

# U.S. Agriculture: Hard Realities and New Opportunities

By *Marvin R. Duncan*

The U.S. rural environment has changed dramatically in recent years. Its agricultural sector has evolved from a relatively isolated and independent sphere of economic and cultural relationships to a sophisticated business sector that has been almost fully integrated into the national and world economies. Worldwide crop conditions, monetary exchange rates, world economic conditions, and interest rate differentials now influence the financial performance of the agricultural business in the United States.

The growing awareness of the extent to which agriculture touches the lives of both rural and

urban people has led to a broadening of the interest groups that influence farm policy. Disappearing are the days when farm income support and soil conservation totally drove that policy. In the future, people concerned with food safety and the environment will make their voices effectively heard. Those concerns could result in marked changes in agricultural production and processing practices in the years ahead.

Public policymakers have an uneasy feeling that the long-term problems of farmers and the agricultural sector cannot be solved by traditional commodity programs alone. Moreover, it is increasingly apparent that rural America's problems are much broader than the farm or agriculture itself. A growing realization is that the more fundamental challenge is to broaden economic opportunity in rural America. In doing so, many of the problems facing farmers and rural people could be eased. Therefore, the focus of policy should perhaps become one of providing opportunity for people rather than simply relying on payments for pounds or bushels.

The billions of taxpayer dollars being spent on agriculture are destined to be evaluated against

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criteria that reflect a broad range of public and social concerns. Agricultural programs and policies, as well as agricultural practices, will no longer be determined solely by the traditional farm interest groups, which means that the traditionalists will be seeking new coalitions.

Economic, demographic, technological, and trade developments have all played a role in altering socioeconomic conditions on the farm and throughout rural America. They will continue to do so in the years ahead.

### Forces of change

This article identifies and discusses the forces of change that have redefined the identity of agriculture and of farmers, and redefined the sector's role in the national and international economies. The article then discusses the policy issues for the 1990s and the interlinkages between agricultural policy and the challenge of broadening economic opportunities in rural America. Finally, the article examines a number of trends that provide parameters within which the policy development will occur and other trends that provide opportunities for policymakers to improve the economic performance of U.S. agriculture and rural America.

### *Agriculture's role in the general economy*

Agricultural traditionalists have always emphasized the importance of farming to the national welfare. Typically, they assert that a strong rural economy will produce a strong national economy. However, as important as agriculture is economically and culturally, its role in the nation's economy has eroded rather steadily over the past half century.

The food and fiber system, from the farmer to the consumer, includes all economic activities supporting the production, processing, and distribution of agricultural goods and services.

In 1975, this system employed 21.0 percent of the civilian labor force and accounted for 20.4 percent of gross national product.<sup>1</sup> Ten years later, it employed 18.5 percent of the labor force and accounted for only 17.5 percent of GNP.

The farm production sector is a small, but important, part of the whole food and fiber system. It employed 2.5 million people in 1985, or 11.7 percent of total agricultural employment.<sup>2</sup> This is only 2.1 percent of the total civilian labor force. From 1947 to 1985, increases in final demand for agricultural products were matched by increases in farm labor productivity, which helped to keep employment in the farm sector relatively stable over this period at about 3 million people.

The farm sector's contribution to GNP, while varying from year to year, is declining. It dropped from 2.7 percent of GNP in 1975 to 1.8 percent in 1985. The percentage of personal consumption expenditures going for agricultural products has also changed significantly over the past 40 years. In 1947, for example, 44 percent of total personal consumption expenditures went for food and fiber products; 31 percent alone went to purchase food.<sup>3</sup> By 1985, total personal consumption expenditures going to food and fiber products dropped to 25 percent.

Food expenditures account for about 15 percent of family spending today. Because the farmer's share of the consumer's dollar is relatively small, fluctuating farm prices have only a small effect on overall consumer prices.

<sup>1</sup> Chinkook Lee, Gerald Schluter, William Edmonson, and Darryl Wills, *Measuring the Size of the U.S. Food and Fiber System*, Agricultural Economic Report No. 566 (U.S. Department of Agriculture, March 1987).

<sup>2</sup> U.S. Department of Agriculture, Statistical Reporting Service, *Agricultural Statistics, 1987* (1988).

<sup>3</sup> Lee and others, *Measuring the Size . . .* (March 1987).

The fact that agriculture's role in the general economy is decreasing will likely lead to a vastly different public perception about this sector in the future. Arguments that agriculture should be protected because it is unique will continue to fade as commercial farmers are recognized as businessmen. The American family farmer of the future will face the reality of a farm sector that will be expected to succeed on the basis of its business performance in increasingly complex national and world economies.

### *Demographic trends in rural America*

Agriculture is no longer the economic balance wheel for the United States; it is also no longer the primary focus of rural living. During this century, rural America has undergone a dramatic transformation, moving from the center of American life to a smaller, but still significant, component of the U.S. economy.

