultural industries | | |
| | | Number | Percent of total employed | Total | Wage and salary workers | Self-employed workers | Total | Wage and salary workers | Self-employed workers |
| May 1975 | | | | | | | | | |
| Total | 84,146 | 3,918 | 4.7 | 705 | 133 | 572 | 3,213 | 2,549 | 664 |
| Agriculture | 3,622 | 253 | 7.0 | 68 | 36 | 32 | 185 | 130 | 5 |
| Wage and salary workers | 1,300 | 83 | 6.4 | 46 | 14 | 32 | 37 | 32 | 5 |
| Self-employed workers | 1,781 | 135 | 7.6 | 14 | 14 | (1) | 121 | 121 | (1) |
| Unpaid family workers | 540 | 35 | 6.5 | 8 | 8 | (2) | 27 | 27 | (2) |
| Nonagricultural industries | 80,524 | 3,665 | 4.6 | 637 | 97 | 540 | 3,028 | 2,369 | 659 |
| Wage and salary workers | 74,270 | 3,422 | 4.6 | 632 | 92 | 540 | 2,790 | 2,131 | 659 |
| Self-employed workers | 5,714 | 225 | 3.9 | 3 | 3 | (1) | 222 | 222 | (1) |
| Unpaid family workers | 540 | 18 | 3.3 | 2 | 2 | (2) | 16 | 16 | (2) |
| May 1976 | | | | | | | | | |
| Total | 87,278 | 3,948 | 4.5 | 674 | 100 | 574 | 3,273 | 2,535 | 738 |
| Agriculture | 3,415 | 199 | 5.8 | 54 | 34 | 20 | 144 | 144 | - |
| Wage and salary workers | 1,296 | 64 | 4.9 | 34 | 14 | 20 | 29 | 29 | - |
| Self-employed workers | 1,697 | 113 | 6.7 | 17 | 17 | (1) | 97 | 97 | (1) |
| Unpaid family workers | 422 | 22 | 5.2 | 3 | 3 | (2) | 19 | 19 | (2) |
| Nonagricultural industries | 83,863 | 3,749 | 4.5 | 620 | 66 | 554 | 3,129 | 2,391 | 738 |
| Wage and salary workers | 77,447 | 3,541 | 4.6 | 612 | 58 | 554 | 2,929 | 2,191 | 738 |
| Self-employed workers | 5,922 | 204 | 3.4 | 8 | 8 | (1) | 196 | 196 | (1) |
| Unpaid family workers | 494 | 5 | 1.0 | - | - | (2) | 5 | 5 | (2) |

(1) Self-employed persons with a secondary business or farm, but no wage or salary job, were not counted as multiple job holders.

(2) Persons whose primary job was as an unpaid family worker were counted as multiple jobholders only if they also held a wage or salary job.

SOURCE: U.S Department of Labor

Implications

As structural changes led to larger farms, making them the dominant force, capital requirements made it increasingly difficult for farm operators to finance their entire farms. It is harder for new operators to begin farming, even if they rent the land and require only non-real estate investments.

Owner-operators expanding their farms must turn to outside capital through farm tenancy or increased debt. To remain financially solvent, many farmers must rely on off-farm income. In fact, some lending institutions are unofficially requiring off-farm income as loan security.

Because of the complexity and size of financing farm operations, increased financial expertise is becoming necessary. Many farmers must use outside experts which adds even more to their costs.

Issues:

--Have the price of land and nonland resources made it noneconomical to use the land for farming? Should the Government take action to relieve these pressures?

--With soaring capital requirements, what are the risks involved in maintaining an agricultural lending network which does not reach all of the farmers who need financial assistance?

--Is off-farm income becoming an economic necessity for farmers? How should this effect future decisions on farm programs?

## CHAPTER VI

## LARGE FAPMS HAVE BECOME THE

## DOMINANT FORCE IN AGRICULTURE

As production costs rose and farm commodity prices stabilized or dropped, farmers had to expand their land bases to maintain their relative economic status.

Finding economic pressures too great, many farmers left the land. Others nearing retirement age, also sold their farms. Mandated by the changing times, technological advances allowed neighboring farmers to consolidate the additional land into more economical units.

A few aggressive, successful farmers have managed to dominate agricultural sales, with the top 2 percent of the farms in 1974 accounting for nearly 37 percent of all sales. These few significant farms have annual sales of $200,000 per year and above. Although there are still many traditional family farms, they are having a decreasing influence on agriculture as a whole.

### The fight for economic survival has left fewer farms which are larger in size

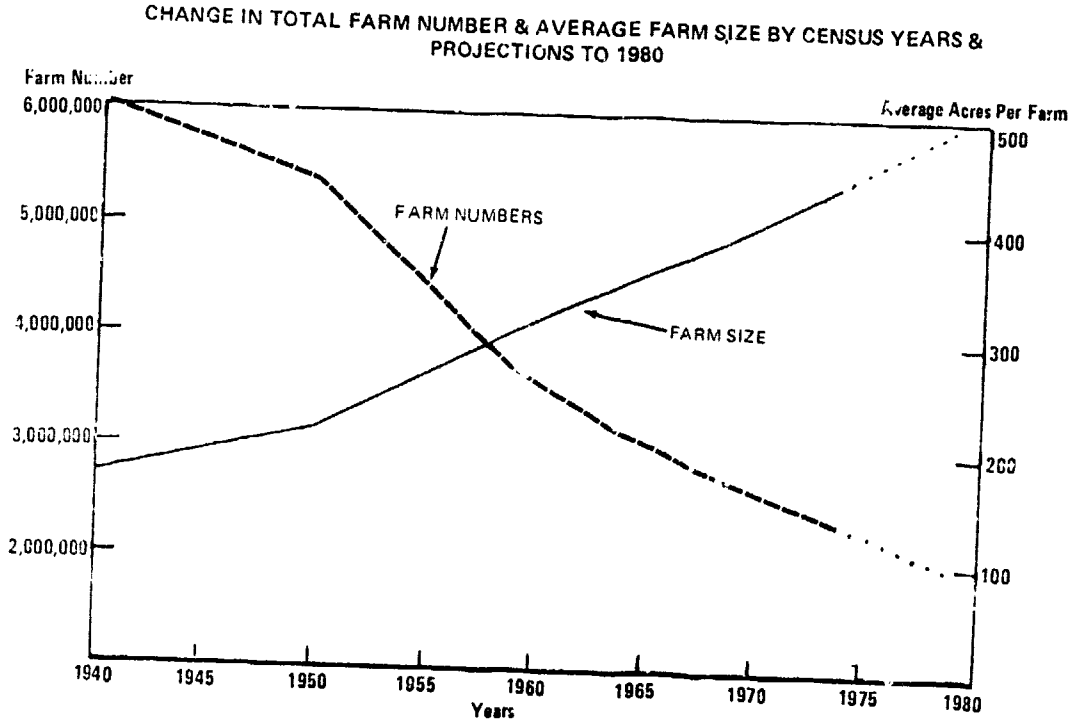
With the cost/price squeeze forcing farmers to expand their productive units, the average farm acreage has escalated. Aggressive farmers have bought out their neignbors, resulting in a sharp decline in the total number of farms. In the last 25 years, the number of farms was cut almost in half. Since 1960 alone, a 30 percent drop has been recorded.

Agriculture Department statistics show a steady decline in the number of farms since the mid 1930s. The farm count reached a high in 1935 with 6.8 million farms. By 1950, this figure had dropped to 5.7 million, and 10 years later it was down to nearly 4 million. Recent 1974 Census statistics released in December 1977, show the number of farms to be 2.34 million.

This figure is almost a half million less than the Department of Agriculture had been projecting for 1977. Past trends had projected that by 1980 the farm population would be under 2 million. However, given the fact that statistics indicate that farms had been going out of business at the rate of 2,000 per week since 1950, it is very likely that as of 1978 the United States is already well under the 2 million farm mark. The most recent indicators show the trend is continuing, but at a slower rate.

As the number of farms declined, farmers who remained have increased their farm size. In 1940, the average farm size was well under 200 acres; by 1950, this had grown to 216. In 1960, farms averaged 303 acres; 1970, 389 acres; and by 1974, it was 440 acres (534 acres if considering only commercial farms). Chart 9 shows the dramatic change in the number of farms and the average change in farm size.

Chart 9




## Large farms require more hired labor

Use of hired workers on farms has become more significant. Although family workers still are the mainstay of agriculture, many farms are now requiring more outside laborers. In 1959, total commercial farms expenditures for hired workers were $2.5 billion. In 1969, this figure increased to $3.3 billion, and by 1974, it had reached $4.5 billion. Farms reporting hired labor expenditures have increased slightly from 48 percent of all farms in 1959 to 50 percent in 1974.

Farms hiring outside labor are important to agricultural production. In 1974, they accounted for about 70 percent of the annual value of field crops, over 85 percent of fruits and vegetables, and about 60 percent of the annual value of livestock and livestock products. Most field crop farms hired less than 1.5 man-years of labor (often considered the cut-off point for a "family" farm), while most fruit and vegetable farms hired more than 1.5 man-years.

The significance of full-time workers has risen in importance recently. Workers employed for 6 months or more numbered about 650,000 in 1974. This figure is the same as for 1964 but it reflects an increase of 150,000 from 1971, when a general decline was in force.

Short-time seasonal workers, those employed less than 3 months, constitute about two-thirds of the work force, a percentage which has been constant the last 10 years. The total number of persons hired for farm work has fluctuated between 2.5 and 2.7 million since 1970 reaching an estimated 2.8 million in 1976. They fill about 1.1 million full-time job equivalents. Three out of five workers were 14-24 years old; three out of four were male. Most were white--75 percent, 11 percent Hispanic and 14 percent other minorities.

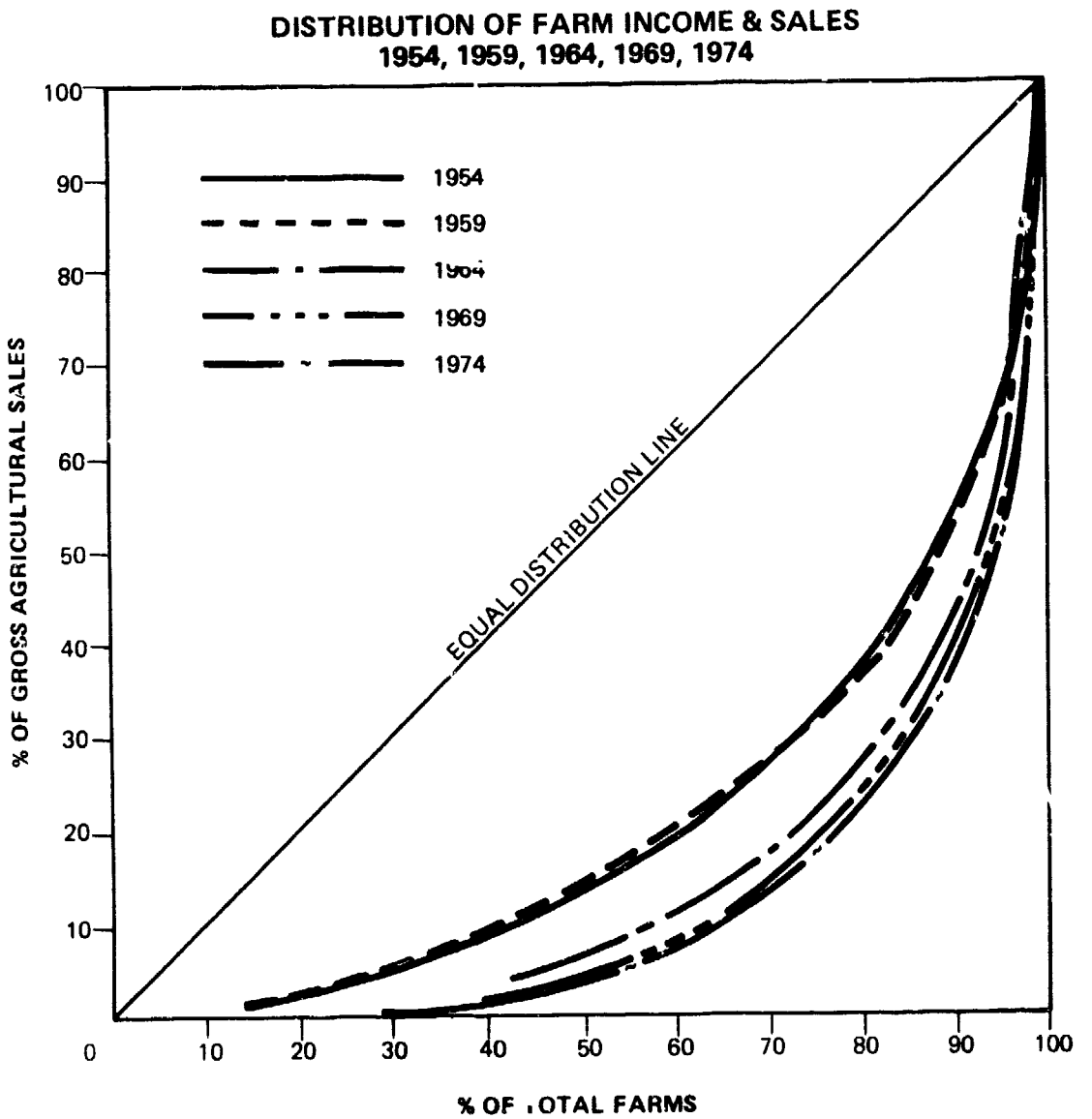
From 1968 to 1973, the man-days of work done by hired workers increased some 9.4 percent. Most of this increase was in work done by long-term employees, with those working 150 days or more increasing their contribution to total farm work from 66 to 70 percent of the total. Meanwhile, the percentage of work done by short-term workers decreased.

## Top 20 percent of farms control 80 percent of sales

As dramatic as the farm size statistics are, the concentration of agricultural sales is even more startling. The smallest 50 percent of the farms have less than 5 percent of the sales, while at the other end of the size spectrum the situation is almost reversed, the largest 5 percent grabbing nearly 50 percent of the market.

The concentration of sales at the largest end of the farm size scale is illustrated. Chart 10 shows the cumulative percentage relationship between gross agricultural sales and farm size for Census years 1954 through 1974. The 45 degree line represents complete equality. Ten pecent of the farms have 10 percent of the sales, etc. The complete inequality line would be a vertical line at the far right of the table.

Chart 10


DISTRIBUTION OF FARM INCOME & SALES
1954, 1959, 1964, 1969, 1974
1954
1959
1964
1969
1974
EQUAL DISTRIBUTION LINE
% OF GROSS AGRICULTURAL SALES
% OF TOTAL FARMS
0
10
20
30
40
50
60
70
80
90
100

The horizontal axis on the graph indicates farm size and the vertical axis represents percent of gross agricultural sales. The point on the curve above the 90 percent mark on the size axis, on the far right, indicates the portion of sales accounted for by the largest 10 percent of the farms. Following that point on the curve across to the vertical line, the largest 10 percent of all farms in 1974 had nearly 60 percent of gross sales. The converse, of course, is that the smallest 90 percent of all farms took in only 40 percent of gross sales.

The movement of the curve generally downward and to the right indicates a more progressive skewed sales distribution. Over the 20-year period from 1954 through 1974, the bottom 80 percent of the farmers lost nearly half of their marketing presence.

The graph clearly shows that fewer farms are capturing more of the market. The largest 20 percent now have 80 percent of the sales, while back in the 1950s they had only 40 percent of the sales.

The graph also indicates, however, that the control of a high percentage of sales by a few large farms is not a recent development. Between 1954 and 1964, the largest 4 percent of the farms were responsible for 35 percent of all sales. The distribution was similar in 1974, when 2.1 percent of the farms controlled approximately the same proportion of the market, 37 percent.

The tremendous growth in farm products values has changed, however, as indicated by table 14 below. Thus, the top 4 percent of the farms in 1954, capturing approximately one third of the sales, could be classified in the range of sales of $25,000 or more. In 1974, the top 2 percent of the farms, also having nearly one third of the market, were in the range of $200,000 or more in annual sales.

Table 14

Volume of Products Sold by Largest Farms

| Census year | Percent of largest farms | Percent of sales captured | Value of farm products sold |
|---|---|---|---|
| 1954 | 4.0 | 32.0 | $ 25,000 or more |
| 1959 | 4.2 | 32.8 | 40,000 or more |
| 1964 | 4.0 | 38.0 | 40,000 or more |
| 1969 | 2.0 | 34.0 | 100,000 or more |
| 1974 | 2.1 | 37.0 | 200,000 or more |

Source: Agricultural Census data

In effect, the distribution of sales has become much more skewed in recent years, making the spread between the largest and smallest farmer considerably greater. The largest farms in 1974 had to sell products valued at 800 percent more than their 1954 counterparts. Inflation accounted for only a part of this rise, because the wholesale price index for farm commodities over a similar timespan increased less than 100 percent. The only reason the top 2 percent of the farmers have not captured an even larger market percentage during the past 25 years is the stiff competition to expand among the entire top 20 percent of all farmers.

The growth stylistic trend has definitely been toward larger, more concentrated farms, with farmers in the sales range of $40,000 to $99,999--almost doubling since 1969--and farms in the $100,000-and-above range, growing at nearly twice that rate.

About 80 percent of today's farmers are in the contracting sector of American agriculture--those with sales under $40,000 annually. The total number of these farmers has sharply declined.

For example, there were about 550,000 farms selling between $2,500 and $9,999 in 1974--a drop of almost 200,000 farms since 1969. Farms selling between $10,000 and $39,999 also decreased over 100,000 in number. Although many of these farmers probably graduated into higher sales categories, many obviously left farming, considering the substantial drop in the total number of farms.

Table 15 summarizes some of the primary structural characteristics by farm size as defined by sales categories.

The table gives some insight into the makeup of the most powerful farms. According to the table, the top 6.6 percent of all farms, those with sales of $100,000 and over, are composed of 10 percent corporations, 18 percent partnerships, and 71 percent individuals. Collectively, they represent 54 percent of total farms sales and 27 percent of all farmland. Corporations control 25 percent of the acreage, while partnerships and individuals control 20 and 54.5 percent, respectively. (See p. 109 of ch. VIII.)

Because these large farms control such a high percentage of total production, more information on these farmers is needed. Table 16 shows our Nation's top farms by organizational structure, principal type of farming enterprise, and total value of production by each sales category.

TABLE 15

Farm Structural Characteristics (1974 Census Data)

| Farm Size by Sales Category / Farm Structural Indicators | Farms: All Farms, % by Sales Category | Farms: Commercial Farms, % by Sales Category | Farms: Organizational Structure % within each Sales Category | | | Sales: Total Sales % by Sales Category | Land: Total Acres % by Sales Category | Land: Acres by Organizational Structure % within each Sales Category | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Corporations | Partnerships | Individuals | | | Corporations | Partnerships | Individuals |
| 500,000+ | .5 | .7 | 41.6 | 81.3 | 37.1 | 36.8 | 5.2 | 51.7 | 20.6 | 27 7 |
| 200,000-499,999 | 1.6 | 2.4 | 14.7 | 21.5 | 63.8 | | 8.9 | 25.8 | 22.8 | 51.4 |
| 100,000-199,999 | 4.5 | 6.0 | 5.2 | 16.7 | 78.1 | 17.0 | 12.8 | 15.0 | 19.0 | 66 . |
| 100,000+ (Total) | 6.6 | 9.1 | 10.4 | 18.3 | 71.3 | 53.8 | 26.9 | 25.3 | 20.2 | 54.5 |
| 40,000-99,999 | 14.0 | 19.1 | 1.7 | 11.5 | 86.8 | 24.7 | 24.1 | 7.4 | 14.0 | 78.6 |
| 20,000-39,999 | 13.9 | 19.0 | .8 | 8.6 | 90.5 | 11.4 | 15.7 | 2.8 | 10.2 | 87.0 |
| 10,000-19,999 | 13.4 | 18.3 | .6 | 7.4 | 92.0 | 5.5 | 10.0 | 1.8 | 8.8 | 89.4 |
| 5,000-9,999 | 12.8 | 17.5 | .4 | 5.8 | 93.7 | 2.6 | 6.4 | 1.5 | 7.0 | 91.5 |
| 2,500-4,999 | 12.5 | 17.1 | .4 | 4.3 | 95.3 | 1.2 | 5.2 | 1.8 | 5.2 | 93.0 |
| Less Than 2,500 | 26.9 | - | - | - | - | .9 | 11.7 | - | - | - |
| Average Farm Sales-$35,234 | - | - | 1.7 | 8.6 | 89.7 | - | - | 10.8 | 13.8 | 75.4 |
| Total All Farms | 100.0 | 100.0 | | 100.0 | | 100.0 | 100.0 | | 100.0 | |

*Commercial Farms = Farms with Annual Sales of $2500 or above

Source: 1974 Census of Agriculture

TABLE 16

SUMMARY OF SELECTED ITEMS--FARMS WITH SALES OF $100,000 AND OVER: 1974

| FARMS WITH SALES OF $100,000 AND OVER | $100,000 AND OVER, TOTAL | $100,000 TO $199,999 | $200,000 TO $299,999 | $300,000 TO $499,999 | $500,000 TO $699,999 | $700,000 TO $999,999 | $1,000,000 TO $4,999,999 | $5,000,000 TO $9,999,999 | $10,000,000 AND OVER |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER OF FARMS | 152,599 | 101,153 | 25,091 | 14,943 | 4,660 | 2,711 | 3,486 | 315 | 240 |
| TYPE OF ORGANIZATION | | | | | | | | | |
| INDIV OR FAMILY...FARMS.. | 108,463 | 78,827 | 16,867 | 9,580 | 2,217 | 1,039 | 895 | 36 | 11 |
| ACRES.. | 44,310,799 | 86,256,312 | 27,978,212 | 18,428,466 | 5,729,459 | 4,662,557 | 4,356,493 | 96,441 | 72,811 |
| PARTNERSHIP.....FARMS.. | 27,811 | 16,843 | 5,203 | 3,352 | 1,077 | 623 | 663 | 33 | 12 |
| ACRES.. | 56,458,393 | 24,661,422 | 11,601,511 | 9,211,616 | 4,137,660 | 2,507,608 | 3,843,250 | 245,347 | 229,979 |
| CORPORATION.....FARMS.. | 15,787 | 5,226 | 2,919 | 2,931 | 1,334 | 1,035 | 1,884 | 238 | 213 |
| ACRES.. | 69,731,883 | 19,712,306 | 10,632,529 | 8,358,052 | 5,117,412 | 4,9[illegible],354 | 13,687,887 | 1,25[illegible],465 | [illegible],807,827 |
| OTHER.....FARMS.. | 538 | 257 | 95 | 75 | 32 | 23 | 44 | 8 | 4 |
| ACRES.. | 3,116,258 | 802,339 | 532,094 | 598,109 | 283,183 | 104,304 | 756,335 | 38,145 | 1,749 |
| SIC | | | | | | | | | |
| CASH GRAIN FARMS..... | 50,953 | 38,909 | 7,879 | 3,745 | 470 | 318 | 223 | 4 | 5 |
| COTTON FARMS..... | 4,255 | 2,397 | 858 | 585 | 187 | 137 | 88 | 6 | 3 |
| TOBACCO FARMS..... | 1,562 | 1,281 | 162 | 78 | 24 | 15 | 6 | 0 | 1 |
| FIELD CROP FARMS..... | 11,142 | 5,907 | 2,165 | 1,683 | 605 | 323 | 418 | 26 | 15 |
| VEG AND MELON FARMS..... | 3,306 | 1,355 | 581 | 534 | 261 | 191 | 349 | 25 | 10 |
| FRUIT & TREE NUT FARMS.... | 5,442 | 3,094 | 937 | 652 | 286 | 203 | 251 | 16 | 3 |
| HORTICULTURE SPEC FARMS.... | 3,328 | 1,610 | 693 | 475 | 213 | 121 | 247 | 7 | 2 |
| [illegible] CROP FARMS..... | 3,855 | 2,440 | 648 | 423 | 146 | 73 | 96 | 4 | 5 |
| NON DAIRY LIVESTOCK FARMS. | 34,769 | 22,170 | 5,902 | 3,630 | 1,100 | 653 | 953 | 181 | 180 |
| DAIRY FARMS..... | 15,783 | 11,665 | 2,089 | 1,170 | 409 | 228 | 220 | 5 | 2 |
| POULTRY AND EGG FARMS..... | 16,287 | 9,916 | 2,938 | 1,781 | 602 | 395 | 491 | 41 | 13 |
| ANIMAL SPECIALTY FARMS.... | 631 | 374 | 111 | 77 | 33 | 14 | 24 | 0 | 1 |
| GENERAL LIVESTOCK FARMS... | 989 | 739 | 133 | 79 | 26 | 7 | 5 | 0 | 0 |
| OTHER..... | 287 | 196 | 51 | 31 | 4 | 3 | 2 | 0 | 0 |
| MARKET VAL OF PROD FARMS.. | 152,599 | 101,153 | 25,091 | 14,943 | 4,660 | 2,711 | 3,486 | 315 | 240 |
| $1,000 | 43,699,426 | 13,758,044 | 6,014,800 | 5,621,387 | 2,712,564 | 2,229,618 | 6,521,333 | 2,136,296 | 4,705,385 |

SOURCE: UNPUBLISHED U.S. CENSUS DATA, 1974

According to the table, of the 4,040 farms that sold $1 million and over of agricultural products, 58 percent were corporations, 18 percent were partnerships, and 23 percent were sole proprietorships. Two-thirds of this farm acreage is held by corporations. Individuals and partnerships have the remaining one-third equally. These high-income farms accounted for $13.3 billion in agricultural sales--31 percent of the total market value of all the Nation's farms with sales of $100,000 or greater. This means that this minute fraction of the Nation's farms (less than .2 percent) accounted for over 8 percent of the total volume of agricultural sales.

According to the Standard Industrial Classification or SIC (which provides only a general indicator of farms enterprise importance), the largest number of farms selling $1 million or more are nondairy livestock farms. The next largest number were poultry and egg farms, then field crop farms.

Land Distribution is not the primary determinant of sales

It is obvious that the distribution of land is more equitable than that of sales. In other words, land does not seem to be the constraining factor of the declining farm sector (those 80 percent of the farms which have only 20 percent of the sales). These lower income farms control nearly half of all farmland resources. The largest 2.1 percent of the farms have nearly 37 percent of sales, but only 14 percent of the land. The increased capitalization of land and nonland resources by America's largest farmers is a primary reason why over one-third of the total sales can be produced on less than one-seventh of the land. The growth of factory-type production techniques of confinement feeding in addition to intensive greenhouse production are also examples of such small acreage farms which generate large volumes of sales.

Chart II is a Lorenz curve illustrating the distribution of sales and acres by farm size.

Chart 11

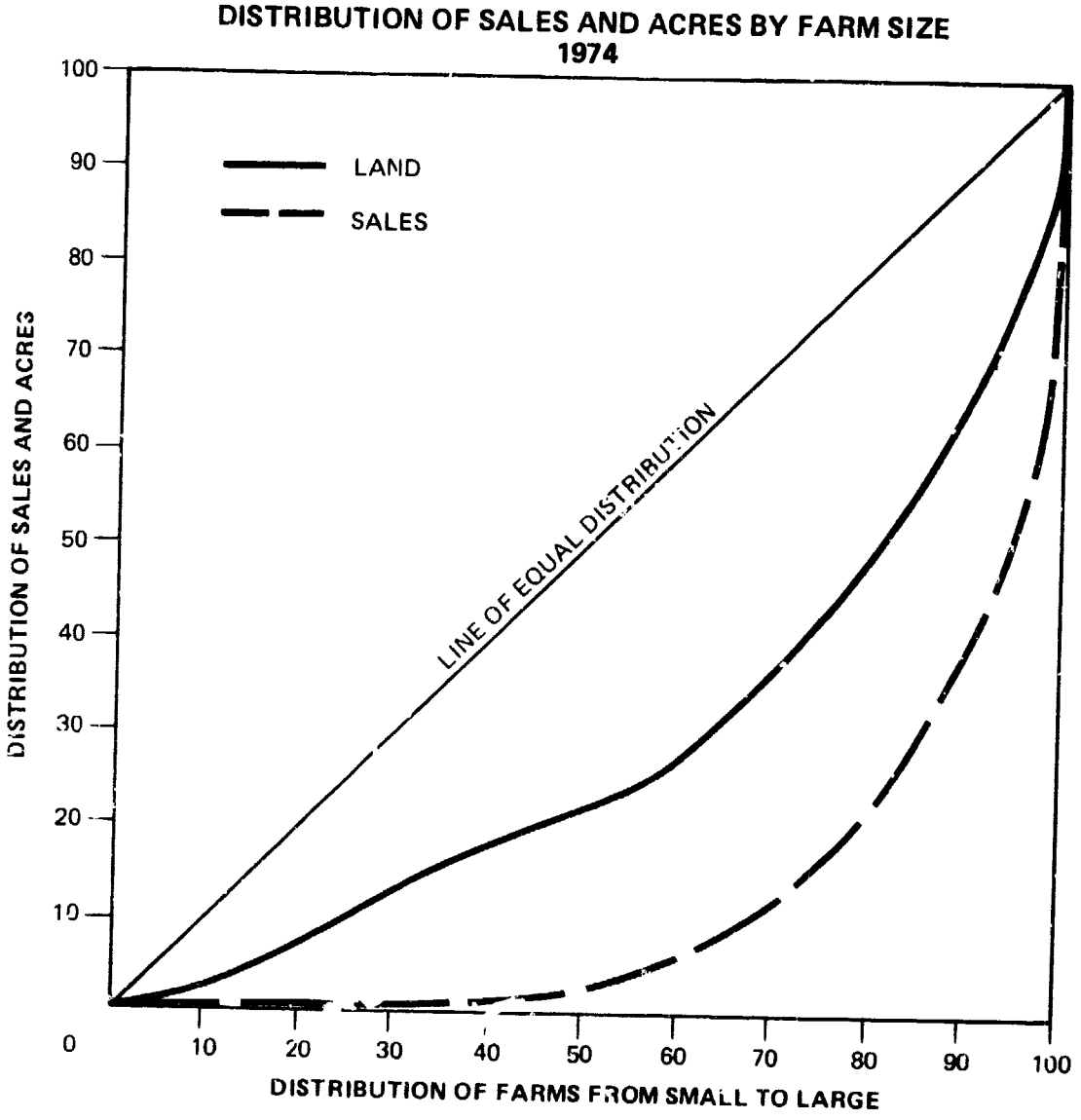

DISTRIBUTION OF SALES AND ACRES BY FARM SIZE
1974
LAND
SALES
LINE OF EQUAL DISTRIBUTION
DISTRIBUTION OF SALES AND ACRES
DISTRIBUTION OF FARMS FROM SMALL TO LARGE
0
10
20
30
40
50
60
70
80
90
100

Table 17 further illustrates that volume sales for large farms are not limited to large acreage.

Table 17

Acreage of Farms with Sales of $100,000 & Over, 1974

| Farms with sales of $100,000 & over | $100,000 & over | 100,000 to 199,000 | 200,000 to 299,999 | 300,000 to 499,999 | 500,000 to 699,999 | 700,000 to 999,999 | 1,000,000 to 4,999,999 | 5,000,000 to 9,999,999 | 10,000,000 & over |
|---|---|---|---|---|---|---|---|---|---|
| No. of Farms | 152,599 | 101,153 | 25,091 | 14,943 | 4,660 | 2,711 | 3,486 | 315 | 240 |
| Farm Size (acres) | | | | | | | | | |
| 1 to 9 | 3,629 | 2,300 | 669 | 378 | 116 | 56 | 103 | 1 | 1 |
| 10 to 49 | 6,252 | 3,559 | 1,077 | 831 | 305 | 198 | 263 | 14 | 5 |
| 50 to 69 | 2,076 | 1,355 | 305 | 178 | 92 | 44 | 95 | 3 | 4 |
| 70 to 99 | 3,139 | 2,185 | 427 | 250 | 91 | 72 | 97 | 13 | 4 |
| 100 to 139 | 3,531 | 2,472 | 534 | 244 | 96 | 58 | 99 | 19 | 9 |
| 140 to 179 | 3,823 | 2,689 | 563 | 288 | 97 | 51 | 91 | 21 | 14 |
| 180 to 219 | 3,426 | 2,482 | 435 | 275 | 73 | 36 | 60 | 6 | 9 |
| 220 to 259 | 3,535 | 3,001 | 528 | 270 | 69 | 32 | 60 | 8 | 17 |
| 260 to 499 | 27,862 | 22,081 | 3,307 | 1,585 | 394 | 199 | 220 | 10 | 36 |
| 500 to 999 | 44,788 | 32,898 | 6,510 | 3,034 | 843 | 447 | 384 | 25 | 47 |
| 1,000 to 1,999 | 27,921 | 15,510 | 6,317 | 3,851 | 1,049 | 589 | 557 | 30 | 18 |
| 2,000 and over | 22,767 | 10,612 | 4,369 | 3,759 | 1,435 | 929 | 1,452 | 135 | 76 |

Source: Unpublished 1974 Census information.

The quality of the land and developmental capital available may be equally significant to the amount of land farmers have. The Federal Government does have a limited assistance program which helps share the costs on many land improvement and soil conservation projects, such as tile draining wet lands, stream and bank erosion control, establishment of permanent ground cover, grassing water drainage areas, and development of water catchment ponds. Many of these projects improve land productivity by conserving soil resources and minimizing erosion and stream pollution. The Federal moneys are available through a joint program of the Agricultural Stabilization and Conservation Service (ASCS) and the Soil Conservation Service (SCS).

Recent efforts, however, have curtailed expenditures in this program, which was already subject to limited funding. While the agencies had the authority to cost share up to 75 percent of the expense of such projects, an annual limit of $2,500 per farm has been in effect almost since the program began in the post-World War II years.

Farmers in many States told our field interviewers that given the cost today of these types of projects, this limitation is unrealistically low. In fact one farmer in Georgia said that last year's drought forced him to get a Government disaster relief loan for nearly $90,000 at a subsidized rate of 5 percent interest. He felt that he could have avoided making the loan if he had adequate irrigation for his corn crop. In his opinion, ASCS was not adequately funded to provide assistance with needed water development projects.

The Georgia farmer also noted that he felt it would be more advantageous for both the Government and farmers if long-term low-interest loans were available for installation of surface water irrigation equipment than if such loans were only available after disasters.

## Smallest commercial farms in 1974 reversed downward trend

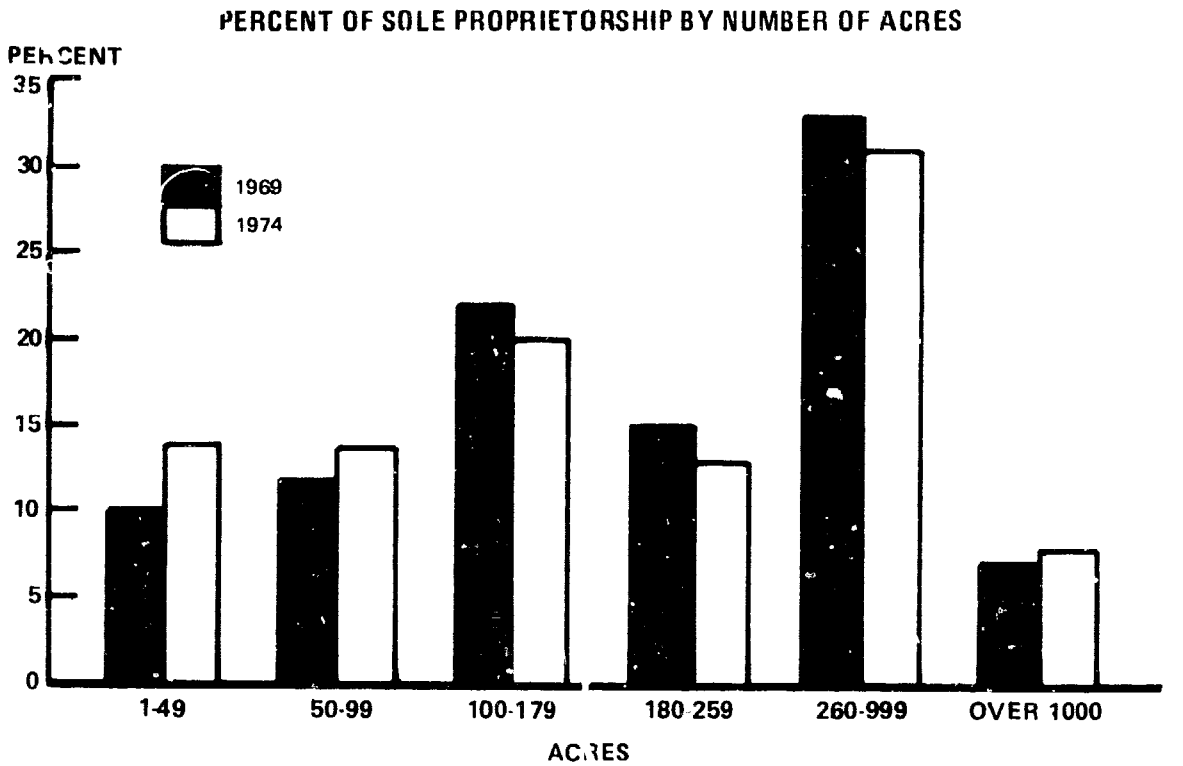
According to 1974 Census information, the exodus of farms has not been limited to farms in the smallest acreage categories. In fact the number of all types of farms except those over 1,000 acres declined. When looking at only commercial farms (farms with sales of at least $2,500 annually), farms having between 50 and 499 acres declined 7.1 percent between 1969 and 1974. Farms with between 500 and 999 acres decreased 2.1 percent. Thus even farmers with substantial acreage have been leaving or expanding.

Types of farms which increased were those with between 1,000 and 1,999 acres and those having 2,000 acres and over, which increased by 3.2 and 4.4 percent, respectively.

Analysis of the 1974 Census shows an interesting growth pattern for the smallest farms, those under 50 acres. Although the total number of these farms dropped by 125,000, the number of very small commercial farms in 1974 increased almost 25 percent over the previous Census year. The total number of commercial farms with 50 acres or less was over a quarter of a million in 1974.

To get a better indication of what is happening to small commercial farms, we looked at commercial farms of 100 acres or less which were sole proprietorships (87 percent of commercial farms of this size). These farms were viewed in aggregate terms as well as by selected States. Chart 12 confirms that at the national level, smaller-size commercial farms--those with at least $2,500 in annual sales--have increased.

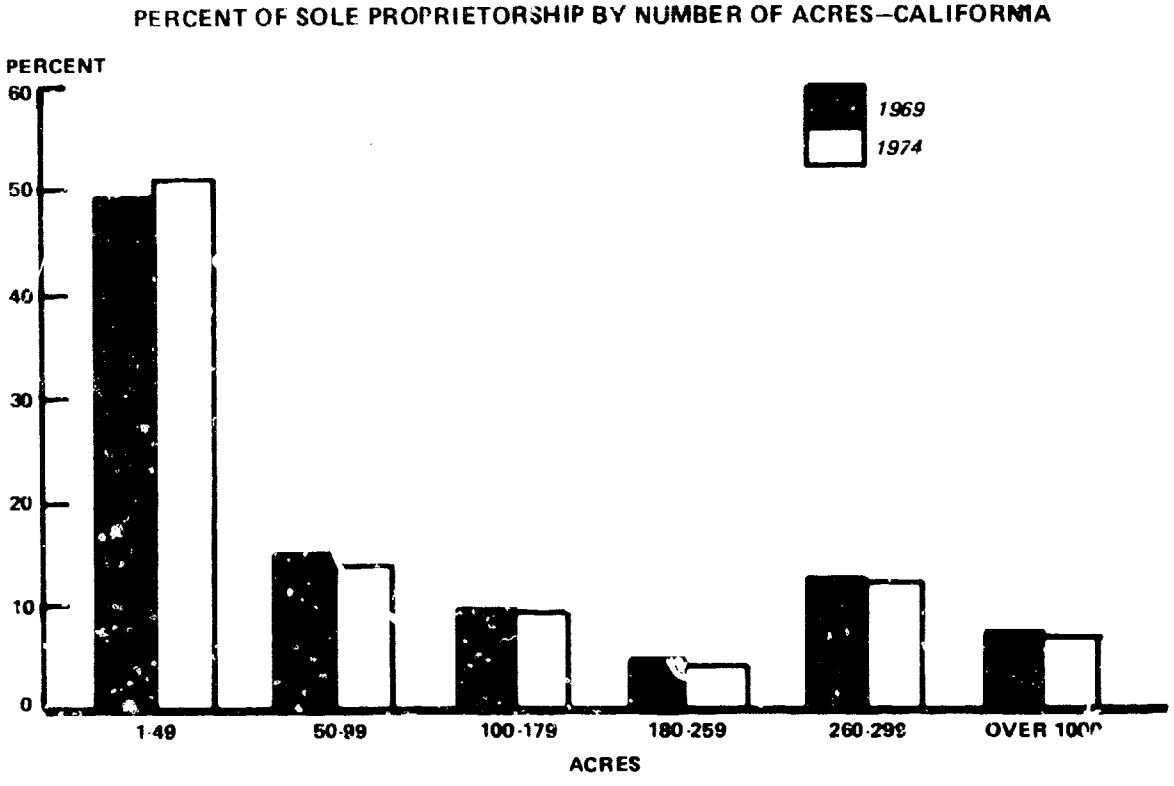
Chart 12




Source: Agricultural Census Data

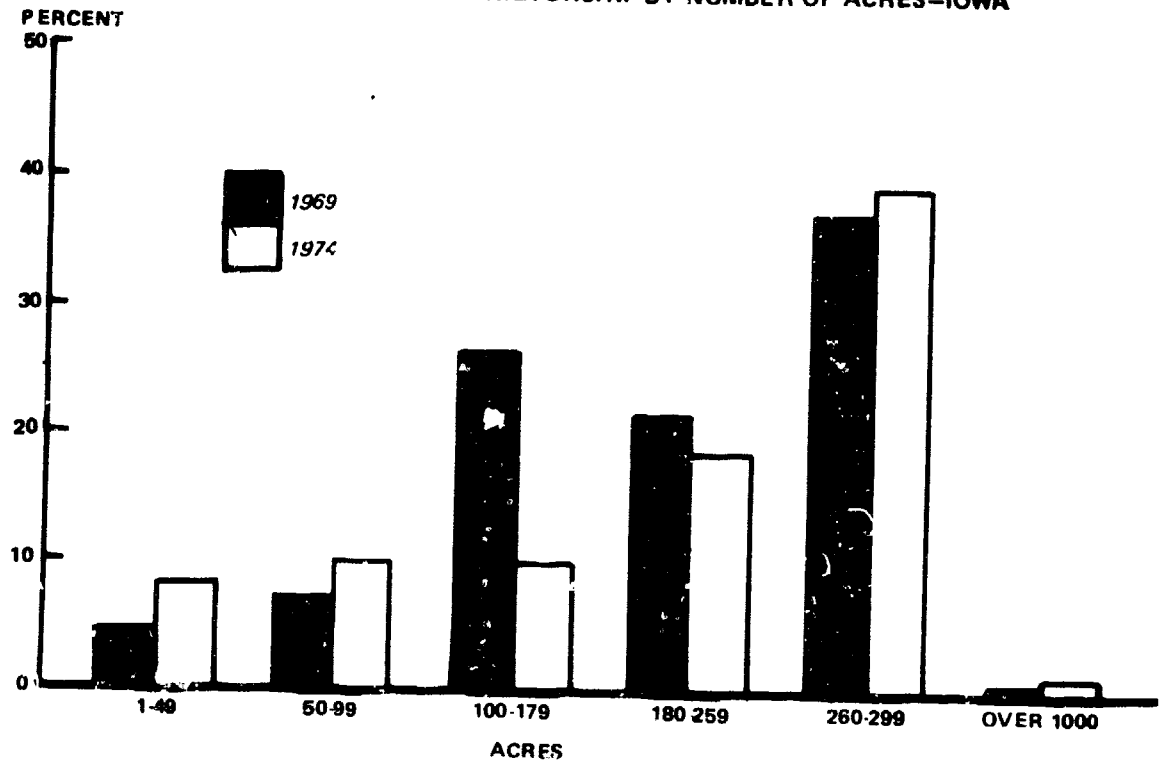
We also analyzed farm growth in six States which were chosen to represent a cross-section of geographic regions and cropping systems. Of six States five showed findings similar to the national trend, with an increase in the number of individually owned, smaller size (100 acres or less), commercial farms between 1969 and 1974. Charts 13-18 show that in the middle category of 100 acres to 299 acres, three States showed an increase and one a decrease.

Chart 13

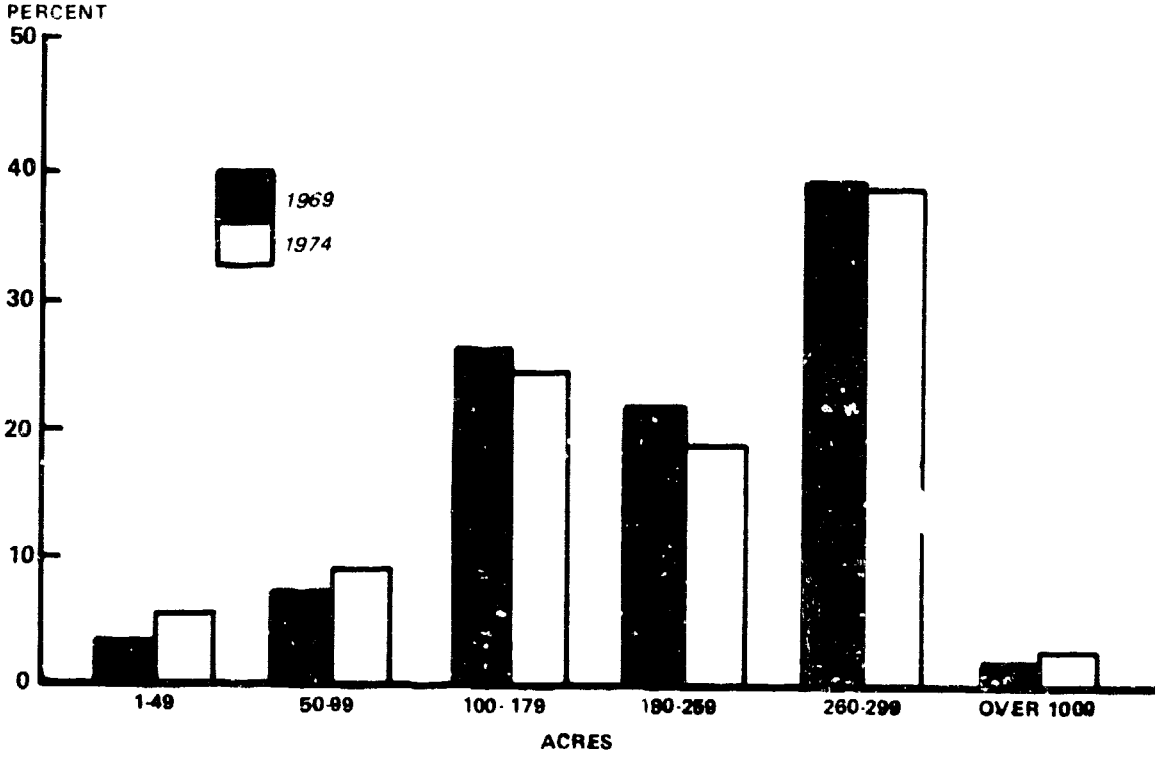


Charts 14 and 15

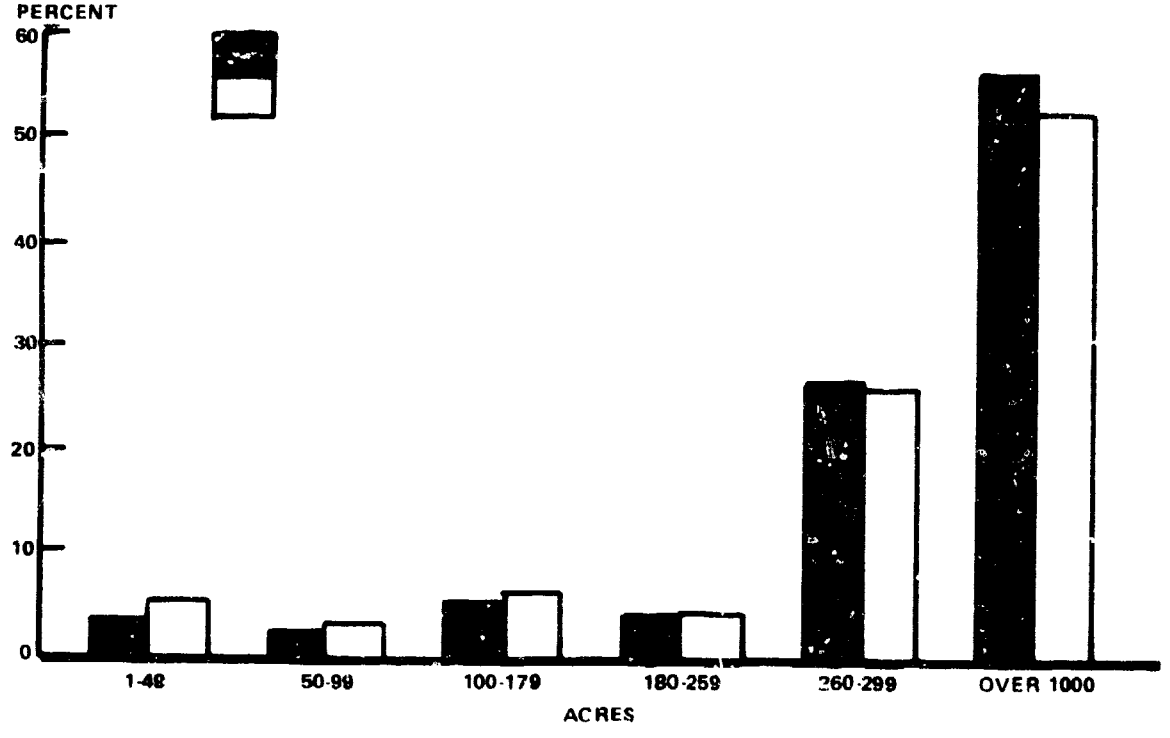
PERCENT OF SOLE PROPRIETORSHIP BY NUMBER OF ACRES—IOWA




PERCENT OF SOLE PROPRIETORSHIP BY NUMBER OF ACRES—MINNESOTA



PERCENT OF SOLE PROPRIETORSHIP BY NUMBER OF ACRES—MONTANA




PERCENT OF SOLE PROPRIETORSHIPS BY NUMBER OF ACRES—NORTH DAKOTA

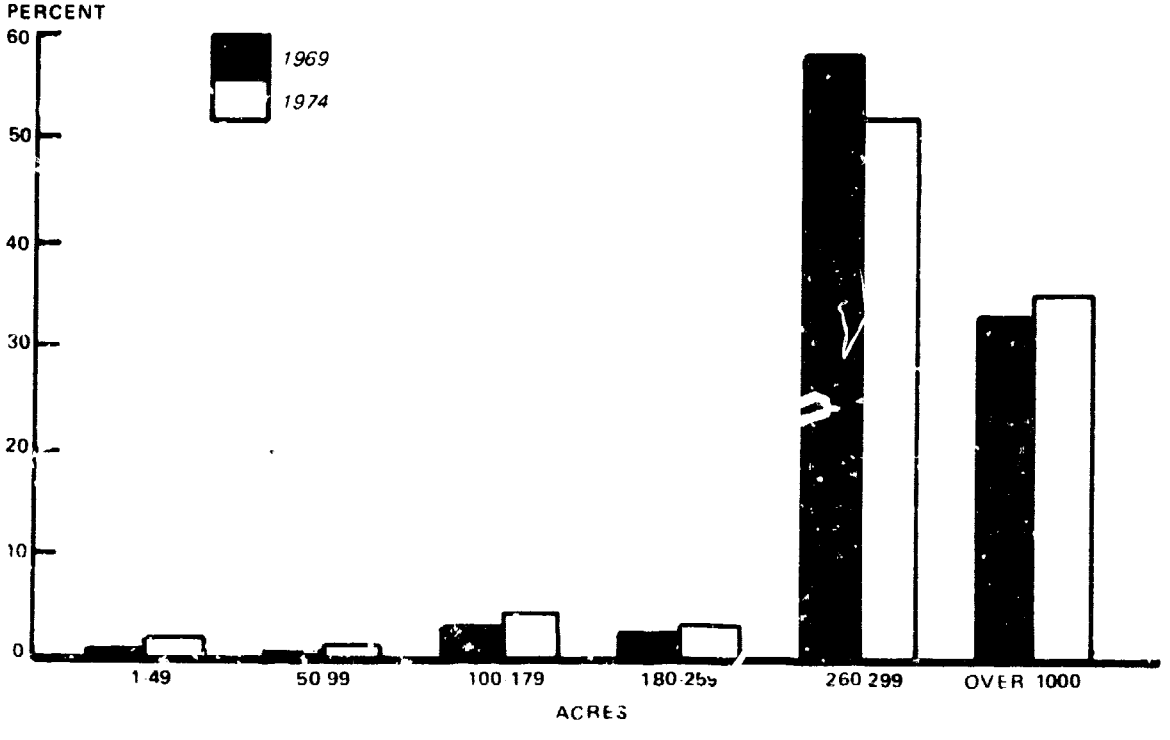
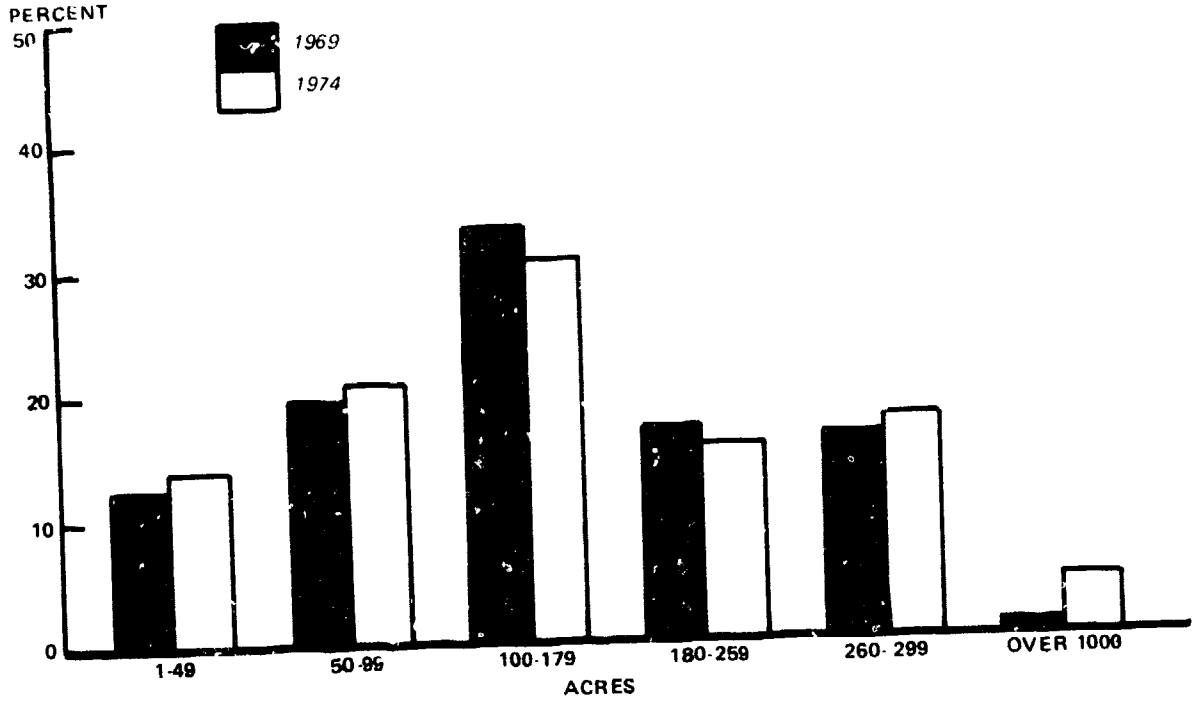


Chart 18

PERCENT OF SOLE PROPRIETORSHIPS BY NUMBER OF ACRES –PENNSYLVANIA



It is difficult to determine the significance of these findings in terms of a recognizable trend. Because the crop year of 1973/74 was agriculture's best, some farmers who had previously sold under $2500 per year may have moved into the higher commercial sales category. Three other explanations, however, are highly probable.

--Commercial farms of this size may have increased because of product specialization and factory-type production. This category would include dry-lot dairies, animal feedlots, and confinement feeding of poultry, which could be grouped in the acreage limitation category.

--The recent reported migration trend back to non-metropolitan areas along with a "back to the land" movement may have caused the small farm revival. Even if used for recreation purposes, it may in fact be providing supplemental income.

--Many small farms, especially on the urban fringe, have proved quite successful without extensive mechanization of their operations. (See p. 34 of ch. III.) Their intensive cultivation and marketing practices allow for a higher return from their limited land resources.

Should the increase in very small commercial farms be a real trend and not just a fluke of the high farm income during the Census year, then the change in agricultural structure has most likely become bimodal. Large farms are expanding and displacing small and middle size. Part-time, hobby, or retirement farmers who do not have to rely on agriculture as their primary income sources will probably be stable or increase as will smaller more labor intensive high value crop farms.

Growth in farm size differs regionally

Our interviews with farmers on various sizes of farms confirmed that economic conditions have generally forced farmers to expand their production volume. This was done through expansion of the farm land base or through purchase of more efficient equipment. More efficient equipment, however, also forced farmers to gain more land to justify the large capital investment in the machinery.

Aside from these similarities, patterns of farm growth have differed regionally due to crop-specific Government programs, as well as other regional factors:

--In the Wheat Belt of the Old West, mechanization and price support legislation based on acreage encouraged farmers to expand their farms to enormous proportions. One farmer asserted that a farm of at least 800 to 1,000 acres is the minimum size needed just to meet financial needs. Farmers holding land of this area size told us that many small farmers were left out of bidding, as nonfarmers bid up the price of land for speculation or recreation purposes.

--We were told that the farms in the Corn Belt had similar size increases, largely because of price support programs. A Nebraska farmer stated that, however, irrigated corn farms there were limited by labor constraints to about 400 to 500 acres.

--Lucrative peanut allotments pushed the value of Georgia land up considerably, a peanut farmer said, resulting in many owners holding their lands for their rental value. Expansion by aggressive farmers in this area was therefore, more frequently through rental, rather than purchases of additional land. Peanut land in one Georgia county rented for as much as $200 to $300 per acre, while adjacent corn land rented for $30 to $60 an acre. In Maryland and Virginia, general farmland reportedly could be rented for $15 to $30.

--Farmers we interviewed said that dairy price-supports have tended to keep the midwest dairy farmers small in size. With some mechanization, dairy farmers could build financially solid operations because of the extensive Government assistance.

Implications

If the present trend continues, fewer farmers will provide more of our total food supply. The average farm size is expected to expand further, and a 25 percent increase is anticipated in the next 10 to 12 years.

Recent trends in agriculture have been changing the control of resources. With large-scale farming consolidation, vertical integration, and injection of outside capital have developed. Farmers have become more specialized, losing some of their flexibility. They are more dependent on hired labor to do the necessary work.

As the size of farms continue to expand, some have begun to wonder whether the concentration of power in the diminishing number of farms is good for the Nation and our national security.

Smaller farmers have considerable staying power during adverse times. Dr. Paul Barkley, Agricultural Economist at Washington State University argues that small farmers have been exploited by the rest of society because their traditional roles have always been that of a kind of shock absorber. Small- to mid-size farmers' variable costs are generally low because they typically do not pay themselves or their families minimum wages and their equity is often high. Relative operating costs are substantially lower than those of the largest farms. (See p. 87 of ch. VII.) Once crops are in and a biological process is started, the costs of continuing the process until harvest are extremely low. This provides an incentive to maintain output even if the product prices fall to disasterously low levels. Although smaller farmers may be suffering financial crises, therefore, they will continue production.

Society has thereby come to depend on the smaller and medium sized farms as an ideal combination of resource control and ability to bounce back from adversity. Although a resilient agriculture does not insure economic stability, it does maintain reasonable food supply stability, which in turn, is closely tied to domestic and international economic policies. Likewise, when comparing the cost of production and return on investments it is these farms that are the most efficient. Analysis of available Internal Revenue Service (IRS) data revealed that when comparing business receipts to cost of sales and operation, the most efficient farms--regardless of organizational structure--were the farms between $10,000 and $49,000 in business receipts.

Issues

--With farm numbers dropping 30 percent since 1960, is control of U.S. agriculture by a relatively small number of farms in the country's best interest?

--Since the U.S. has relied on the resiliency of smaller farmers during adverse economic times, can the country afford a farm structure in which only the largest farms survive?

--Because land itself does not seem to be the major constraint for low-income farmers, while land improvement projects and capital could well be, should the

Government provide more money for land improvement programs through ASCS and SCS, enabling smaller farmers to improve their land and thereby increase their potential productivity and hopefully their income?

--What is the significance of the growth in small commercial farms in terms of analyzing trends in farm structure? Is it possible that resiliency in the farm sector is not being lost but merely transferred to part-time farmers?

## CHAPTER VII

## DEVELOPMENT OF FARMER PROFILES INDICATE THAT FARM INCOMES VARY WIDELY, WITH FARMERS IN DIFFERENT INCOME GROUPS HAVING MARKEDLY DIFFERENT CHARACTERISTICS

Profiles of our interviews show farmers responding differently to many outside pressures, such as worldwide economic conditions or Government regulation. Some farmers sought off-farm employment; some were forced into debt by expansion; some changed their legal organizational structures; and some changed their cropping systems. The result is a farming sector of diverse geographic region, farming enterprise and size of operation.

### While "family" farms dominate farm numbers, structural characteristics are far from homogeneous

There are many definitions for the "family" farm. One which has become accepted today is a farm "on which the greater part of the labor and decision-making is supplied by the farmer and his family."

Approximately 95 percent of U.S. farmers have family farms, accounting for two-thirds of the Nation's total agricultural output. This presents a comforting picture of families working together on independent farms.

The definition can be deceiving, however. Family farmers can be found in all sales categories and their characteristics differ radically. We decided that today's farmers could be more accurately represented if they were categorized by income levels because farm income is important in determining farmers' relative well-being. Factors such as effective out-reach of Government programs, off-farm income, organizational structure, and farm size appeared to be closely related to income.

The following farm profiles are based on 1974 Census of Agriculture data, published December 1977--the most recent data available. Farms having under $10,000 in sales in 1974 have been termed "part-time/subsistence" farms; "small" farms make up the sales category of between $10,000 and $39,999; "medium" from $40,000 to $99,999; "large" from $100,000 to $200,000; and "largest" are those above $200,000.

Collectively, the group of farmers below $40,000 in annual income are termed the "declining sector" of agriculture,

and farms above $100,000 in annual income are labeled the "expanding sector."

The divisions, however, are not clearly delineated. Many small farms, for example, have shown considerable staying power. (See p. 64 of ch. VI.) In addition the importance of the smaller farms cannot be underestimated. Nearly 80 percent of all farmers fall into either of the lowest farm income categories, which control about half of all farmland and account for slightly over one-fifth of total agricultural sales. That the larger farms account for a substantially higher proportion of farm sales than their numbers would imply is apparent from the farm profiles.

Tables 16-24 summarize some of the most interesting characteristics of today's farms.

- - - -

Note: A separate discussion of minority ownership is not presented because data indicated that the distribution of minority farm operators was substantially similar to that of all farm operators.

Table 18

Percent of Total Farm Operators and Percent of Minority Farm Operators by Farm Size

| | Part-time/ subsistence | Small | Medium | Large | Largest |
|---|---|---|---|---|---|
| Percent of total farm operators in each farm profile | 52.2 | 27.3 | 14.0 | 4.5 | 2.1 |
| Percent of total minority operators in each farm profile | 55.02 | 29.37 | 9.78 | 3.46 | 2.37 |

SOURCE: 1974 Agriculture Census Data

General structural highlights from Table 19 include:

--Approximately 80 percent of the farms in the United States can be considered small or part-time and subsistence farms; they control nearly 50 percent of the farmland resources but receive less than half that percentage in total value of farm sales.

--The top 6.6 percent of the Nation's total farms control nearly 27 percent of the land and have captured nearly 54 percent of the total market receipts.

--The average market value of products sold by America's largest farms is over 100 times the average value of that sold by the Nation's smallest farms.

--Approximately 70 percent of all hired and contract labor expenditures were made by farms marketing $100,000 and above, annually.

--Farms above $200,000 in sales hire only about 7 percent of outside labor but pay over 55 percent of total wages.

# Table 19

U.S. Farm Profiles Based Upon 1974 National Census Data (Published 12/77)
Structural Characteristics By Size Classification

| Size Classification / Profile Characteristics | Declining Sector | | | Expanding Sector | |
|---|---|---|---|---|---|
| | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
| **General Structural Characteristics** | | | | | |
| -No. of Farms[1] | 1,203,034 | 631,782 | 324,310 | 101,153 | 51,446 |
| -Percent of Farms[1] | 52.2 | 27.3 | 14.0 | 4.5 | 2.1 |
| -Ave. Farm Size in Acres | 203 | 416 | 761 | 1299 | 2826 |
| -Percent of Land | 23.3 | 25.7 | 24.1 | 12.8 | 14.1 |
| -Percent of Farm Sales | 4.7 | 16.9 | 24.7 | 17.6 | 36.8 |
| -Average Market Value of Agricultural Products Sold | $ 5,321.00 | $ 21,696.00 | $ 61,890.00 | $136,012.00 | $581,996.00 |
| **Farm Labor** | | | | | |
| --Hired | | | | | |
| -Percent of Farms | 23.37 | 34.29 | 25.57 | 10.29 | 6.47 |
| -Percent of Dollars | 2.60 | 9.11 | 16.57 | 15.54 | 56.17 |
| --Contract | | | | | |
| -Percent of Farms | 26.17 | 32.81 | 22.26 | 10.09 | 8.67 |
| -Percent of Dollars | 4.84 | 11.13 | 14.74 | 12.22 | 57.08 |

[1]These figures represent all farms, not just commercial farms with sales of $2500 and over.

Source: GAO's analysis of Agricultural Census data.

Farm enterprise structure highlights from Table 20 include:

--While the nation's largest farms represent only 2.1 percent of all the farms, their presence in fruit and vegetable production is almost 3 times that figure.

--Small- and medium-sized farms represent slightly over 40 percent of all farms. They account for over 80 percent of all dairy farms and over 60 percent of the general purpose farms and cash grain farms.

Table 20

Farm Type by Size Classification

| Size Classification / Farm Type by Principal Farming Enterprise | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
|---|---|---|---|---|---|
| Percent of Total Cash Grain Farms | 28.44 | 40.59 | 22.19 | 6.55 | 2.23 |
| Percent of Total Livestock Farms, except dairy, poultry, and animal specialty | 48.56 | 31.18 | 13.22 | 4.49 | 2.55 |
| Percent of Total Dairy Farms | 9.57 | 50.60 | 31.77 | 5.95 | 2.10 |
| Percent of Total Vegetable and Fruit Farms | 34.95 | 37.13 | 15.56 | 6.28 | 6.07 |
| Percent of Total General Purpose, primarily crop and livestock | 29.27 | 43.77 | 18.84 | 5.33 | 2.79 |
| Percent of Total Farms | (52.2%) | (27.3%) | (14.0%) | ( 4.4%) | ( 2.1%) |

Source: GAO's Analysis of 1974 Agricultural Census Data

Organizational structure highlights from Table 21 include:

--Aggregate statistics indicate that corporations account for only 1.7 percent of all farms and 10.7 of all acres, but their prevalence significantly increases as farm size grows, and they account for over 20 percent of the nation's largest farms and 35 percent of their acreage. (See p. 109 of ch. VIII.)

--Likewise partnerships represent 13.8 percent of the total acreage and 8.6 percent of the total farms in aggregate yet are nearly four times more prevalent in farms in the largest size category than the farms in the part/time subsistence category.

Table 21

Organizational Structure by Size Classification

| Size Classification / Organizational Structure | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | | "Small" Farms Sales of $10,000-39,999 | | "Medium" Farms Sales of $40,000-99,999 | | "Large" Farms Sales of $100,000-199,999 | | "Largest" Farms Sales of $200,000+ | | Average Farm | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Farms | Acres | Farms | Acres | Farms | Acres | Farms | Acres | Farms | Acres | Farms |
| -Percent of Corporations in each Farm Size | 1.7 | 0.4 | 2.6 | 0.7 | 7.8 | 1.7 | 15.0 | 5.2 | 35.0 | 20.6 | 10.7 | 1.7 |
| -Percent of Partnerships in each Farm Size | 6.9 | 5.0 | 9.8 | 8.0 | 14.0 | 11.4 | 19.0 | 16.7 | 22.2 | 21.4 | 13.8 | 8.6 |
| -Percent of Individual Owners in each Farm Size | 91.4 | 94.5 | 87.6 | 91.2 | 78.6 | 86.8 | 66.0 | 78.1 | 42.8 | 57.9 | 75.4 | 89.5 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

These figures include farms with sales of $2500 and over excluding the "other" farm category.

Source: GAO's analysis of 1974 Agriculture Census Data

Farm operator highlights from Table 22 include:

--While new operators are entering the farm structure at all farm profile levels, young operators in the medium through largest sized range outnumber those over retirement age by nearly 60 percent, indicating the wave of the future.

--The number of farmers at 65 or over drops as farm sales increase.

--Over 90% of all farm operators working off the farm more than half their time (150 days or more) are found in the two smallest farm groups.

Table 22

Farm Operator Characteristics by Size Classification

| Farm Operator Characteristics \ Size Classification | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
|---|---|---|---|---|---|
| Average Age | 54 | 51 | 49 | 48 | 50 |
| No. of Operators -under 35 | 69,916 | 85,004 | 45,195 | 12,203 | 4,203 |
| -over 65 | 146,999 | 93,926 | 27,612 | 7,384 | 3,768 |
| No. of Operators within each Profile 1/ | 1,203,084 | 631,782 | 324,310 | 101,153 | 51,446 |
| -Percent of Total 1/ | 52.2 | 27.3 | 14.0 | 4.5 | 2.1 |
| No. of Operators working off the Farm 150 days or more | 242,108 | 128,164 | 27,193 | 6,325 | 2,594 |
| -Percent of Total | 59.6 | 31.5 | 6.7 | 1.6 | 0.6 |
| -Percent of Operators Within each Profile Working off the Farm 150 days or more | 41.3 | 20.3 | 8.4 | 6.3 | 5.0 |

1/These figures represent all farms, not just commercial farms with sales of $2500 and over.

Source: GAO's analysis of 1974 Agricultural Census Data

Farm assets highlights from Table 23 include:

--Small- and medium-sized farms account for nearly 55 percent of all farm assets in farmland and buildings as well as nearly 60 percent of the total value on machinery and equipment.

--The largest farmers dominate the irrigation picture in terms of size and number. Over half the farms in this category use irrigation. While representing just under 14 percent of all farms with irrigation, they control over 41 percent of the total irrigated acreage.

Table 23

Farm Assets by Size Classification

| Size Classification / Farm Assets | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
|---|---|---|---|---|---|
| Value of Land and Buildings ($1000) | 42,890,300 | 83,287,579 | 85,032,269 | 46,036,345 | 51,643,198 |
| -Percent of Total | 13.9 | 27.0 | 27.5 | 14.9 | 16.7 |
| Value of Machinery and Equipment ($1000) | 5,936,578 | 13,118,032 | 13,144,628 | 6,102,978 | 5,652,474 |
| -Percent of Total | 13.5 | 29.8 | 29.9 | 13.9 | 12.9 |
| Irrigated Land | | | | | |
| -Percent of Total Farms | 20.9 | 32.9 | 23.9 | 11.8 | 14.3 |
| -Percent of Total Acres | 4.4 | 14.9 | 21.4 | 18.3 | 41.1 |
| -Percent of Farms Irrigated in Each Size | 7.2 | 10.6 | 14.9 | 23.7 | 56.0 |
| Grain Storage Facilities | | | | | |
| -Percent of Farms in each Size with | | | | | |
| --None | 59.0 | 34.6 | 24.8 | 27.9 | 17.8 |
| --Less than 5,000 | 38.1 | 44.3 | 24.4 | 13.6 | 11.2 |
| --5,000-24,999 | 2.8 | 20.2 | 43.7 | 36.1 | 20.3 |
| --25,000-49.999 | 0.1 | 0.7 | 5.9 | 16.1 | 13.7 |
| --50,000+ | 0.0 | 0.2 | 1.2 | 6.3 | 16.9 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: GAO's analysis of 1974 Agricultural Census Data

Farm income highlights from Table 24 include:

--Average farm income for the largest farms is nearly 600 times greater than the average farm income of the smallest farms. This difference between the smallest and the largest increased tremendously over the past 20 years.

--Production expenses eat up the highest percent of total sales for the smallest and largest farmers.

--Production expenses still account for over two-thirds of total farm sales for the three farm groups with annual sales between $10,000 and $200,000. This provides the incentive for the expansion of total sales.

--Farm-related income appears to be roughly 10 percent of farm income for medium and larger farmers, while at the smallest level it appears to be almost seven times that of farm income.

--Off-farm family income is lowest for the medium-sized farmers, followed by large and then small farmers. This could indicate that farms marketing between $40,000 and $200,000 are capable of providing sufficient income for families. It also shows that much of family labor is required to run the farm.

# Table 24

**Farm Liabilities and Income by Size Classification**

| Size Classification / Liabilities and Income | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
|---|---|---|---|---|---|
| Farm Liabilities | | | | | |
| Percent of Farms in debt | 29.3 | 39.3 | 51.4 | 57.4 | 59.0 |
| Ave. loan size of those in debt($) | 17,868 | 37,234 | 54,556 | 95,825 | 278,512 |
| Farm Income | | | | | |
| -Value of Farm Sales ($) | 5,321 | 21,696 | 61,890 | 136,012 | 585,692 |
| -Production Expenses ($) | 5,129 | 14,022 | 41,438 | 94,728 | 475,446 |
| -Production Expenses as Percent of Total Farm Sales | (96.4%) | (68.3%) | (67.0%) | (69.6%) | (81.1%) |
| -Ave. Farm Income per Farm ($) | 192 | 6,874 | 20,452 | 41,284 | 110,246 |
| Farm-Related Income (excludes direct farm income) | 1,331 | 2,274 | 2,431 | 3,924 | 12,032 |
| -Percent from Custom Work | (34.8%) | (43.7%) | (48.4%) | (46.0%) | (33.6%) |
| -Percent from Direct Gov't Farm Payments | (14.6%) | (20.1%) | (20.6%) | (18.6%) | (17.5%) |
| Family Off-Farm Income ($) | 10,665 | 8,404 | 6,713 | 8,047 | 13,577 |
| Average Total Income per Farm Family ($) | 12,188 | 17,552 | 29,596 | 53,255 | 135,855 |

Source: GAO's analysis of 1974 Agricultural Census Data

Government payment highlights from Table 25 include:

--In aggregate, only around 10 percent of the Nation's farmers receive Government payments, with amounts ranging from 8.4 percent for those farmers selling less than $10,000 in agricultural products to a high of nearly 13 percent for the Nation's largest farms. (See p. 119 in ch. IX.)

--The coverage amount of payment by farm class for those receiving payments also increases with size from a low of $765 for the smallest farms to over $6,640 for the largest farms.

Table 25

Government Payments by Size Classification

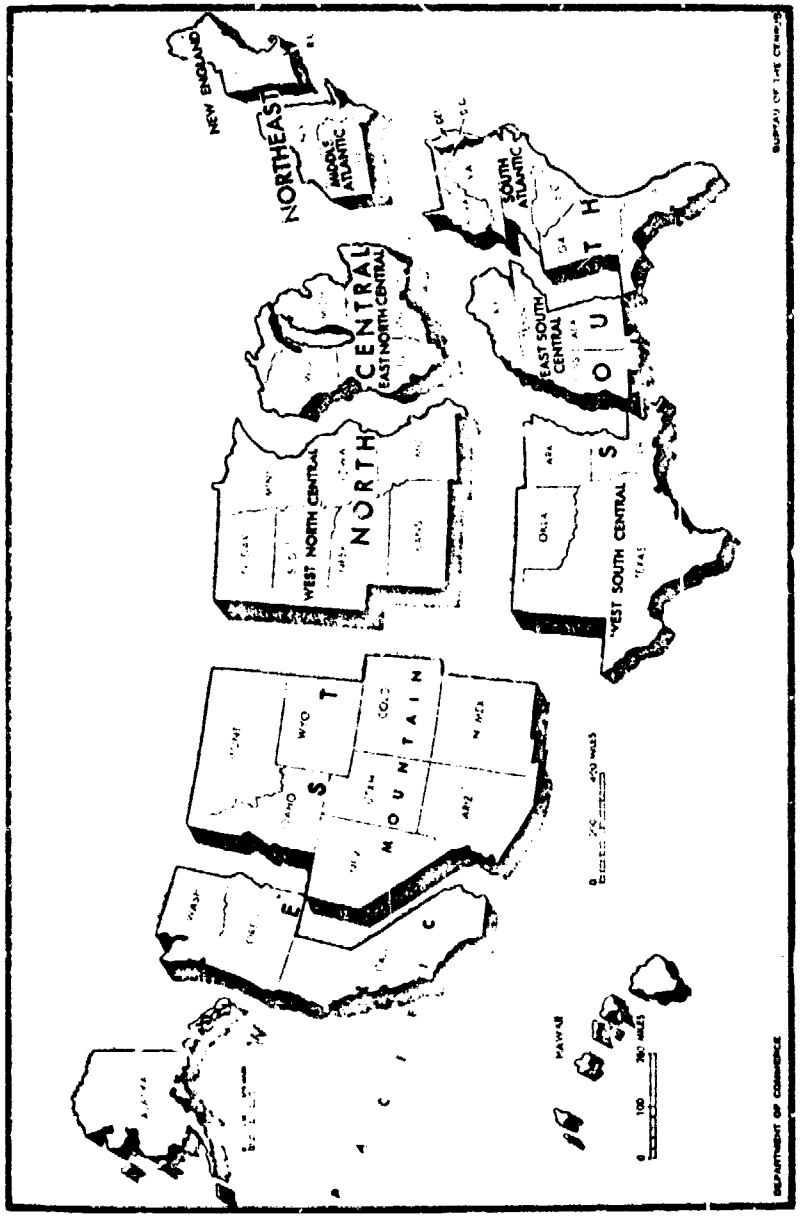
| Size Classification / Government Payments | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
|---|---|---|---|---|---|
| Government Payments | | | | | |
| -Total Farms in each Category | 586,356 | 631,782 | 324,310 | 101,153 | 51,446 |
| -Farms receiving gov't payments | 49,382 | 68,839 | 40,691 | 12,832 | 6,661 |
| -Percent of Farms Within each size that receive gov't payments | 8.4 | 10.9 | 12.6 | 12.7 | 13.0 |
| -Total Amount of Payments to each Farm Size ($1000) | 37,788.00 | 84,037.00 | 68,245.00 | 31,555.00 | 44,272.00 |
| -Percent of Total Payments received by each farm size | 14.2 | 31.6 | 25.7 | 11.9 | 16.6 |
| -Ave. Payment of those receiving Payments ($) | 765.00 | 1,220.00 | 1,677.00 | 2,459.00 | 6,646.00 |

Source: GAO's analysis of 1974 Agriculture Census Data

Regional highlights from Table 26 include:

--More small farms are found in the South, which has about half that percentage of farms from the other income categories.

--Forty-four percent of all farms are located in the North Central region, where over 45 percent of farms above $100,000 in annual sales are found.




REGIONS AND GEOGRAPHIC DIVISIONS OF THE UNITED STATES

Table 26

Regional Distribution by Size Classification

| Size Classification / Regional Distribution of Farms | "Part-time and Subsistence" Farms Sales of Less Than $10,000 | "Small" Farms Sales of $10,000-39,999 | "Medium" Farms Sales of $40,000-99,999 | "Large" Farms Sales of $100,000-199,999 | "Largest" Farms Sales of $200,000+ |
|---|---|---|---|---|---|
| -Northeast | 5.0 | 5.6 | 6.8 | 5.2* | * |
| -North Central | 32.8 | 57.0 | 59.5 | 45.4* | * |
| -South | 52.8 | 27.8 | 22.6 | 29.9* | * |
| -West | 9.4 | 9.6 | 10.9 | 19.5* | * |
| | 100.0% | 100.0% | 100.0% | 100.0% | |

*Percentages not broken down further for farms above $100,000 in sales.

Source: GAO's analysis of 1974 Agricultural Census Data

## Farm profiles show diversity of farm sector

To describe today's farmers, we compiled various farmer characteristics and developed five farmer profiles, using farm income level as a base. As Table 27 shows, aggregate farmer statistics can be misleading because each group has unique characteristics and must be considered separately.

## TABLE 27- SUMMARY OF FARM STRUCTURAL CHARACTERISTICS PRESENTED BY FARM CLASSIFICATION PROFILES

| FARM CLASSIFICATION PROFILE / STRUCTURAL INDICATORS | GENERAL STRUCTURAL CHARACTERISTICS | | | | | | | FARMS BY PRINCIPAL ENTERPRISE | | | | | ORGANIZATIONAL STRUCTURE | | | FARM OPERATOR CHARACTERISTICS | | | | | | | | FARM ASSETS | | | | | | | | FARM LIABILITIES | | FARM SALES | | REALIZED INCOME | | | GOVERNMENT PAYMENTS | | | GEOGRAPHIC DISTRIBUTION | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % ALL FARMS | % ALL LAND | % ALL SALES | SIZE ALL FARMS | % $ SPENT DIRECT LABOR | % $ SPENT CON TRACT LABOR | % FARMS HIRING DIRECT LABOR | CASH GRAIN | LIVE STOCK | DAIRY | VEG AND FRUIT | GENERAL PURPOSE | SOLE PROPRIETORSHIP | PARTNERSHIP | CORPORATIONS | AVG AGE | NO. OF OPERATORS UNDER 35 | NO. OF OPERATORS OVER 65 | % WORK MORE OFF FARM 100 DAYS + | COMMERCIAL FARM OPERATIONS | % FULL OWNERS | % PART OWNERS | % TENANTS | LAND & BLDG. AVG. $ PER FARM | LAND & BLDG. % TOTAL | MACH. & EQUIP. AVG. $ PER FARM | MACH. & EQUIP. % TOTAL | IRRIGATION % OF FARM CLASS | IRRIGATION % TOTAL FARMS | IRRIGATION % OF ACRES IN FARM CLASS | IRRIGATION % TOTAL ACRES | % IN DEBT | AVG. LOAN SIZE OF THOSE IN DEBT | AVG. PER FARM | EXPENSES AS % OF FARM PROD. | FARM INCOME AVG. PER FARM | FARM INCOME FARM RELATED OTHER THAN SALE OF FARM PRODUCE | FARM FAMILY INCOME AVG. OFF-FARM INCOME | FARM FAMILY INCOME AVG. TOTAL INCOME | % AVG. TOTAL INCOME FROM GOVT PMTS. | % OF FARMS RECEIVING GOVT PMTS. | % OF TOTAL PMT RECD BY FARM CLASS | NORTHEAST % OF FARM CLASS | NORTHEAST % OF REGIONAL TOTAL | NORTH CENTRAL % OF FARM CLASS | NORTH CENTRAL % OF REGIONAL TOTAL | SOUTH % OF FARM CLASS | SOUTH % OF REGIONAL TOTAL | WEST % OF FARM CLASS | WEST % OF REGIONAL TOTAL |
| PART TIME AND SUBSISTENCE (< $10,000 in Farm Sales) | 52.2 | 23.3 | 4.7 | 20.1 | 2.6 | 4.84 | - - | 28.44 | 48.56 | 9.57 | 34.95 | 29.27 | 94.5 | 5.0 | 4 | 54 | 58,916 | 146,989 | 56.58 | 34.57 | 46.81 | 18.40 | 26.23 | $ 73,150 | 13.92 | $ 10,120 | 13.51 | 7.22 | 20.15 | 1.48 | 4.36 | 39.3 | $ 17,889 | $ 5,371 | 89.4 | $ 192 | $ 1,331 | $10,886 | $ 12,187 | 6.76 | 8.42 | 14.21 | (4.30) | 27.50 | (40.64) | 26.50 | (45.87) | 46.29 | ( 9.09) | 26.56 |
| SMALL ($10,000 - $39,999) | 27.3 | 25.1 | 16.9 | 41.0 | 9.11 | 11.13 | 35.0 | 40.49 | 31.18 | 50.6 | 37.13 | 43.77 | 91.2 | 8.5 | 7 | 51 | 85,004 | 93,926 | 31.54 | 37.27 | 36.31 | 37.02 | 41.77 | 131,830 | 26.95 | 20,760 | 29.84 | 10.55 | 31.71 | 2.36 | 14.87 | 38.3 | 30,234 | 21,097 | 88.3 | 6,874 | 2,274 | 8,404 | 17,562 | 8.96 | 10.90 | 31.61 | (5.00) | 29.10 | (57.42) | 42.64 | (27.74) | 31.94 | ( 9.64) | 34.54 |
| MEDIUM ($40,000 - $99,999) | 14.0 | 24.1 | 24.7 | 761 | 16.57 | 14.74 | 55.3 | 2.19 | 13.22 | 31.77 | 15.56 | 18.84 | 88.8 | 11.5 | 1.7 | 49 | 4 [illegible] | 27,612 | 6.68 | 19.13 | 11.94 | 29.14 | 22.86 | 242,190 | 27.53 | 40,549 | 29.81 | 14.93 | 23.06 | 3.52 | 21.44 | 61.4 | 64,986 | 81,680 | 87.0 | 29,462 | 2,431 | 8,713 | 29,606 | 5.87 | 12.95 | 25.87 | (6.88) | 24.04 | (58.47) | 22.77 | (22.78) | 13.48 | (10.88) | 30.01 |
| LARGE ($100,000 - $199,999) | 4.5 | 12.8 | 17.0 | 1299 | 15.54 | 17.22 | 71.3 | 6.55 | 4.49 | 5.96 | 8.28 | 5.33 | 78.1 | 16.1 | 5.2 | 48 | 12,200 | 7,384 | 1.96 | 5.97 | 3.17 | 10.37 | 6.18 | 456,120 | 14.90 | 80,330 | 13.88 | 23.85 | 11.38 | 5.4 | 18.29 | 87.4 | 95,825 | 138,012 | 86.8 | 41,284 | 3,924 | 8,047 | 53,255 | 4.62 | 12.89 | 11.87 | (5.39) * | 8.77 * | (48.41) * | 8.19 * | (19.89) * | 28.01 * | (19.61) * | 16.86 * |
| LARGEST ($200,000+) | 2.1 | 14.1 | 36.8 | 2826 | 56.17 | 57.06 | 82.2 | 2.23 | 2.55 | 2.10 | 5.07 | 2.79 | 57.9 | 21.4 | 20.6 | 50 | 4,103 | 3,768 | .64 | 3.04 | 1.78 | 5.07 | 2.96 | 1,003,830 | 16.72 | 109,870 | 12.88 | 56.04 | 13.72 | 11.44 | 41.05 | 38.0 | 278,512 | 585,092 | 81.1 | 110,246 | 12,032 | 13,677 | 138,855 | 4.89 | 12.96 | 16.66 | * | * | * | * | * | * | * | * |
| | 100% | 100% | 100% | | 100% | 100% | | 100% | 100% | 100% | 100% | 100% | | | | | | | 100% | 100% | 100% | 100% | 100% | | 100% | | 100% | | 100% | | 100% | | | | | | | | 100% | (5.46) | 100% | (50.94) | 100% | (33.00) | 100% | (11.40) | 100% |
| AGGREGATE AVERAGE FARM SIZE | | | | 440 | 185,514 | (55,087) | 41.4 | | | | | | 89.6 | 8.6 | 1.7 | 51.4 | 218,521 | 279,689 | 24.0 | | | | | $ [illegible] 31 | | $ 25,852 | | 11.9 | | 1.5 | | 39.2 | $ 49,877 | $ 47,649 | 74.3 | $ 12,237 | $ 2,343 | $ 9,137 | $ 23,717 | 6.29 | 10.9 | | 5.46% | | 50.94% | | 33% | | 10.6% | |

**DATA SOURCE**: Chart prepared by CED/Food Staff GAO from *1974 Census of Agriculture* Data

1/ NOTE. THE PERCENT OF ALL FARMS, LAND AND $/ LES AS WELL AS AVERAGE FARM SIZE UNDER GENERAL STRUCTURAL CHARACTERISTICS ARE BASED UPON ALL FARMS INCLUDING THOSE SELLING UNDER $2,500. ALL OTHER DATA PRESENTS COMMERCIAL FARMS ONLY, THAT IS THOSE SELLING $2,500 OR MORE IN TOTAL AGRICULTURE PRODUCTS

*FIGURES ON GEOGRAPHIC DISTRIBUTION FOR ALL FARMS SELLING $100,000 AND OVER ARE AGGREGATED IN THE CENSUS.

Part-time/subsistence farms

Part-time/subsistence farms accounted for over half of all farms and controlled nearly one quarter of the land, yet they had sales of less than 5 percent of the total. Average farm size was 203 acres.

Twenty-eight percent of all cash grain farms are part-time/subsistence farms. Nearly half of the livestock farms, 10 percent of all dairy farms, 35 percent of vegetable and fruit farms, and almost 30 percent of general purpose farms are also part-time/subsistence farms.

By organizational structure, nearly all farmers in this category (95 percent) reported the sole proprietorship form of ownership. Another 5 percent were partnerships and only a fraction of one percent were corporate farms. There was a similar relationship between acreage, with 1.7, 6.9, and 91.4 percent of all acreage in corporations, partnerships and sole proprietorships, respectively.

This category contained the most farmers aged 65 and over--some 147,000--probably because of the large number of retirement and part-time farms in this group. Nearly 70,000 farmers under 35 were in this group, but the average age was the highest of all classes at 54. Over 40 percent of the farm operators in this category worked off-the-farm 150 days or more each year.

Twenty-eight percent of all farms hiring direct labor were in the part/time subsistence category. This sector also included over a quarter of the farms employing contract labor. The wages paid these laborers however, represented only 3 percent and 5 percent, respectively, of total wages. Although these figures imply that many of the laborers were seasonal and part-time, another explanation is that wages paid by smaller farmers are less than those paid by larger farmers.

Part-time/subsistence farms controlled 14 percent of the total land and building assets and slightly less in equipment value.

Farmers on part-time/subsistence farms were less in debt than an average farmer. Only about 30 percent were in debt at all, having an average indebtedness of nearly $17,900.

Average farm production costs nearly equalled the average value of farm sales of about $5,300 per farm, leaving farmers with less than $200 of realized farm income. Farm-related income after expenses added about $1,300. The major

components of such income included custom farm work and agricultural services performed for other farmers and Government farm programs. Average total income for each farm family was about $12,000, including off-farm income. Because this is average it can be concluded that many farmers in this category are at the poverty level. This conclusion confirms independent research on the subject. 1/

Regional distribution of these farmers shows that the South and the North Central areas of the United States have nearly 53 percent and 33 percent of the Nation's total, respectively.

Small farms

The small farms category--with annual sales between $10,000 and $40,000--contains 632,000 farms, about 27 percent of total farms. They control nearly a quarter of the land, accounting for nearly 17 percent of the sales. Average farm size for small farms is 416 acres.

Most dairy farms are small farms--over 50 percent--and over 40 percent of all cash grain farms and general purpose farms, 37 percent of all vegetable and fruit farms and 31 percent of all livestock farms.

Like their smaller cohorts, small sized farmers chose by an overwhelming majority (91 percent) to run their farms as sole proprietorships, with the corporate ownership accounting for a minute number. Although 87.6 percent of all acres were owned by individual owners, only 2.6 percent of all acres were in corporations.

This individual owner category contained the second highest number of farm operators over 65 and the second largest number of operators under 35.

About 20 percent of the small farm operators work off-the-farm 150 days or more each year.

The small farms category contained the largest number of farms using hired labor and contract labor, over 30 percent

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1/"An Analysis of Socio-Economic Characteristics Resources, Management Practices and Productivity of Small Farm Operators in Floyd and Brunswick Counties, Va." by David R. Orden. Unpublished Master's thesis, Virginia Polytechnic Institute and State University, Blacksburg, Va., 1977.

in each case. However, this represented only 9 percent and 11 percent of total wages, respectively.

This category contained nearly 27 percent of total land and building value and nearly 30 percent of machinery and equipment--twice the machinery owned by the smaller farms.

Only 39 percent of these farmers were in debt, with the average size loan of those in debt over $30,200.

Although off-farm income was lower in this category than the previous category by over $2,000, this outside income still amounted to more than that realized from farm income. Realized farm income averaged nearly $6,900, with an additional $2,300 from farm-related income. Average family off-farm income added another $8,400, raising the total average income per family to over $17,000.

The North Central region had 57 percent of all the small-scale farmers; the South had 30 percent.

Medium farms

The medium farms are characterized as having between $40,000 and $99,999 in gross agricultural sales. They represent 14 percent of the farms, account for over 24 percent of the land and just slightly more--25 percent--of the sales. The average acreage, although highly variable by geographic region and cropping system, was 761 acres.

This medium farm sector has the second largest number of dairy farms--roughly 32 percent of the total of farms. Twenty-two percent of all cash grain farms, 13 percent of all livestock farms, 15 percent of all vegetable and fruit farms, and 18 percent of general purpose farms are medium-sized farms.

Corporate and partnership ownerships are more important, comprising 1.7 percent and 11 percent respectively, of the farms in this category. A substantial percentage, 87 percent, were still sole proprietorship or individual ownership types. Although less than 8 percent were corporations, over three quarters of the total acreage owned by medium-size farmers were sole proprietorships.

Unlike the smaller counterparts, the medium-size category contained more younger than older farmers. Over 45,000 farmers were under age 35. Those farmers over age 65 numbered over 27,600. The higher incidence of younger farmers helped lower the average age of farmers in this group to age

49. The number of farm operators working off the farm 150 days or more dropped to 6.6 percent.

Over a quarter of all farms hiring labor were medium-size farms. Records show that these farms paid 16 percent of total wages. Contract labor was less frequent, with medium farms accounting for 22 percent of all contract labor. A higher percentage of wages for contract labor was paid out, however, than in the smaller farms (up 4 percent over small farms and 10 percent over part-time and subsistence farms).

Nearly 30 percent of all land and building values, and a similar percentage of machinery and equipment values were found in the medium farm class. Slightly more than half the farmers were in debt, with an average indebtedness of over $54,000.

Farm production costs were two-thirds of gross sales, leaving a realized farm income from production of over $20,000. Net farm-related income added $2,400. Family off-farm income was lowest of all five farm profiles, averaging $6,700. Total family income for middle-size farmers averaged near $30,000.

Almost 60 percent of the middle-scale farms are in the North Central region, nearly 23 percent in the South, 11 percent in the West, and about 7 percent in the Northeast.

Large farms

Large farms had between $100,000 and $199,999 in agricultural sales per farm. They represented 4.5 percent of the total farms, controlling almost four times that in sales. Average farm size was nearly 1,300 acres.

The large farm sector represented slightly more than 6 percent of all cash grain farms and vegetable and fruit farms. Approximately 6 percent of all dairy farms are considered large farms, although just over 5 percent of the general purpose farms are large farms. The large farms category also includes 4.5 percent of all livestock farms.

The incidence of corporations was over double that found in the medium-scale farms, representing 5 percent of all farms in this category. An additional 17 percent were organized as partnerships, leaving some 78 percent as sole proprietorships. Corporations controlled 15 percent of all acreage in the large farm size category while sole proprietorships controlled only two thirds of all acreage, a decrease of nearly 25 percent from part-time or subsistence farms.

The average age of farm operators in this category was the lowest of any sales class, at 48 years of age. Farm operators under 35 years of age were nearly double those approaching retirement at 65 and over, numbering 12,200 and 7,400, respectively.

Very few large-farm farmers felt the need for off-farm employment. Only 7 percent reported they worked off their farms more than 150 days.

Only 10 percent of all farms hiring labor are large farms, but they paid out more than 15 percent of the total wages. Also, ten percent of farms employing contract labor are large farms, expending 12 percent of wages for that type of labor.

Large farms had 15 percent of the market value for all land and buildings. They also controlled 14 percent of total machinery and equipment value.

Fifty-seven percent of the farmers were in debt, with an average debt over $95,800.

Average farm sales totaled $136,000. Nearly 70 percent of these sales went for direct production expenses in 1974, leaving a realized farm income of about $41,300, and an additional $3,900 from net farm-related income. Off-farm family income averaged $8,050, for a total average farm-family income of over $53,200.

Largest farms

Only 2.1 percent of all farms fell into this category, which required sales of $200,000 and above. The average farm size exceeded 2,900 acres, representing 14 percent of all farmland, yet capturing nearly 40 percent of all farm sales.

The largest farms contained over six percent of all vegetable and fruit farms. About two percent of all cash grain farms, livestock farms, dairy farms, and general purpose farms were among the largest farms. Corporations and partnerships combined were used in over 40 percent of these super-size farms, each having a somewhat equal share of that total. Incidence of sole proprietorship dropped to 58 percent. Nearly 60 percent of all acreage in this category was controlled by corporations or partnerships.

There were slightly more young farmers than older farmers. The average age was 50 years.

Only 5 percent of the farm operators worked off the farms more than 150 days.

Largest farms accounted for 6 percent of all the farms hiring labor, but the percent of wages paid jumped to 56 percent. It can be concluded that the largest farms hire many more paid employees, for longer periods and that they may pay more for the labor. Fifty-seven percent of all contract labor wages are paid by the largest farms, but this only goes to approximately 9 percent of contract labor hired by all farm sizes. It can be concluded that the nation's largest farms depend much more heavily upon hired labor for farm work than any other class. Over 8 percent of the largest farms depend upon hired labor compared with 28 percent of the part-time/subsistence farms.

The 2 percent of farms in this range control 17 percent of the land and building value and 13 percent of the machinery and equipment value.

Nearly 60 percent of these farm operators were in debt. Average indebtedness was almost $280,000.

Average farm sales totaled some $586,000 while production costs took over 81 cents out of every dollar. This still left farmers over $110,000 in realized farm income. Added to this amount was slightly over $12,000 in net farm-related income. Off-farm family income totaled $13,577 and average total farm family income was almost $136,000.

Regional interviews confirm farmers' concern over high cost of farming

Although national Census statistics provide an interesting profile of farmers, we sought more personal assessments from farms of varying sizes. Regardless of size or geographic location of the farms, farmers had many common concerns.

--Low returns to farming were a unanimous concern. It was frequently cited that inflation has forced production costs up without a corresponding increase in farm market prices. Many noted the inability of new farmers to enter farming without family ties, given the need for large, highly-efficient farms for financial stability.

--Generation transfers and estate planning concerned most farmers we interviewed. This tended to be the

primary reason that many farmers were considering changing their existing organizational structure to a corporate ownership. Proper business and estate planning was seen as vital to protecting the assets of farm operation and economically insuring that it can remain in the family. Farmers felt they needed more assistance in generation transfers and estate planning.

--Locational longevity was the concern of all farmers affected by urban and recreational development, because land speculation, urban pressures, and increased property taxes make it increasingly difficult to farm.

With urban and industrial development, many farmers have become worried about the powers of eminent domain. As an example, a farmer in Berke County, Pennsylvania, noted that the Pennsylvania Game Commission has taken 16 farms--totaling 3,000 acres--for public hunting grounds; an electric utility company took 20 farms--totaling 3,800 acres--for a nuclear power generating station; and the Army Corps of Engineers took 36 farms--totaling 6,000 acres--for the Blue Marsh Flood Control Dam. The New York State Power Authority recently took 8.2 acres from a small farm in Oneida County, New York. The farmer was compensated $4,700.

Urban pressures are not only being felt in the North East and Far West. We were told by a farmer in Yellowstone County, Montana, that each year more than 1,600 acres in that county alone are subdivided into 5- and 10-acre county estates, with nearby counties experiencing similar trends. One farmer owning a small farm told us that he was unable to enlarge his farm to expand his output because of outsiders bidding up the land. Another farmer told us of a recent Latin investor representing Middle East interests who bought 22,117 acres of which nearly 2,000 were irrigated at a cost of $3 million.

--Increasing cost of machinery and equipment was cited by U.S. farmers who were startled by the cost of farm implements.

--One California farmer said equipment costs had more than doubled in the last three or four years.

--One Oregon farmer said that he paid $8,500 for an eight-year-old tractor in 1967 and believes that the same year and tractor model today is selling for over $10,000.

--One small cotton farmer in California said his capital investment for equipment is about $275,000, although a large farmer from the same area estimates the value of his equipment to be approximately $2 million.

--One part-time farmer with only 46 acres of cropland said he had about $50,000 invested in equipment.

--One Virginia cattleman said that the replacement costs for fences are too high to make the necessary capital improvements.

--Energy usage and availability at nonprohibitive prices was also a general concern. Although it was generally acknowledged that today's agriculture was increasingly dependent on petroleum-based and powered inputs, all we interviewed were concerned about rising costs of petroleum and the possibility that it might exist at competitive prices in the future. One farmer of a medium-size Maryland dairy farm estimates he uses an average of 200 gallons of diesel fuel and 200 gallons of gasoline per month. More than twice that much is used during planting and harvesting, as well as $150 worth of electricity, and noted that energy costs have more than doubled in the past few years.

--Increasing regulations by Federal/State/local environmental, health, labor and other inspection officials was difficult for many farmers. Generally, farmers today, regardless of farm size, are directed by Government officials. Formerly, Government officials simply provided technical assistance. Governmental assitance programs now are too complicated. The farmers added that the programs also take too long to get results. We were told the matching funds from the Agricultural Stabilization and Conservation Service are not sufficient to enable farmers to take advantage of large soil and water conservation practices today.

--Decline of rural agricultural support services in local communities was also cited as a problem. Many saw larger farmers bypassing local communities, putting rural businesses in jeopardy.

## Implications

Who are today's farmers? They are a diverse lot with many different characteristics yet many similar concerns. Aggregate statistics do not portray them accurately, as reflected in Table 27 on page 93.

Any policy directed at the farmer must consider the wide range of farmers. A policy geared to assist the smaller farmer--whose diversity has long been the backbone of agriculture--must be different from one which is aimed at the larger, more aggressive farmer--who may be the reason our food is still relatively inexpensive.

Most important for policymakers is a better understanding of who will be affected by Government programs.

Along with their reliance on aggregate farm statistics, past attempts to help farmers have suffered from vague target groups. Recent legislation supports "family farmers," (see p. 125 of ch. IX), yet many different types of farmers can be classified as family farmers. The group actually obtaining the most relative monetary benefit from government assistance programs has been the largest farmers because the commodity programs are based on production.

In our study of the changing farm structure, we found it worthwhile to develop several farm profiles to get a more precise picture of the make-up of today's farmers. We determined that the following criteria are important in classifying farms by size:

--Land holdings in acreage, quality and location. This criterion varies by geographic region, farming enterprise, land quality and water availability. Land owned and land rented should be indicated.

--Income stream or volume of gross agriculture products sold. This criterion recognizes that farm size (land holdings) is not the same as income flow. Three-year averages would be better than one-year averages.

--Level of management and technology used. Indicators of management practices used and technology will vary by cropping systems and geographic regions. Equipment types and quality should be included as part of this indicator, as well as the level type and source of knowledge (formal and informal) the farmer has achieved.

--Organization of farm's economic activity. This criterion can be determined by factors such as:

  --Organizational structure used (sole proprietorship, partnerships, corporation, syndicates, etc.).

  --Ratio of family labor to hired labor.

  --Level of decisionmaking by farm managers/operators/owners.

--Market strategy and degree of product integration. This criterion attempts to measure the interaction and interdependence of the farms within their economic environments.

--Social welfare indicators, such as quality of housing and relative well-being as compared with neighbors and urban residents.

Issues

--Because many types of farmers exist today, should analysis of farming conditions and program planning be based on specific farm profiles rather than aggregate farmer statistics?

--Should these farm profiles be based on factors, such as size--relating to farm labor used, land, and farm income- geographic region, and cropping system?

--To become more aware of specific farm-level concerns and better establish farm programs, should the Federal Government use more case-study approaches based on farm profiles, with field interviews of various types of farmers?

## CHAPTER VIII

## WHILE OWNERSHIP OF FARMLAND BY FARM MANAGERS HAS BEEN AN AMERCIAN TRADITION, ITS INCIDENCE HAS DECLINED IN RECENT YEARS BECAUSE OF ECONOMIC CONDITIONS, AND CORPORATE-OWNED LANDS HAVE INCREASED IN IMPORTANCE

With the exception of the Depression in the 1930s, Federal lands in the West, and sharecropping in the South, a high percentage of U.S. farmland has been owned by the individuals and families who daily manage and operate farms. As recently as 1954, farm operators owned nearly 60 percent of the land in U.S. farms. Inflated farmland and equipment values combined with strong incentives for nonfarm interest ownership of the land have led to a decline in ownership of farmland by farm managers, however. Today it is likely that less than half of all farmland is owned by the operators who farm it. 1/

Changing times brought about changing farm structures, and sole proprietorship farms have declined in importance. Many farmers instead have chosen to organize partnerships or corporations which can deal with more sophisticated and larger farming operations.

While the corporate influence has been felt in agriculture in general, it is not to the extent that many fear. A corporation can simply be an organizational tool used by a typical family farmer or it may represent a large farm or nonfarm outside interest. Whatever the case, corporations, especially non-farm family corporations, have had significant impact on certain commodities and in certain regional areas and will no doubt grow in numbers because of certain preferential tax advantages.

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1/Census data from 1969 and 1974 show over 63 percent of farmland is operated by its owner, but a change in the definition of "farm operator" makes the figures highly inflated. Since 1969, corporations or employers of hired managers, even if they live off the farm, could be classified as farm operators if they were actively engaged in supervising the farm. Previously only individuals who managed the farm on a daily basis fit the classification.

## Individual ownership of farmland forced into downward trend

Before the turn of the 20th century, the U.S. Government created programs to sell and distribute land in small units. The ordinances of 1784, 1785, and 1787, the Pre-exemption Act of 1841, and the Homestead Act of 1862, were the most important. These acts were developed to distribute the tremendous amount of inexpensive land that existed in the United States at that time.

Even until 1940, there existed an abundance of inexpensive farmland. The average value of real estate per farm was less than $5,000.

Throughout the settlement period of America, labor commanded a high wage for both nonfarm and farm activities relative to the price of land. With a relatively short time spent as a hired worker, many individuals could obtain the money to purchase or finance their farms. Today this is no longer true as prospective farmers find that the vast amounts of capital required to start farming is usually well beyond their means unless they enter farming through existing family ties.

During this period our forefathers valued ownership of their own land. The incentives for farmland ownership by nonfarmers were not significant, because the rate of return for invested capital was almost always higher and less uncertain in other business ventures.

From the end of our Nation's settlement period to World War II, the farming structure was beginning to change. The farmland ownership by farm managers fell to 50 percent of the farms and the relative status of landowner-managed farms declined substantially during the 1930s.

Farms managed by individuals who owned none of the land reached 47 percent by 1935. This shift away from family-owned-and-operated farms occurred for several reasons.

--The size of the farm population and demand for land continued while supply of cheap land declined.

--The technological revolution in agriculture increased farming costs, thus lengthening the time required for new farmers to accumulate capital to purchase their own lands.

--Many early settlement period farmers and widows were beginning to approach retirement age. Many of these people and their heirs chose to retain their land and operate it by methods such as hiring managers, land rental, and employing share tenants.

--The economic depression of the 1930s resulted in many new and indebted farmers losing their land by defaulting on their notes.

The high commodity prices of World War II allowed many farmers to purchase farms, pay off mortgages, and buy additional land. As a result levels of land ownership by farm managers again rose. Acres of land operated fully by their owners increased from 391 million acres in 1935 to 419 million in 1950, while acres farmed by hired managers or tenants declined from 397 to 319 million acres.

Land ownership by farm managers declined again from 1954 to 1964. In this period acres owned by operators dropped from 58 to 54 percent. Although comparable data does not exist for more recent years because of a change in the way Census data was collected, farm managers would not own a majority of all farmland presently if the downward trend between 1954 and 1964 had continued.

Other evidence supports continuation of this downward trend. As high costs made purchase of additional farmland difficult, farmers frequently expanded through rental of farmland. About 38 percent of the Nation's farmland was rented in 1969--up from 33 percent in 1949. In 1974 the percentage was 33.5 percent, but again data collection changes interfere with analysis. The 1974 figure is a low indication of total rented land because it includes only rented land owned by nonoperator landlords. The figure does not include land rented by farm operators to other farm operators--a practice known to have increased.

Farmland rental is especially high in the rich lands of the Midwest. A 1972 study of land rental agreements of 123 operators in Michigan and Illinois showed that the average operator farmed 435 acres. Seventy-four percent of that land was rented.1/

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1/"The Farmland Rental Market--A Case Analysis of Selected Corn Belt Areas," by Bruce B. Johnson, Dept. of Agricultural Economics, Michigan State University.

The 1974 Census indicated that "rented" land--that owned by nonoperator landlords--amounted to 42 percent of the land in Kansas, 48 percent in Illinois, over 38 percent in Iowa, 26 percent in Minnesota, over 46 percent in California, nearly 37 percent in Indiana, and about 39 percent in Texas. The North Central and West regions both had about 33.5 percent of land under the 1974 Census definition of rented, with over 31 percent in the South rented. The Northeast trailed substantially behind with only 17 percent rented.

The recent decline in farm manager ownership has several explanations.

--The inflated value of farmland makes purchase by farmers difficult, especially by new farmers.

--High property taxes make intact transfer of farmland to heirs a problem.

--Farmers can earn greater profits by investing their capital in machinery, instead of land.

--Landowners, including retired farmers and widows, are retaining farmland as a hedge against inflation.

--Nonfarmers are attracted to farmland because of its high investment value and tax benefits.

A combination of institutional factors tend to give additional purchasing power to prospective land buyers in higher income brackets which include the larger sized farmers as well: (1) use of cash-basis accounting, (2) preferential taxation of capital gains, (3) investment credit, (4) accelerated depreciation allowances, and (5) the ability to deduct interest on borrowed funds as a business expense.

## Ownership structure has changed to suit changing needs of farmer

Society now associates farming with sole proprietorship, family operations. Sole proprietorships accounted for 89.5 percent of all farms in 1974. Yet sole proprietorships in no way insures that farms are operated by someone living on the farms, working the land with other members of his family.

Similarly many Americans think of a partnership--representing 8.6 percent of farms in 1974--as a father and son or several family members. A partnership, however, can represent a large farming operation and may even have a corporation as one of its partners.

Corporations--accounting in 1974 for only 1.7 percent of farms--have become the "bad guys" of organizational structure. The term "corporation" conjures up a large multi-interest organization, invading agriculture on a grand scale and putting small family farmers out of business.

The corporate form of ownership itself, however, is not a problem. In fact corporate structure offers several attractions to farms of every size including

--ease of transferring interests in property by transferring share of stock for estate planning,

--possibilities for planning management and ownership succession to make continuation of the business easier after deaths of the original owners,

--avoidance of full-owner liability for obligations of the business through shareholder limited liability, and

--opportunities for income tax saving.

Many corporations are actually family-owned and controlled or owned by only a few individuals. A 1967 study by the USDA Economic Research Service is the most recent indepth analysis of corporate farming in America. The study indicated that nearly two-thirds of farming corporations were family corporations, while an additional 14 percent were controlled by individuals.

It must be noted, however, that family ownership and control of farming corporations is not synonymous with "family farms." A family corporation may combine several nuclear families and include nonfarm business activities which may be more important than farming. Family corporations can include large agribusiness conglomerates controlled by wealthy families.

According to 1969 Census data, over 90 percent of all farm corporations were "closely held," having 10 shareholders or less. Data from the business income tax returns of 1972, however, does not similarly reflect dominance of small corporations. Under IRS rules, a corporation may choose to file as a "small business corporation" if it had no more than 10 shareholders who were all individuals (among other stipulations). The maximum number of shareholders was recently increased. For the entire agricultural sector, including corporations involved in farming, forestry, and fishing, only 13,700 out of 43,000, or 32 percent, filed as small business

corporations. Even if all the small corporations filing were in farming, that is still only half the number of total farm corporations.

Largest farms often under corporate control

As noted the corporation has advantages for farmers in all size categories. Corporations are most prevalent in the larger sales classes, however, accounting for a higher proportion of farm product sales than their numbers would indicate. Chart 19 uses 1974 Census data to provide a graphic illustration of how the incidence of corporations, as well as partnerships, increases as the sales category increases.

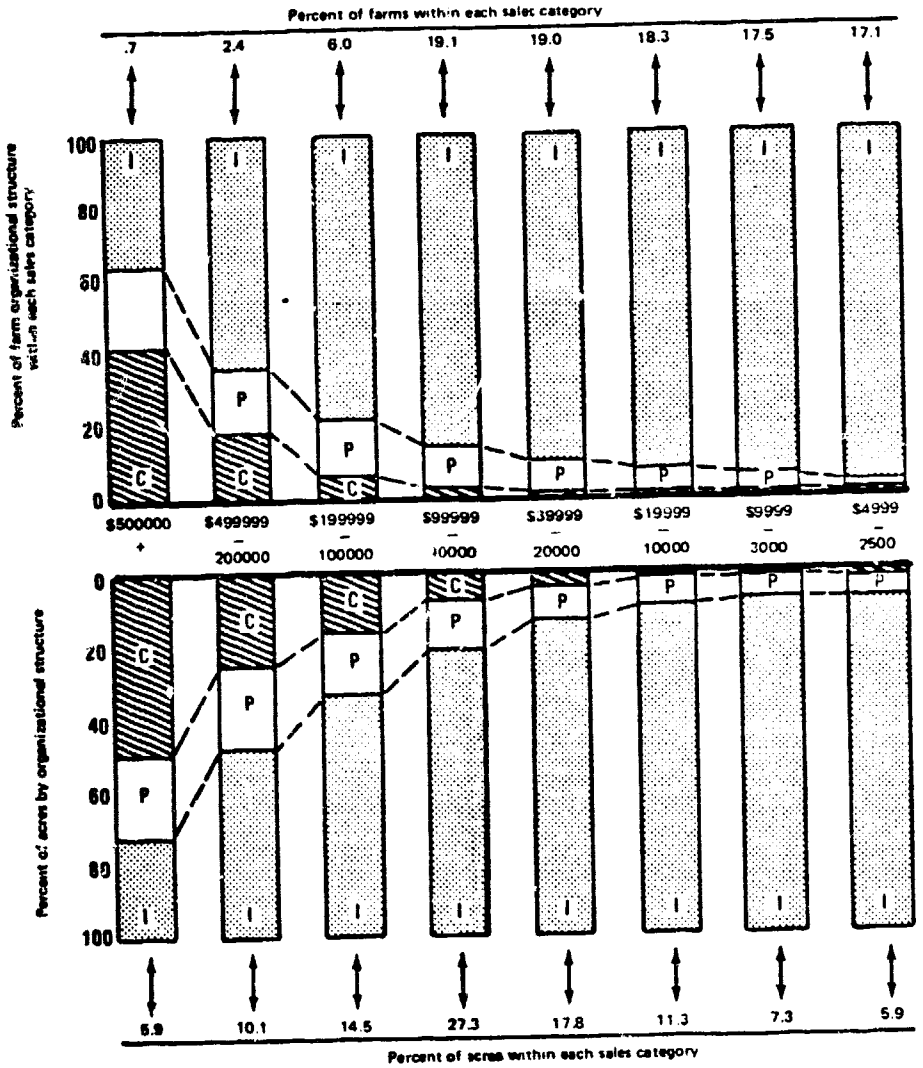
Chart 19 on page 110 shows the distribution of land (acres) and sales by each sales category, using the Census' own income breakdown.

A more detailed analysis of the role played by corporations in our Nation's largest farms is derived from unpublished 1974 Census data.

Table 28 indicates, for example, that there were 4,040 farms in 1974 with sales of at least $1 million. Of these farms, some 2,330 were corporations, 700 were partnerships, and 940 were individuals (sole proprietorships). Viewed from another perspective, 8 percent of all farm corporations had sales of $1 million and over, while only .5 percent and .1 percent of all partnerships and individual farms were that large.

Chart 19

**TYPE OF ORGANIZATION BY SALES CATEGORY FOR COMMERCIAL FARMS*, 1974**




*C=CORPORATION*
*P=PARTNERSHIP*
*I=INDIVIDUAL/FAMILY*

**FARMS WITH ANNUAL SALES OF $2500 OR ABOVE*
*SOURCE: 1974 CENSUS OF AGRICULTURE*

Table 23

Number of Farms by Value of Agricultural Products Sold and Type of Organization

| VALUE OF SALES | ALL ORGANIZATIONS | % DISTRIBUTION | INDIVIDUAL OR FAMILY | % DISTRIBUTION | PARTNERSHIPS | % DISTRIBUTION | CORPORATIONS | % DISTRIBUTION | OTHER | % DISTRIBUTION |
|---|---|---|---|---|---|---|---|---|---|---|
| $2,500 and over | 1,695,647 | 100.0 | 1,517,573 | 100.0 | 144,969 | 100.0 | 28,656 | 100.0 | 3,849 | 100.0 |
| Under $100,000 | 1,542,448 | 91.0 | 1,409,110 | 92.9 | 117,158 | 30.8 | 12,869 | 44.9 | 3,311 | 86.0 |
| $100,000-$199,999 | 101,153 | 6.0 | 78,827 | 5.2 | 16,843 | 11.6 | 5,226 | 18.2 | 257 | 6.7 |
| $200,000-$299,999 | 25,091 | 1.5 | 16,867 | 1.1 | 5,203 | 3.6 | 2,926 | 10.2 | 95 | 2.5 |
| *$300,000-$399,999 | 9,841 | 0.6 | 5,905 | 0.4 | 2,170 | 1.5 | 1,719 | 6.0 | 47 | 1.2 |
| *$400,000-$499,999 | 5,102 | 0.3 | 2,675 | 0.2 | 1,187 | 0.8 | 1,212 | 4.2 | 28 | 0.7 |
| *$500,000-$599,999 | 2,832 | 0.2 | 1,368 | 0.1 | 650 | 0.4 | 801 | 2.8 | 13 | 0.3 |
| *$600,000-$699,999 | 1,828 | 0.1 | 849 | 0.1 | 427 | 0.3 | 533 | 1.9 | 19 | 0.5 |
| *$700,000-$799,999 | 1,221 | 0.1 | 516 | ** | 275 | 0.2 | 421 | 1.5 | 9 | 0.2 |
| *$800,000-$899,999 | 845 | ** | 307 | ** | 197 | 0.1 | 333 | 1.2 | 8 | 0.2 |
| *$900,000-$999,999 | 645 | ** | 207 | ** | 151 | 0.1 | 281 | 1.0 | 6 | 0.2 |
| $1,000,000 and over | 4,041 | 0.2 | 942 | 0.1 | 708 | 0.5 | 2,335 | 8.1 | 56 | 1.5 |

* Unpublished data
** Value is less than 0.1
Source: 1974 Census of Agricultural

## Corporate influence heaviest in certain commodities and regions

Large corporations also influence farming in ways other than direct ownership of farmland. By 1970, 17 percent of the American food supply was controlled by agribusiness corporations through advance sales contracts with farmers. The portion of total farm output controlled by corporations through outright ownership of the land or forward contracts with producers rose from 19 to 22 percent between 1960 and 1970.

The corporate influence is especially evident in certain commodities. In 1970, 100 percent of sugar beets, 94 percent of broilers, 88 percent of processed vegetables, and 47 percent of citrus fruits were produced either on land owned by agribusiness corporations or under corporate contract. One corporation controls 70 percent of the date industry.

Corporate agriculture has a more significant effect in certain areas of the country, especially the heavy farming States of California and Florida. A November 1977 report on Family Farms in California reported that just 5 percent of California's farms, having annual sales values of $500,000 or more, command a 61 percent share of all agricultural commodities in the State. Many of these large farms are controlled by large multi-interest corporations.

According to the Agribusiness Accountability Project, a public interest organization, corporate farming is encouraged in areas with the need for expensive irrigation systems and the potential for reaping large benefits from the land once they are installed.

Corporations such as Boeing Airplane Company; Utah-Idaho Sugar Company (I&U, Inc.); I&U International Corporation; Amfac, Inc.; Burlington Northern; J.R. Simplot Co.; P.J. Taggares Company; and the U.S. Tobacco Company have established large vertically integrated food production, processing, and manufacturing operations in the Mid-Columbia Basin of Washington and Oregon.

## Legislators have sought to curb the corporate influence

The significant role played by a relatively small number of large corporate-owned farms has led to much debate on the advantages and disadvantages of corporate agriculture.

Those who favor corporate farming say that greater efficiency can be achieved through economies of size and scale, as well as fiscal savings. Corporate farming helps keep food prices down, they argue.

Opponents of corporate agriculture believe that corporations reduce competition in agricultural markets and bid up land beyond individual capabilities. In addition those against corporate farms assert corporations are less concerned with conservation practices and show a lack of interest in rural affairs.

Several States, including Minnesota, South Dakota, Wisconsin, and Missouri, have enacted statutory limits on the use of corporations since 1973. States such as North Dakota and Kansas have limitations dating back to the 1930s while Oklahoma's regulation of corporate farming dates back to its statehood. Iowa has recently adopted legislation limiting the use of trusts as a method of land ownership or farm operation. Thirteen States in total have some type of legislation that restricts corporate ownership of real estate to some degree.

The U.S. Congress has also been interested in corporate encroachment into agriculture. The Congress has recently considered the Family Farm Act of 1972 (S. 2828) and the Family Farm Antitrust Act of 1975 (S. 458). The Food and Agriculture Act of 1977 (P.L. 95-113) stated: "Congress * * * believes that any significant expansion of non-family owned large-scale corporate farming enterprise will be detrimental to the national welfare." The law provided for a study (to be completed by USDA on January 1, 1979) to determine whether corporations and a few other nonfamily farmers should be denied Federal payments on specified crops, thus discouraging nonfamily farming.

## Foreign investments worrying farm interests

Legislators have become concerned in recent years over another growing group of farmland owners--foreign investors.

Under a new Missouri law, foreigners cannot buy more than five acres of agricultural land. Iowa is closely monitoring land purchases by non-Americans. Several other State legislatures are considering laws which would limit the role foreign investors could play in farmland purchases.

Although there is much worry voiced over foreign ownership of agricultural lands, there is little hard knowledge

about how extensive it actually is. 1/ There have been some reports of large individual purchases. Farmers in Montana told us that a ranch in Yellowstone County was bought by a Panamanian or Venezuelan investor for $3 million. The purchasers were allegedly representing Middle East interests. The sale of over 22,000 acres included 1,900 acres of cropland. The State of Montana now estimates that well over 100,000 acres have been bought by wealthy foreign investors.

However, there are no accurate all-inclusive statistics nationwide. Part of the problem in identifying foreign buyers is that they often buy through intermediaries with no records available on the actual landowners. Also, public land records usually do not show owners' citizenship.

The most recent national data on direct foreign ownership of U.S. land stems from a 1975 Department of Commerce survey. All 6,000 foreign firms and individuals with direct investments were surveyed and only those owning 200 acres or more tabulated. The total acreage in foreign ownership was 4.9 million acres. This estimate is probably low because of indirect involvement, and gaps caused by ignoring land ownership under 200 acres. Even if this figure were doubled to account for those not being tabulated, it would amount to less than 1 percent of the 1.3 billion acres of privately owned land.

Although foreign purchases are increasing, only about 3 percent of all farmland changed hands in 1977. What is not known is the rate of increase in foreign investments, or what portion of that annual 3 percent is being purchased by foreigners. A small number of foreign transactions often involve purchases of large tracts of land. Foreign holdings, while minimal on a national scale, may therefore have substantial impact on local areas. Some international investment companies have reportedly been buying smaller parcels of land to put together attractive packages for overseas investors.

Critics of foreign investors have complaints similar to those who criticize large corporate agriculture. They charge non-Americans bid up the price of farmland beyond their normal value and that foreigners care little about conserving the natural resources or building up the surrounding community. There is also question about whether

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1/See GAO report, "Foreign Ownership of U.S. Farmland--Much Concern, Little Data," CED-78-132, June 12, 1978.

foreigners will be committed to U.S. agricultural production if there are food crises in their own countries.

A correlary concern which has not received much attention and which may be highly significant on the local level is what percent of certain commodity sales are coming from foreign owned farms. We have shown in this report that land does not necessarily equate to market presence. (See p. 61 of ch. VI.)

If market influence is a true concern, then perhaps better information needs to be gathered as to who deals either directly or indirectly in the U.S. open market as well as through the future commodity exchange markets.

However, some support foreign investors for bringing capital into what they called a sagging U.S. agricultural economy.

Implications

There is much that is not known about who owns, controls, and operates America's farmland. The Congress, various interest groups, and Federal and State Governments have been focusing on the potential problems of increased foreign ownership. While important, other complex questions deserve more attention, such as:

--How many daily farm operators own and manage the land they till? What is the trend?

--Is a "landed aristocracy" being created which effectively bars prospective entrants?

--What is the make-up of the partnerships and corporations which own farmland? How many are owned by families which do not actively engage in the operation of farming?

Ownership studies begun by the Department of Agriculture may clear up a few of the questions. However, many of the significant issues about ownership and control of farmland will not be touched.

There are many reasons why it is important to know who owns the land. Government price subsidies, aimed at "farmers," tend to become capitalized into land values and actually benefit the land owners, who may not be the operators. (See p. 122 of ch. VI.)

In addition, the degree of commitment of the landowner to U.S. farming will influence whether the land remains in agricultural use even during adverse times or whether it will be sold to developers. Another factor is that landowners who live outside the farm area take much-needed capital out of the community and take less of an interest in the rural surroundings of farms.

Those gathering information on ownership of farmland must be careful to avoid the myths about ownership structure. The sole proprietorship may not be the most advantageous organization for the family farmer, given the complex nature of today's farming requirements.

Similarly, it is misleading to group together all corporations and talk of corporate influence taking over agriculture. Family farmers incorporating for management purposes must be separated from the multi-interest corporation with farmland holdings as well as corporate or individual owners who do not actually farm the land.

Issues

--Does the Federal Government know enough about who owns or controls farmland today to direct agricultural policy?

--Should the Federal Government attempt to influence the structure of agriculture by becoming more involved in assisting new family farm purchases?

--Does the Federal Government have a role to play in regulating the ownership of our farm resources, particularly foreign investment? What might be consequences of such action taken to U.S. land investments overseas?

--Since the corporate form of ownership has distinct advantages for todays farmers, should family farmers be encouraged to incorporate?

--Given the dominance of large corporations in certain regions and commodities and within the highest farm income brackets, should limits be placed on the multi-conglomerate corporate role in agriculture to maintain a competitive market?

--If limitations on corporations are desirable, should they be directed at only non-family corporations? At corporations with interests which are principally non-agricultural? At all large-scale corporations? At nonfarm family corporations?

# CHAPTER IX

## GOVERNMENT PROGRAMS HAVE HAD MIXED RESULTS

Since early in this century, the Federal Government has attempted to help farmers deal with fluctuations in costs and demand through direct payments and loans. However, since the programs have been tied to specific commodities and to volume and acreage, they have tended to benefit larger crop-specific and regional-specific farms. Such programs coupled with changes in technology and economic conditions have encouraged increases in farm size. This has resulted in many small volume farms going out of business. Price support and crop allotment programs have been capitalized into increased land values, often raising the purchase price of the land as well as land rental, thus making it more difficult for new farm operators or land renters to get started or expand their operations. The 1977 price support legislation continues this trend as does the allotment system for tobacco, peanuts, extra long staple cotton and rice. However, farm production has increased and has become a significant part of the Nation's exports.

### Depression Era Gave Birth to Price Supports

Today's government programs of price supports to farmers had their roots early in the Depression era when the Federal Government realized it had to take an active role in remedying the problem of low commodity prices.

In 1929 Congress passed the Agricultural Marketing Act, establishing the Federal Farm Board. The Board was authorized to make loans to cooperative marketing associations. The associations, in turn, could make advances available to their members and make loans to stabilization corporations so they could purchase surplus products.

The Board never achieved its goal of raising farm prices however, and a new approach was taken in the Agricultural Adjustment Act of 1933. Among other actions, the act authorized the Secretary of Agriculture to reduce planted acreage or production through voluntary agreements with farmers, and to develop marketing agreements with processors to control prices paid to producers. The production control provisions of the act came to a stop in 1936, however, when the Supreme Court ruled them invalid.

Congress also passed in 1933 an act creating the Commodity Credit Corporation. It made available nonrecourse loans for cotton and corn. Since that time, the CCC has been used to carry out many federal programs.

Congress responded to the Supreme Court action of 1936 by passing farm legislation which became the backbone of price suport legislation into the 1970s--the Agricultural Adjustment Act of 1938. The legislation included programs of loans, acreage allotments, and marketing quotas for "basic" crops. Certain major crop producers received payments to bring them up to "parity" prices--the relationship between farm prices and costs which prevailed from 1910 to 1914.

Price supports were continued through various legislation, including the Agricultural Act of 1948 which provided 90 percent price-support levels for several commodities through the end of 1949 and a sliding scale of price supports thereafter.

The Agricultural Act of 1954 dealt with the problem of large agricultural surpluses. Even though acreage was limited, improved technology led to overproduction. The act provided for "set asides" of 400 to 500 million bushels of wheat and three to four million bales of cotton which were to be excluded in the computation of price-support levels. They were still to be included, however, when acreage allotments and marketing quotas were determined. The act also permitted more flexibility in setting price supports.

Further modifications were made in the programs through legislation of the next two decades. The 1960s saw income payments to farmers increasingly substituted for price supports. Legislators became concerned, however, over the growing size of the payments. The 1970 Agriculture Act included a $50,000 limitation on individual payments for wheat, feed grain, or cotton.

1973 Act encouraged production

The Agricultural and Consumer Protection Act passed in 1973 reflected the growing foreign demand for U.S. agricultural commodities and therefore encouraged maximum production. In an attempt to protect farms from price gyrations the concept of target prices was introduced. Deficiency payments were made to farmers with allotments if the national average price of the specified crop fell below the target price established by law.

The law also provided for loans to producers at levels below market prices. Deficiency payments could not exceed the difference between the target price and the price-support loan rate.

Payments were to be based on the farm's established yield and allotted acreage (or acreage planted in the case of cotton). Established yield related to the farm's acreage yield per harvested acre during the three preceeding years and allotments were based on planting limitations which had evolved through historical plantings. Both deficiency and disaster payments for the most part came under a $20,000 limitation except for rice payments which were set at $55,000 under the 1975 rice act.

## Benefits Concentrated Among Larger Farms

The Government programs were keyed to production; therefore the bulk of the benefits have accrued to those responsible for most of the production. This means that the small number of large farms which produce most of the commodities in this country (see p. 88 of ch. VII on Farm Size) receive the greatest proportion of Government assistance.

Statistics from the 1974 Census confirm that a slightly higher percentage of farmers in the larger sales classes (those selling $100,000 and above in gross agriculture products) receive direct Government payments and in fact the percentage of farmers receiving payments within each sales class rises as volume increases as shown in table 29. (See table 25 on page 89 for additional information.)

Table 29

Direct Government Payment by Volume of Sales, 1974

| | Volume of Annual Farm Product Sales | | | | |
|---|---|---|---|---|---|
| | "Part-time/ Subsistence" | "Small" | "Medium" | "Large" | "Largest" |
| | Less than $10,000 | $10,000-39,999 | $40,000-99,999 | $100,000-199,000 | $200,000 and above |
| Percentage of Farms Within Sales Class Receiving Government Payments | 8.42% | 10.50% | 12.55% | 12.69% | 12.95% |
| Average Government Payment Per Farm (of Those Receiving Payments) | $765 | $1,221 | $1,677 | $2,459 | $6,646 |
| Percentage of Total Income From Government Payments | 6.26% | 6.96% | 5.67% | 4.62% | 4.89% |

Source: 1974 Census of Agriculture.

Table 29 also indicates that per farm, the highest average payments went to farmers in the largest sales classes. The average payment in 1974 to a farmer with sales over $200,000 was $6,600 with some farmers in that category, of course, receiving significantly more. Small farmers in the range of $10,000 to $39,999 in annual sales received an average of $1,220 and those below $10,000 took in only $765 on the average. However, the Government payments to the smaller farmers amounted to a slightly greater percentage of their total income, i.e. 6.26 percent for the smallest farmers compared to 4.89 percent for the largest farmers.

The percentage distribution of payments among the various sales classes has become increasingly skewed towards the larger farms. In 1960, farms with above $100,000 in annual sales received only about 4.5 percent of the total government payments. That percentage had more than tripled by 1969. Government payments made to farms with sales under $40,000 dropped from nearly 85 percent to 68.5 percent during the same time. The 1977 Publication of Farm Income Statistics for 1976 payments stated that the small number of farms above $100,000 in sales received about 36.5 percent of the total payments and farms below $20,000 received about 23.5 percent.

According to Charles L. Schultze, Government price support progams raise net income proportionately more for large farmers than for small ones because they do not account for the higher expenses which a larger farmer would have incurred to bring in the additional cash receipts.

He explains that on "small" farms net income is a high percentage of cash receipts, primarily because of the importance of the farmer's own labor which is not factored in. On the "largest" farms, however, expenses for hired labor steadily climb, making the net income a smaller percentage of cash receipts, even though the farmer does obtain economies of scale in purchasing other input requirements and in marketing.

Since price supports raise prices and cash receipts above the free market levels by about the same percentage for large and small farms, Schultze concludes that this is, therefore, a bigger benefit to the large farmer who normally receives a smaller percentage of cash receipts as net income.

Since expansion costs and constraints facing the large farmer are less than for the smaller, there is therefore a greater incentive for the larger farmer to expand production up to the point where he can receive maximum payment benefits.

## Government Benefits Tend to Accrue to Land Owners

Price support and crop allotment programs also provide benefits in another way. They become capitalized into higher land prices, as well as land rental, giving a distinct advantage to the farmland owner who had the land before the subsidies went into effect. The benefits are captured in the form of capital gains when the original owner sells and become less of a benefit to the farmer as the land changes hands. The capitalization makes it even harder for a new farmer today to purchase land or expand his farm because he pays the high land price.

The benefits which have become capitalized are vested in the land holder, rather than the farm operator. Since it is probable that less than half of farmland today is owned by the person who farms it (see p. 105 of ch. VIII). many of the benefits may be lost to the farm sector entirely because they are going to non-farm landlords.

An example of the impact of Government programs on land ownership can be seen in peanut farms in Georgia. According to our farm interviews, many owners have retained their farmland in Georgia because of lucrative peanut allotments. Farmers who wish to expand must do so generally by rental, rather than purchase of the land. The land owners, not the operators, receive the benefits.

## Attempts to Limit Production Create New Problems

The set-aside program has contributed to the problems which are besetting smaller farmers. Farmers who are constrained by limited land acres are put in a relative disadvantage under those who can more readily afford to set aside 10 to 20 percent of their farmland. This is especially true of a farmer whose limited land resources are of prime quality. While our analysis earlier indicates that, on the average, land area is not the primary constraining factor on production for the smallest farmers, individually it has significant implications for the farmer who needs the income from every acre at his disposal.

The allotment system brought with it its own set of problems. Since it was based on historical planting, it encouraged farmers to plant the same crop acreage to gain the greatest benefits. The 1973 legislation did permit some flexibility, however, in that it permitted specified substitute crops without a loss of benefits accruing to crop

allotments. But, in more cases than not, crop allotments did not match up with what was currently being produced on the farm. Some producers received allotment payments for specific programs in which they were no longer engaged, and in other cases a neighbor producing the same crop received no payments because his farm did not have an allotment.

Recent inequities in the allotment system which resulted from the 1973 "deficiency payment" concept were highlighted in a previous GAO report. 1/ Under the rice program, farmers could plant crops other than rice on their rice allotments and still receive rice deficiency payments based on their total allotted acreage. Thus farmers received payments on rice they did not plant and market.

According to the report, an estimated $5 million of rice deficiency payments in 1977 went to farmers who had allotments but who did not plant rice on all or part of their allotted acreage. In fact, one farmer told us that, although he planted no rice he received a payment of almost $14,000. The farmer himself called this payment ridiculous.

Another significant change in the 1973 act was its attempt to move agricultural crop support levels away from the "parity concept" by establishing a national cost of production indicator. This provision was carried foreward in the new legislation. As indicated on Table 24 page 87, costs of production varied significantly by farm size classification in 1974. Cost of production was the highest for farms selling under $10,000 in gross agricultural products reporting an average of 96 cents in expenses out of every $1.00 of sales. On farms with between $10,000 and $199,999 in annual sales, production costs ate up two-thirds of the gross with production costs on America's largest farms accounting for 80 cents out of every dollar. Besides these size variations there are also geographic differences in the cost of production of the same products. These differences point out the need for further analysis of the net effects of using a national average cost of production techniques in future legislation so it can be assessed as to who and what regions benefit the most from this type of program determinant.

## 1977 Farm Act Again Emphasizes Crop Limitations

As legislation passed in 1973 reflects the boom years of agriculture in the early 1970s, the Food and Agriculture

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1/"Federal Deficiency Payments Should Not be Made for Crops Not Grown," GAO Report, CED-77-77, May 24, 1977.

Act of 1977 deals with the tremendous increases in production costs that followed 1973. The new law features generally higher price supports and more generous loan programs. Target prices will be computed based on changes in the national average cost of production, instead of average prices paid by farmers for inputs and crop yields as called for in the 1973 legislation.

The payment limitations for 1978 total wheat, feed grains, and cotton payments are double the 1974-77 crops limitation of $20,000, and will rise each year thereafter until 1980 when the limit for wheat, feed grains, upland cotton, and rice will be $50,000. 1/

According to J.B. Penn and William T. Boehm 2/ the establishment of a $20,000 program payment limitation in the 1973 act supposedly reflected the public's distaste in prior years for large federal payments being made to big producers. They then concluded that had this still been a prime concern of Congress the new legislation would have only allowed for an increase equal to inflation which would have raised the limit to only $27,000.

Under the new legislation, deficiency payments for the wheat and feed grain programs will be determined by the difference between the target price and the national weighted average market price during the first five months of that crop's marketing year (or the loan rate, if higher). Starting with crop year 1978, deficiency payments will be paid based solely on crops actually planted. The new payments will be more closely tied to current market conditions and farmers' own decisions, not administrative decisions and historical practices.

The national program acreage for wheat and the feed grains is the number of harvested acres the Secretary of Agriculture determines will provide the quantity necessary to meet domestic as well as foreign demands during the marketing year. Adjustments to the program acreage can be made by the Secretary in order to adjust for either excessive or low carryover stocks.

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1/"The Distribution of Farm Subsidies," Brookings Institute, 1971.

2/Research Issues Reemphasized by 1977 Food Policy Legislation.

A program allocation factor is determined by dividing the national program acreage for the crop by the number of acres which the Secretary estimates will be harvested for the crop. The allocation factor, however, cannot be lower than 80 percent or greater than 100 percent.

Each farmer is required to certify his acreage planting intentions as well as his actual acres planted. Then the individual farm program acreage is determined by multiplying the allocation factor by the acreage planted for harvest on the farm.

## Largest Farms Will Continue to be Chief Beneficiaries of 1977 Act

The Food and Agriculture Act of 1977 states that "Congress firmly believes that the maintenance of the family farm system of agriculture is essential to the social well-being of the Nation and the competitive production of adequate supplies of food and fiber." The legislation adds that, "It is neither the policy nor the intent of Congress that agricultural and agriculture-related programs be administered exclusively for family farm operations, but it is the policy and express intent of Congress that no such program be administered in a manner that will place the family farm operation at an unfair economic disadvantage."

Despite these stated goals, the 1977 act is expected to improve the relative position of the largest farms, many of which, while family-owned, hire extensive outside labor or are often not farmed by the owning family. However, the new act clears up the inequities of the 1973 allotment system which permitted deficiency payments without even growing the crop. It also provides for increased research to determine who benefits from the farm legislation. But it continues past policies which resulted in larger farms receiving the most government assistance.

It is known that the doubling of deficiency payment upper limits between 1977 and 1978 and its subsequent escalation to $50,000 by 1980 will benefit the largest farmers, but actual numbers of who will benefit cannot be accurately determined from data available. However, the USDA has estimated that nearly half of the one billion dollar increase in Government payments in 1978 will go to wheat producers. USDA did at one time provide data on specific program recipients, but it has discontinued this practice. Currently the Agriculture Department's Economic Research Service (now part of the new Economics, Statistics, and Cooperatives Service, ESCS) uses Census data to project what proportion of

government payments go to farms of varying sizes instead of using actual figures which could be tabulated by the Agricultural Stabilization and Conservation Service.

For example, according to the 1974 Census figures, 28,000 farms had over 500 acres of wheat. An analysis has not been made which would provide more detailed information on how these farms are distributed, however, and according to the example cited below wheat farmers having 1,270 acres or more could be eligible for the maximum deficiency payments.

In 1978 two emergency farm legislation changes occurred. The first increased the target price of wheat to $3.40, the latter raised the loan rate $.10 to $2.35 per bushel. With the maximum deficiency payment limitation of $40,000, the most acres that a farmer can plant and receive full program coverage for all of his crop would be about 1,270 acres assuming an average yield of 30 bushels per acre.

$$\frac{\$40,000}{1.05 \times 30} = 1,270 \text{ acres}$$

Since the maximum payments were $20,000 under the 1977 target price and loan rate, maximum payments would have been achieved with significantly less acreage. Thus the net effect of the new legislation is that the large farmer is encouraged to grow even larger so he can reap the maximum benefits.

In addition a farmer can participate in several Government crop programs simultaneously. In other words, the maximum payment can be earned from more than one crop program.

The set-aside provisions of the new act have similar advantages for the larger farmer. All farms are treated alike, with a provision for the equivalent of 20 percent of the acreage actually planted for harvest to be set aside. If a farmer who participates in the set-aside program reduces his 1978 wheat acreage by at least 20 percent, he will be eligible for target price payments and the loan program for the entire acreage. A participating farmer who does not reduce his acreage by the full 20 percent will get target price protection for at least 80 percent of his acreage and will also qualify for the loan program. A feed grain set-aside of 10 percent has also been enacted for 1978.

A farmer who does not participate in the set-aside program is not eligible for deficiency payments or loans, nor can he receive disaster payments.

## Target Price Concept Has Inherent Problems

The target price concept also benefits certain farmers more than others. The problem inherent in the 1973 target price program is heightened by the 1977 act because of high target prices now in effect to combat low commodity prices.

Those farmers who participate in the set-aside program will receive deficiency payments based upon the difference between the established target price and the national average price for that commodity, regardless of what price they actually receive for their product. Thus, a farmer who sells his grain for above the national average price, or even above the target price, still receives a government payment. The converse is also true. This price variation could be the result of time of marketing between product quality, or differing product demands.

For example, assume three participating wheat farmers sell their grain at different times for the following prices:

--Farmer Allen sells for $3.55 a bushel.

--Farmer Brown sells for $3.10 per bushel.

--Farmer Charles sells for $2.80 per bushel.

The target price is set for $3.40 a bushel for 1978 and assume that the national average price computes to $3.10 per bushel. Therefore each farmer will receive a 30 cent per bushel deficiency payment, based upon his program acreage and his established yield as determined by his local ASCS office.

With all other things being equal, Farmer Allen will actually receive the equivalent of $3.85 per bushel (45 cents above the target price of $3.40), while Farmer Brown receives $3.40 and Farmer Charles receives $3.10.

## Only a small number of farmers actually benefit from Government programs

Data taken directly from the 1974 Census points out that regardless of geographic area, only about 9 percent of all farms benefited from Government commodity programs. However, because most programs are crop-specific, and crops tend to be regionally concentrated, the proportion of national government payments varies considerably by region, as shown in Table 30. Farm payments have been concentrated in the North-Central and South regions, with farms in the Northeast receiving only three percent of the national payments.

TABLE 30 - Government Payments by Region - 1974

| | Total No. of Farms | No. of Farms receiving Payments | Percent of farms receiving Payments | Value of Payments ($1,000) | Percent of National Payments |
|---|---|---|---|---|---|
| National | 2,314,013 | 215,749 | 9 | 281,598 | 100 |
| Northeast | 127,531 | 12,992 | 10 | 8,072 | 3 |
| North Central | 1,017,367 | 95,600 | 9 | 125,333 | 45 |
| South | 930,099 | 87,780 | 9 | 96,357 | 34 |
| West | 239,016 | 19,397 | 8 | 51,836 | 18 |

Source: 1974 Census of Agriculture.

Implications

Americans pay for farm subsidy programs in two ways: through taxes to pay for budget outlays and through higher prices in the supermarket. In his Brookings Institute report Schultze contends that, since farm income has been historically lower than that of the non-farm sector, "The transfer of substantial sums from the non-farm to the farm population would thus seem likely to distribute income more evenly." However, Schultze concludes that farm subsidies have the opposite effect--providing the most to those with the highest farm incomes.

While a more detailed examination of the direct and indirect effects of Government farm programs is warranted it appears evident that these programs have influenced the structure of the American farm sector in the following ways:

--Because most of the programs are tied to production of certain commodities, farmers are encouraged to expand their farm size and plant certain crops, resulting in increased farm commodity specialization.

--Because crops tend to be concentrated in certain regions, the programs provided economic stimulus to some areas of the country and not to others.

--The price support programs encourage the adoption of new technology and the expansion of the farmers' land base exacerbating the trend towards larger farms.

--The set-aside program has also led to farm expansion, since farmers with an ideal equipment-to-land ratio tend to seek additional land to farm when they take some of their land out of production to qualify for set-aside benefits.

--Capitalization of benefits into land values raises the price of farmland, making it harder for new entrants into farming to purchase land. It also raises rental value of farmland, encouraging land owners, many of whom are not farmers, to retain their property and continue to reap the benefits of the Government programs.

If the Government wishes to alter the current trend toward fewer but larger farms, future legislation should take a different approach.

A recent Congressional Research Service (CRS) study by Dr. Leo V. Mayer 1/ stated that farm policy could be improved in five major ways. Mayer's recommendations are aimed at aiding the farmer with income between $2,500 and $40,000 in annual sales. CRS recommended that the Government:

--More stringently limit the size of federal payments to farm operators to reduce assistance to financially-sound farmers.

--Raise target prices to permit the middle-size farmer to receive amounts closer to the maximum.

--Limit the amount of credit a farmer can receive from the Commodity Credit Corporation and lower the interest rate farmers pay for the minimum amount of credit.

--Rewrite tax laws to help farmers even out income between good and bad years. Help smaller farmers learn how to use current tax benefits.

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1/"Agricultural Finance Issues and Policy Alternatives Raised by the Farm Protest Movement of 1977-78," Mar. 10, 1978.

--Adjust credit terms of the Farmers Home Administration to provide the lowest interest rates on loans of the size most commonly used by medium-size farms and higher rates on large borrowed amounts.

--Expand the 1976 marketing program which allows farmers to sell directly to consumers, thus cutting out payments to the middle man.

Need for further analysis

The 1977 food and agriculture legislation raises many questions that need answering before the effectiveness and social soundness of farm legislation can be evaluated. Penn and Boehm argue that the long-term cumulative effect of new farm legislation be studied, rather than independent assessment of each provision. We agree.

Issues

--Does the Federal Government need an overall farm policy, instead of one based on specific commodities, which will take into account all types and sizes of farmers?

--Can farm programs be made more effective and equitable?

--Should the social implications of assistance programs be assessed along with their economic impact?

--Should low volume producers be required to set land aside to qualify for Government risk aversion and disaster relief program?

--Should farm commodity programs be target-group-specific, that is, based upon farm income range as well as specific crops?

--Since the end result of farm programs is to provide income assistance to farmers as well as to reduce supply, should set-aside programs be revised to permit all farmers under a determined size to plant their entire acreage, with only planting above this amount subject to set-aside requirements? Would a sliding scale set-aside program be more equitable?

# CHAPTER X

## TAX LAWS DESIGNED TO HELP FARMERS OFTEN MISS THEIR MARK

Federal income tax laws have been formulated with the goal of helping the family farmer. Similarly, estate tax laws were recently revised to make it easier for a farmer to pass a farm on to his heirs. Yet the laws have provided both advantages and disadvantages to the farmers they were designed to help.

On the State and local level, property tax laws have been passed to lessen the farmer's tax load, as well as to discourage sale of agricultural land for development. These pieces of legislation vary considerably in their effectiveness and may conflict with the goals of other Government programs.

### Federal income tax laws have attracted outside investments to farming

Farming has often been attractive to nonfarm investors, and one of the primary reasons is the special set of tax rules which apply to farming. Although the rules were generally devised to help small family farmers, today they provide an excellent tax shelter for outside investors, placing pressures on the farmers they were designed to help. Special tax rules arise principally from three sources:

--A 1915 administrative decision permitting farmers a choice of accounting methods to use in reporting income for tax purposes.

--A 1919 Treasury regulation allowing farmers to write off capital expenditures incurred in developing orchards and ranches at the time they occur.

--1951 legislation which confirmed that livestock held for draft, breeding or dairy purposes could be treated as property held for use in a trade or business and thus produce long-term capital gains upon sale. A provision covering livestock held for sporting purposes was added in 1969.

The first two rules permit costs to be deducted before the income derived from the expenditures is realized. Thus a tax loss may be generated by the premature deductions, even though a true economic loss is never experienced. The third development builds on the previous tax incentives and permits

ordinary income to be converted into long-term capital gains subject to tax at a lower rate.

To be more specific, the 1915 decision gave farmers the choice between the accrual method and the cash method of accounting. Under the cash method inventories can be ignored for income tax purposes. In other businesses, tax must be paid on anything produced or purchased but not used up or sold during the year.

The 1919 Treasury decision also gave certain farmers permission to deviate from general tax rules. Producers of orchard, grove, and vine crops, as well as breeding livestock, were allowed to charge off as current expenses the costs of developing their capital assets to the productive state, even though no income was derived during that time. For most taxpayers such investment spending is generally not deductible from income as a current expense. The costs are instead required to be capitalized and recovered through depreciation over the useful life of the asset.

These rules were modified somewhat by the Tax Reform Act of 1969 which required that development costs of citrus and almond groves be capitalized for four years after planting. This provision was sought by the producers themselves because they wanted to protect their industry to the extent possible by minimizing outside investment for primarily tax purposes.

The treatment of most livestock as a capital asset was confirmed in 1951. Those raising livestock could reap substantial tax benefits by treating their livestock as long-term capital gains at the sale. This benefit is even greater if cash accounting is used. Expenses of raising the animals are deductible currently and the entire sales price is taxed as a tax-preferred capital gain. If accrual accounting is used, the increasing value of the animals is reflected in inventories.

The 1969 act restricted capital gains treatment of beef breeding herds in two ways. First, the required holding period to qualify for capital gains treatment was extended from one to two years. Second, breeding stock was made subject to the recapture of previously claimed depreciation upon sale.

Another provision of the 1969 Tax Reform Act also attempted to limit the ability to convert ordinary income into tax-preferred capital gains. An Excess Deduction Account (EDA) was established to recapture farm losses used to offset non-farm income when the farm property is sold. Although all farm losses could continue to be deducted from nonfarm income,

for taxpayers with nonfarm income over $50,000 the excess of farm losses over $25,000 had to be placed in a special EDA. Gain on subsequent sale of farm assets was treated as ordinary income for tax purposes to the extent of EDA balances. The remainder could still be handled as a capital gain. The 1976 Tax Reform Act basically repealed the EDA, however, ending any additions to the account after December 31, 1975.

The complex 1976 legislation did take several steps aimed at curbing use of farming as a tax-sheltered investment. Farm loss deductions were generally limited to amounts at risk. Thus deductions cannot be more than the taxpayer has at stake in the farm, such as cash funds borrowed, and property contributed to the operation. This rule applies to individuals, certain partnerships and small business corporations.

For farming syndicates (a partnership or other enterprise other than a regularly taxed corporation), deductions cannot be claimed for feed, seed, fertilizer and other farm supplies until actually used or consumed.

Also, starting in 1977, with two exceptions, the Tax Reform Act of 1976 required any farm corporation with gross receipts of more than $1 million per year to use accrual accounting and capitalize preproduction period expenses. The same rule applies to farm partnerships in which a corporation is a general partner. The rule does not affect family corporations or small business corporations (where members of one family own, directly or indirectly, at least 50 percent of the firm), but it does apply to family partnerships.

The 1976 law also included some new tax benefits for farmers. Farmers can postpone for one tax year income from livestock sales which are forced by drought, as well as Federal crop insurance payments.

Income tax laws have also affected the structure of agriculture in another way. The issue that different forms of ownership have different tax rates has always been and will continue to be a major factor in farm business ownership patterns. (See p. 108. ch. VIII.)

In The Tax Deduction Act of 1975, corporate income tax rates (for regularly taxed corporations) were reduced to 20 percent of the first $25,000 of corporate taxable income, 22 percent on corporate taxable income from $25,000 to $50,000, and 48 percent on all corporate taxable income above $50,000. Those rates were continued in the Tax Reform Act of 1976 and are included in the 1977 Tax Reduction Act for applicability through 1978. Thus a one person farming operation netting

$75,000 can alter sharply the Federal income tax liability by incorporating and paying a salary of $25,000. The highest marginal rate would probably not exceed 24 percent, certainly not more than 30 percent. This assumes, of course, that the family is willing to leave the $50,000 in the corporation for expansion.

The result is a substantial motivation to utilize the corporate form of organization, especially in times of high incomes. Recent steps taken by the House Ways-Means Committee during the summer of 1978 would further motivate the move towards the corporate form of ownership if it is approved by Congress. The first $25,000 of taxable income would be tax d at 17%, down from 20%; rate on the next $25,000 would be 20%, the third 30% and the fourth 49%.

Income tax rules have both negative and positive impacts on farmers

There are various explanations for the special tax treatment of farmers. Some experts say they were developed in recognition of agriculture's important place in the Nation's economy. Others say that the rules provide farm operators with a simplified method of accounting with which they are adequately prepared to deal.

In either case, times have changed substantially since the rules were first enacted and today many high-bracket taxpayers are drawn to farming investments to gain from the tax advantages. The tax rules are most advantageous to taxpayers with tax losses which are not true economic losses or someone with substantial nonfarm income against which to offset the farm tax losses. This may have contributed to the highly inflated value of farmland and assets, to the detriment of new farmers. Large corporations, while benefitting from the tax structure in general, are not permitted to use the cash method of accounting.

It needs to be remembered here, however, that approximately 60 percent of all farmers earn more than half their incomes from off-farm sources. Any modification in the provision permitting non-farm income to be averaged with farm income (or losses) could seriously alter the present farm structure to an even greater extent. Evidence seems to indicate that newer farmers need the off-farm income to help in the cash-flow of the farm during the developmental stage.

Because certain commodities were singled out for preferred tax status, the impact of nonfarm investors is not uniform. Such investment was felt strongly in states such

as Florida with its large citrus industry, because of the tax advantages available to that crop until the 1969 Tax Reform Act.

On the other hand bona fide farmers may have also gained from the influx of nonfarm capital. It is possible that investors seeking tax shelters contributed to the adequate supply of capital available in agriculture in recent years.

In any event, the preferential treatment provided to agriculture may amount, in essence, to a subsidy of farming. Unlike other subsidies in the form of direct Federal payments, however, it is not subject to the budgetary control of Congress.

## Congress attempted to deal with estate tax inequities in 1976 law

While the United States incompassed massive changes since World War II, the Federal estate tax structure remained virtually unchanged from the mid-40s until the Tax Reform Act of 1976. At that time, Congress dealt with some of the provisions that placed hardships on farmers wishing to pass their farms on to their heirs.

Under the old rules when farmers died their estates were taxed at their "highest and best use." With farmland values rising beyond the land's capacity for farming profits, the heirs were frequently in a position of selling off much of the land to pay the estate tax.

The Internal Revenue Code did permit heirs to pay the estate tax over 10 years if a major part of the estate was a closely held business, such as farming. However, the heirs had to pay interest on the unpaid balance at approximately the market rate.

Provisions of the Tax Reform Act of 1976 attempted to ease some of these burdens. The amended provisions permitted the estate, under certain conditions, to value the property used for a closely held business at its actual value instead of its highest and best use, providing this did not reduce the property value by more than $500,000. Thus it is most valuable to smaller and mid-range farms. If this provision is used and the property passes out of the family or is used for an alternative purpose within 15 years, the tax advantages of the lower valuation would be payable to the Federal Government.

Regulations governing deferred payment of tax were also improved. If more than 65 percent of a decedent's adjusted gross estate consists of an interest in a farm or other closely held business, tax payments on farms may be deferred for 5 years (with only interest due on the tax liability during that time) and then the tax may be paid in equal installments over 10 years. An important change is that the outstanding tax liability attributable to the first $1,000,000 of the descendent's interest in the farm is subject to a special low-interest rate of 4 percent per annum. Interest on the balance of the liability is subject to a rate which is currently 7 percent. The extension, however, is available only in the event of under hardship.

Before 1976 the lifetime exemption for estate tax amounted to $60,000 and the gift tax exemption was $30,000. The new law raised these amounts and changed them to a single tax credit which is subtracted after the estate tax is computed. Basically, the credit doubled the existing tax exemption in 1977 and almost tripled it in 1981 and subsequent years. The tax credit will be step-phased and will be equivalent to an exemption of $120,666 in 1977, $134,000 in 1978, $147,333 in 1979, $161,563 in 1980, and $175,625 in 1981 and in succeeding years.

Another important change is the increase in the tax-free amount a husband or wife may leave or give a spouse. The new bill raises the marital deductions to half the estate or $250,000, whichever is greater.

A change in the tax basis on inherited property encourages heirs to hold onto their new property. Previously, the tax basis on inherited property was increased at the time of death to its fair market value. This meant that the appreciation in value between the time the descendent acquired the property and the date of death was not subject to capital gains. Thus, if an heir later sold the property, he paid taxes only on appreciation in value between the date he received the property and when he sold it.

The new law, however, requires an heir to carry the decedent's tax basis. This revision usually means larger capital gains taxes for the heir if he decides to liquidate the estate. This may result in the heir being reluctant to sell highly appreciated assets for fear of paying large capital gains taxes.

The net effect of the Federal Estate tax revision may vary considerably by the fact that each state has differing inheritance regulations. This may be particularly true in

the case of land holders who die intestate since the farm ownership may become fragmented among many individuals. In many cases a sale may be forced by a minority of the heirs in open auction.

Federal estate tax revisions may have mixed results

As with any legislation, advantages and disadvantages exist simultaneously in the estate tax revisions of 1976.

The law appears to substantially improve the individual farmer's ability to pass his farm estate to his heirs. However, the revisions may, in fact, adversely effect the family owner/operator concept.

The tax revisions were obviously aimed at helping persons operating farms. To value farmland on a current use basis rather than highest and best use, the land must be operated as a farm by the decedent or a member of the decedent's family, or one who had to participate materially in its operation, for five or more years during the eight-year period ending with the decedent's death.

This effectively limits the benefits to only those actively invloved in the farming operation. It encourages eligible farmers to retain land until death. There are several additional ramifications.

--Farmers may avoid giving land as gifts during their lifetime, since gifts are not eligible for the tax benefits.

--Farmers may refrain from selling the land to anyone other than a family member.

--Aging farmers may be encouraged to purchase more land.

The net effect of the above may be to "lock" farmland into a "landed aristocracy"--making it more difficult for a new farmer with no family ties in farming to acquire land, warns Iowa State University Professor Neil Harl. This is exascerbated by the carry over rule, requiring an heir to carry over the decedent's tax basis, and thus creating strong disincentives for selling the land out of the family.

Another effect of the new rules is to increase the value of farmland as a hedge against inflation. As currently written, restrictions should help farmers be successful in

bidding away land from nonfarmers. The rush to own farmland would be dramatic, however, if nonfarmers are able to circumvent the "material participation" provision, requiring the decedent or family member to have materially participated in the operation of the farm in recent years. Without this requirement, the special valuation procedure would be open to all investors in land. Farmland would likely become even more appealing as a retirement home or rural home for white collar workers. It is doubtful whether the existing farmer could compete for land. This might, however, bring new blood into the rural areas to the benefit of the community.

IRS has proposed (July 19, 1978 Federal Register) that in order to qualify for the special farmland valuation, material participation by the owner must be proved through a written agreement with the tenant indicating that the land owner has participation in the production or the management of production. He must then carryout the actual material participation in order for his estate to qualify for special valuation at his death.

If this proposed regulation is approved it may cause substantial modifications in the present informal leasing arrangement for farmland that now exists. The expansion of farm size through land rental agreements has been very important. Most of the farmers we interviewed only had verbal lease arrangements.

The net effect could be that the farm operator may lose some of his control over the land he operates as owners seek to qualify under the special valuation clause for inheritance purposes.

State and local taxation differs in scope and emphasis

Many states, believing in the value of farmland and other open space uses, have enacted laws to ease the property tax burden on the owner of such lands.

The first differential taxation law was enacted in Maryland in 1957 and 42 states had similar laws as of April 1976. Some of the remaining states are considering such legislation or have laws which provide some form of preferential treatment.

There are three major types of differential tax laws and they appear in a variety of ways in the different states.

--Preferential assessment laws permit valuation of land according to its current use. They contain no penalty for converting farmland to non-agricultural purposes.

--Deferred tax laws also permit valuation based on current use, but they impose sanctions on owners who change the use of the land.

--Restrictive agreement laws permit local governments and landowners to enter into agreements to restrict use of the land in return for differential tax treatment.

Differential assessments can serve important functions. If the purpose of the law is simply to cut the farmer's taxes because it is believed they are too high in relation to the rest of society, then the preferential assessment approach is adequate.

However, preferential assessment laws do not distinguish between farmers and speculators. Further, they do nothing to restrict use of the land. To achieve these purposes the state must enact one of the other two types of laws.

A deferred tax or a restrictive agreement will limit the tax concession to someone who maintains the agricultural use of the land. The effectiveness of either type of law depends upon the penalties built into the specific legislation--the number of years for which a rollback of taxes is required if the nature of the land is changed, payment of interest on the rollback, etc.

A differential assessment will have to compete with other financial considerations the landowner faces. If an owner stands to make a large profit from sale of the land to a developer, that may override any other considerations. For example, a recent study of the New Jersey law showed it had minimal effects because it provided a tax saving of only $10-40 per acre, but sale of a farm for development could bring capital gains of $2,000-$10,000 per acre.

In recent years the trend in state legislation has been away from the preferential assessment laws and towards the more stringent deferred taxation or restrictive agreement laws.

Implications

While tax laws have usually been geared to helping the family farmer deal with his financial burdens and encourage

the continued use of the land for farming, the various pieces of legislation have had mixed results.

Aside from the problems inherent in each separate act, a more disturbing aspect is the lack of coordination between various governmental levels. For example, many states have passed differential taxation laws to provide tax benefits to those who use the land for agricultural purposes, but the federal government is implementing programs to urge that land be taken out of agricultural production through set-asides. (See p. 123 of ch. IX.)

Similarly, property tax is mainly a local issue and it can vary greatly between counties within a state or can conflict with state or national tax policies. Within Maryland, for example, the first State to enact a differential taxation law to preserve farmland, Montgomery County enacted a special 5 percent farm sales tax, to be paid by the owners at the time of sale of the farms. Payment is required even if the farm is to continue in agricultural use. Taxes of this type tend to become incorporated into the value of the land, making it even harder for newer farmers to purchase land in the county.

Recently there have been a few Universities and private interest groups that have been working at the State and local levels to help facilitate intergenerational land transfers so that the land can remain as a unit for farming by the heirs. According to these groups it is the small land holder and often the minorities who do not adequately plan for an orderly generational transfer of their estates after their death.

At this point in time, there has been little in-depth analysis of local property taxation and estate liquidation sales and its effects on local and the state or national farm structure. This type of overview is needed because individual property assessment and taxation policies are significant factors affecting the farmer's financial well-being because they do not correlate with income.

Issues

--Given the evolution of the farm structure, are the existing tax laws achieving their intended purpose? Or are steps that are being taken which individually appear to be assisting the farmer, actually collectively hurting him?

--Should there be greater coordination between the tax-related programs of Federal, State and local Governments?

--Will the new estate tax regulations create a landed aristocracy because of the benefits which encourage farmers to keep the land within the family? Will this stimulate nonfarm investments?

--What role should the Federal Government play in assisting farmers with farm business and estate tax planning to make the most of tax laws written to their advantage?

## CHAPTER XI

## THE TREND TOWARD LARGER FARMS HAS FUELED THE DECLINE IN RURAL COMMUNITIES

With the significant drop in the number of farms in America has come an equally dramatic drop in farm population. Over 15.6 million persons lived on farms in 1960. Under 10 million were considered farm population by 1970. The rate of decline slowed in the early 70s with farm population dropping by an average of about 300,000 each year. As of April 1977, the farm population was down to 7.8 million.

More significant than the actual numbers, however, are the precentage figures which show the shrinking political base of the farmer in recent years. Thirty percent of the U.S. population lived on farms in 1920. This had dropped to 15 percent by 1950, to 5 percent by 1970, and is 3.6 percent in the 1977 tabulation.

The predominance of larger farms has resulted in more than a simple reduction in farm population numbers. It has also increased the number of farmland owners who do not operate the farm on a day-to-day basis. As a rule, they do not take as active a role in community affairs as a family-type farmer would, and they frequently do not even live in the farm community, taking the revenues from the farm operation or rent attributable to the land outside the area.

### Rural losses have been significant in productive workforce

Reduced farm and farm operator numbers and outmigration have been much more extensive for some farm operators and portions of the farm population than others. Net reductions in farm and farm operator numbers have occurred largely as a result of declines in small, family-type farms and their operators. The operators of tenant-type farms, particularly sharecroppers in the South, have also declined at a rapid rate. Hired workers employed for short periods of time have declined more rapidly than those employed long-term.

The outmigration of farm people has been highly related to their age and sex. Young people aged 16-25 especially high school graduates and females, have accounted for disproportionate amounts. As a result, each person of working age in the farm population has larger numbers of both very young and old people to support than in the rural nonfarm and urban sectors.

The continued loss of youth and the growing number of the aged pose special problems for the outmigration areas. A middle-income family spends a substantial amount, nearly $10,000 to $15,000 to raise and educate a child, and a community invests a near equivalent. The loss of this productive member means a community loss of income and support. Although the individual may earn more elsewhere, there is no replacement. The aged, in contrast, are past their productive years, and like the very young, contribute less than productive members. Thus, the loss of youth, coupled with the increase in the aged, places greater financial burdens upon the productive segments of the community. Loss of potential leadership, loss of continuity between generations and the dismembering of the community are still further implications of population loss.

There is no strong evidence that outmigration has improved job opportunities, reduced unemployment or brought about a relative increase in per capita income in rural communities. One reason may be depletion in the economic base of the rural sector, not merely as a consequence of declining population, but also from the change in composition of population. Older people are more likely to have fixed incomes and invest less in the community. Property values decline, reducing the tax base. The number of persons per household declines and per capita costs of service delivery increases. In sum, the depletion of population and selectivity of this migration place the farm-base community at an economic disadvantage.

Local institutions have felt the impact of population declines

As the farm populations have declined, the impact has generally been felt by local institutions and organizations. Many of the businesses and services located in these areas derived a major portion of their customers from the farm population. Retail stores have reduced their product lines and services. This has led to reduced patronage from local people, which leads to further business decline.

Improved transportation has allowed both farm and nonfarm customers to bypass closer centers for more specialized goods and services in larger, more distant communities. This phenomenon was reported in several of our case study interviews conducted in farming areas around the country. Typically, farmers in North Dakota predicted a further decline in rural business because those stores do not have the capacity to serve today's more sophisticated farmer. A larger Virginia farmer traveled to Ohio to buy chemicals wholesale and a big

Maryland dairy farmer went to Kansas for special harvesting equipment.

This negative impact on the business community has reduced employment opportunities for the nonfarm population particularly young people completing school. In those places unable to recruit new industries and beyond commuting distance to better opportunities, those unable to obtain satisfactory local employment are forced to go elsewhere. Most often this is to a distant larger community.

Some research suggests that farm trends of the 1970s will have a great impact on rural business because of changes that occurred in these areas in the decades previous. A 1969 Illinois study by False and Riffe of changes in towns of less than 2,500 in size found that between 1940-60 these towns provided fewer consumer-oriented services, especially in smaller villages. These changes narrowed the service base on smaller rural towns and made them even more dependent on their functions as supply centers for farm production inputs. The effects on these rural businesses should therefore be substantial, with fewer farms becoming the rule and better transportation permitting farmers to go outside their communities for their needs.

The sizes and number of schools and churches in places losing population has also dropped. Increased educational costs result from the need to bus students in consolidated districts. Small schools also have high rates of teacher and administrator turnover. Churches losing members, in most cases, experience reduced financial support, curtailed programs and high pastor turnover rates.

Because political representation is based on the one-man, one-vote principle, farm residents have experienced a decline in all levels of political power. One study of population-loss areas found nearly all parts of local government lost autonomy because of the decreased importance and vigor of lower government bodies, as well as the loss of traditional functions through consolidation of services and funds.

The changes in political structure were necessitated by the narrow and, in some cases, declining tax bases of the remaining population. Houses and business buildings are frequently unoccupied, decline in quality, or are destroyed. When farms are purchased for expansion, the buildings are often destroyed to reduce taxes. The cost of government services increases for those who remain in the area, frequently with no change or with a decline in the services provided.

There is some evidence that declining towns may rely heavily on fund transfers from Federal and State Governments. Yet with the declining political base, these funds are often difficult to obtain.

The effects of large-scale farming and population drop on the surrounding community can be seen clearly in two major studies of farming communities in California's San Joaquin Valley. Residents of communities with smaller scale cropping patterns had much greater access to a wide variety of social services, including medical facilities and schools than those who lived in areas where larger-than-family size farms predominated, according to a 1975 study by Fujimoto. That study confirmed the results of similar research conducted in the early 1940s by Goldschmidt which showed a small farming community to be much more dynamic.

Another part of the decline spiral of rural places is that as social goods and services decline with population loss, these communities become less attractive places to live. This encourages outmigration of even those who have or could obtain local employment.

## Reported growth of "nonmetropolitan" areas ignores many small communities

There have been several reports recently of a shift in population back to nonmetropolitan areas since 1970. According to the Economic Research Service (ERS) of the U.S. Agriculture Department, the nonmetropolitan population increased by 6.6 percent compared with a metropolitan growth of 4.1 percent. More than half of recent nonmetropolitan population growth has come from net migration, amounting to 1.8 million people.

Regionally, the ERS found rapid growth in nonmetropolitan counties in the mountain West, northern and central Rockies and inter-mountain basins of the West. These are areas where the base population has been small and sparsely settled. The Ozark region experienced increased population as did the north country of Michigan, Wisconsin, and Minnesota. The previously declining upland areas of the Southeast have also grown in size in recent years.

Population declines were reported in the Great Plains, in the Mississippi Delta, through scattered areas of the Corn Belt, and lower parts of the South. But ERS indicated that even these declines are slower than previously.

These statistics on population shifts may be misleading however. The ERS conclusions are based on Census data and the Census of Population enumerates only legally incorporated communities or those with populations of 1,000 or more. This leaves out unincorporated farm trade centers and many low-population areas.

To illustrate the potential magnitude of error, one can look at the communities within Michigan. From 1930 to 1970 Michigan contained 1,329 communities of from 75 to 2,000 people, yet only 363 were enumerated by the Census. Of the 1,117 areas with populations from 75 to 1,000, only 196 were enumerated by the Census. While only about 9 percent of the total 582 Michigan communities counted by the Census declined from 1930 to 1970, nearly 44.5 percent of the 921 areas missed by the Census experienced decline.

Even if the reported shift to nonmetropolitan areas is an accurate one, the implications for rural trade centers and communities are not clear. Total population in nonmetropolitan counties with over 35 percent of the work force employed in agriculture continued to lose population from 1970 to 1973, though at a lower rate than before. In addition, increases in the total population of counties may have little or no significance for smaller, rural areas in those counties. If a larger percentage of the population growth is located in or by the larger county area, it may have no significant effect on the smaller places.

The increase in population in nonmetropolitan areas, even if accurate, cannot change the dramatic downshift in population living on farms.

Dual income farmers benefit rural areas

One recent trend in agriculture is actually a boon to rural areas. That is the increasing number of dual-income farmers. According to the 1974 Census, nearly 37.5 percent of farm operators reported their principal occupation to be somethng other than farming, with almost 68.5 percent of all operators reporting off-farm income. About 35 percent of farm operators took in more from their off-farm jobs than they did in selling farm goods.

These dual-income farm operators are frequently an integral part of the rural community wnere they reside. Instead of filtering money out of the area, they bring in earnings from the neighboring urban areas. This trend is likely to continue as new farmers find it almost impossible to purchase farms large enough to provide necessary

income. It may also be symbolic of the "back to the land" movement, which is attracting many urban workers.

## Implications

The magnitude of changes in the farm community relates to the changes in farm structure which are occurring. The smallest impact is felt by those areas which continue to be dominated by family-size farms. The community effect becomes increasingly magnified as the structure changes to larger farms with nonowner managers or the larger still industrial farms, possibly owned by nonfarm corporations. The impact of such structural changes, while perhaps significant at the national level, can become paramount at the local level.

As family-size farms are replaced by larger farms, the work force will contain a higher proportion of hired workers. Compared with owning managers, these workers have lower levels of education, job and residual stability, and wealth. At the same time, they tend to have larger families, a higher percentage of unmarried males among them, and they raise youth and total dependency ratios along with rates of rural farm outmigration.

Another effect of increasing farm size is that a higher percentage of nonmanaging landowners reside outside the community, resulting in a loss of revenue for the area. Rental payments leave the community, instead of being spent or invested locally. In 1970 an estimated $1.5 million in rental payments went to nonfarm landlords, many of whom do not live in the communities in which their farms are located. It is not known how much of this can be balanced off by the dual-income farmer who brings capital into the area.

Another potential effect is the long-range deterioration of the economic base in farming communities through the depletion of the community's major resource--land. A frequent accompaniment of farm management by nonlandowners has been the exploitation of the soil through over-cropping, inadequate fertilizer application, soil erosion and poor conservation practices. The greater the extent to which this occurs, the lower the productive capacity and income-generating potential of the land.

It has also been charged that large-scale farmers bid up the land value beyond what is justified by normal returns, pricing established and beginning farmers out of the market. The community also experiences a basic structural change in

the creation of two classes--the landowners and hired workers --where previously a homogenous class existed.

Issues

--Since Census statistics enumerate only incorporated communities or those with populations of at least 1,000, can statistics be improved to accurately reflect what is occurring in many of our Nation's smallest communities?

--Is there a need for improved Federal action in rural development activities and programs?

--Has the declining rural economy had a negative effect on the rest of society, economically or socially?

--What can or should be done to stimulate off-farm employment activities in rural areas? What role should the Federal Government play in this area?

## CHAPTER XII

## SERIOUS GAPS IN DATA HAVE MADE THE PICTURE OF THE CHANGING STRUCTURE OF AGRICULTURE INCOMPLETE

While it was possible to provide an overview of the changing structure of American agriculture, the picture is far from total because of some serious problems with the completeness and the reliability of existing information, as well as critical gaps in the primary data sources.

Even if these gaps in specific data can be filled in at a later date, it is hard to effectively analyze the causes, impacts, concerns and implications of such information without more frequent direct contact with today's farmers. We attempted to deal with this problem by utilizing the case study approach--farms of varying sizes (part-time, small, medium, and large) were interviewed in different geographic regions and with different cropping systems. In addition, we took a brief look at the USDA Firm Enterprise Data System to get a better understanding of forces affecting today's typical farmers.

### The analysis of farm structure was hampered by old data

Our study included a thorough review of much of the existing primary and secondary data sources on farm structure, including the newly published (12/77) 1974 National Agricultural Census summary information. Various State and private sector-related research reports were also reviewed.

The analysis was hampered by old information, evidenced by the fact that the principal data source, the 1974 National Agriculture Census summary volume, was only recently available. While State level data became available in 1977, the delay in national figures meant that many of the USDA publications prior to that time were based upon trend data from the 1969 Census of agriculture. In addition, the 1974 Census year, was an unusual year for agriculture, with near record incomes, making it even more difficult to derive implications for 1978 and on.

### Lack of coordination among Federal agencies and among divisions of the Department of Agriculture detract from the data available

Further constraints on analysis of farm structure data are caused by the lack of collaboration among Federal departmental agencies as well as among the various organizational

entities of the U.S. Department of Agriculture. Coordination among Federal agencies has been hampered by confidentiality mandates, designed to protect the privacy of farm firms, at the Internal Revenue Service as well as the Bureau of the Census.

One of our recent reports recommended to Congress that the confidentiality clause in IRS legislation be amended to permit IRS to provide USDA with the following information for statistical purposes only: Name and address of farmer, social security number, gross sales, gross profits, business location, number of farm laborers, and labor costs.

Other structural information could also be made available to USDA, such as type of organizational structure (corporation, partnership, sole proprietorship), as well as ownership of farm land.

Likewise disclosure problems constrain a restructuring of the data presented to USDA from the Census to facilitate analysis. This problem will become more pronounced as the trend toward larger and fewer farms continues. To illustrate the problem, all wheat farms having 500 acres and over are grouped together. Thus, it is impossible to determine how many wheat farmers have over 1,000, 2,000, or 10,000 acres, which would appear as a necessity for sound farm policy formulation.

We also found that information being collected by one USDA agency, such as farm records of ASCS, are not being utilized by other USDA divisions. The annual ERS publication of Farm Income Statistics, for example, provides estimates of government payment by sales class based on Census data projections, instead of actual ASCS information. As a result, the July 1977 publication of Farm Income Statistics (which) for the first time utilized preliminary 1974 Census data) resulted in significant revisions in what the public was being told was the case in the 1976 publication. To illustrate, the 1976 publication stated that 20 percent of direct government payments went to farmers having over $100,000 in farm sales during 1974 and 1975. This distribution was revised upwards, however, to 31.5 and 34.3 percent, respectively, in the 1977 issue. To further cloud the picture the July 1978 publication again dropped these estimates to 25.2 and 20 percent for the same years.

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1/"The Statistical Reporting Service's Crop Reports Are Not Used by Farmers," GGD-78-29.

## Budgetary considerations also affect data quality

Faced with budgetary constraints, the costs of collecting information could also bias USDA report quality. Recently, the USDA was faced with a half million budget cut for various crop and livestock reporting publications. In order to cope with this budget cut on the livestock side, Iowa was taken off the list of seven States for which monthly cattle on feed reports are made. The rationale for elimination of Iowa was that its many smaller feedlots made its data difficult and expensive to collect. The final result, however, will be a report which overrepresents large feedlots.

A similar data collection problem develops when trying to assess the vitality of our Nation's rural areas. USDA projections have mainly been derived from Census data, which enumerates only legally incorporated communities or those with population of 1,000 or more. Therefore, countless smaller farm communities go unaccounted for.

## Implications

Many data gaps hamper the ability of policymakers to carry out an effective timely and rational decisionmaking process which can positively influence the trends in American agriculture.

In addition more precise data on farmers' net income and relative well-being should be beneficial to not only the policymakers but to farm groups, agribusiness interests, as well as rural planners and developers.

Farm structural information could be combined with all other types of farm production statistical information into a systematic data collection review and feedback system. Improved information on the changing structure and character of American Agriculture is needed, if policymakers are to be in a position to take actions which will be effective for the total agricultural system.

## Issues

--Can properly targeted and implemented farm policies be developed and evaluated without more complete and reliable information on the changing structure and characteristics of the U.S. farm sector?

--Could a more complete understanding of the total agricultural system be gained through better coordination of data gathering activities of the various Federal agencies?

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