According to the U.S. Bureau of the Census, the rural population in 1987 was 63.9 million people, or just over a fourth of our total population. However, only 2 percent of the nation's population—about 5 million people—had a farm residence in 1987. This figure contrasts sharply with 1920, when almost 32 million people, or 30 percent of the population, lived on farms.

The 2 percent figure for 1987 is destined to decline further as the U.S. population continues to grow. In fact, according to the Census Bureau, 75 percent of all U.S. residents now live in metropolitan areas. In 1963, it was 63 percent. For the record, a metropolitan area includes a central city of at least 50,000, and towns and cities economically tied to it. Nonmetropolitan areas are rural, beyond the suburbs.

The decline in farm numbers has been occurring almost at a steady pace for the past 50 years. Even the recent period of financial stress did not materially affect the exodus rate, which has averaged about 2 percent per year throughout the

post-World War II period.

While farm numbers will continue to decline from today's figure of about 2.2 million, they could begin to stabilize by the year 2000, especially if off-farm income opportunities expand in rural areas and permit more small and mid-sized farms to stay in business.

Most U.S. farms appear too small to provide an adequate income to the families that reside on them. Indeed, the data indicate that farms of under \$20,000 in annual sales typically lose money on farming operations.<sup>4</sup> However, on average, the residents of these farms earn enough income off the farm to obtain family income approaching that of the average U.S. farmer, but still less than the average nonfarm family income of almost \$35,000.

The disparity in farm size will continue to widen in the future because the mid-sized farmer will be pressured either to expand to achieve scale economies and/or more income, to scale back farming operations and seek off-farm employment, or to leave farming altogether. Mid-sized farms with sales of \$40,000 to \$100,000 and average family incomes of \$28,000 continue to shrink in numbers. These farms numbered 360,000 in 1981 and today number 290,000.

Currently, farms with annual sales greater than \$500,000 account for almost a third of all sales, yet they represent just 2 percent of all farms. In the years ahead, this relatively small group of farmers will increase somewhat and will account for an even larger share of total production. Rural communities that are primarily geared to serve the disappearing middle group of farmers will face serious economic challenges.

What is equally profound in its policy implica-

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<sup>4</sup> U.S. Department of Agriculture, *Economic Indicators of the Farm Sector: Farm Sector Review, 1986*, ECIFS 6-3 (January 1988).

tions is the increasingly nonagricultural character of rural America. In 1987 only 9 percent of the Americans living in nonmetropolitan America were closely identified with farming or agribusiness.<sup>5</sup> Instead, manufacturing and mining were far more important in providing employment opportunities. For example, 40 percent of new job formation in nonmetropolitan America is in these endeavors. As a result most rural Americans are relatively untouched by current agricultural policies.

### *Rural lifestyles*

Many Americans have an out-of-date view of the lifestyle and aspirations of farmers—a view more consistent with the picture painted in John Steinbeck's *The Grapes of Wrath* than with the current reality.

Breakthroughs in worldwide communication systems, advances in biotechnology, and better transportation systems have dramatically altered the aspirations and living standards of rural America. Not only can farmers enjoy a better quality of life, but many can match their balance sheets and income statements with those of people in similar-sized businesses. However, because public programs and large government payments have played an important role in bringing about the accumulation of wealth in agriculture, they will be scrutinized more closely by policymakers in the future.

In spite of the difficulties experienced during the past five to eight years, many commercial farm operators continue to earn an attractive living at farming. A close look at the data will reveal some interesting discrepancies between how the sector and the individual farmer are faring

financially. For example, while real earnings of farmers have been stagnant to declining for over 30 years, farm numbers have been dropping steadily. Thus, the remaining farmers are getting a bigger and bigger piece of a relatively constant-sized pie over time. Real net cash income per farm grew at about a 2 percent rate annually from 1950 to 1970. If the trend line established during that period were extended (prior to the boom and bust of the 1970s and 1980s), average real net cash income for the past four years would be above trend. Real incomes in agriculture are, in fact, growing (Chart 1).

The average real wealth of farmers has also been trending higher. From 1950 to 1970, real equity per farm grew at a compound annual rate of 3.8 percent. Admittedly, the recent downward adjustment has brought average real equity below the trend level established during the 1950-70 period. Still, equity levels are now rising again, which will help to stabilize the finances of the sector (Chart 2).

In current dollars, average farm equity is more than \$300,000. If only commercial-sized farms (sales above \$100,000) are considered, average equity is almost \$900,000.<sup>6</sup>

In evaluating the welfare and lifestyles of a sector—and in crafting policies—aggregate information is more useful than anecdotal accounts of an individual circumstance. Nonetheless, it is important to recognize the stress facing some individuals in agriculture—and the genuinely bleak prospects some look toward. For these persons, new opportunities and a helping hand are needed.

It is widely believed that U.S. farm programs provide income support to allow the nation's

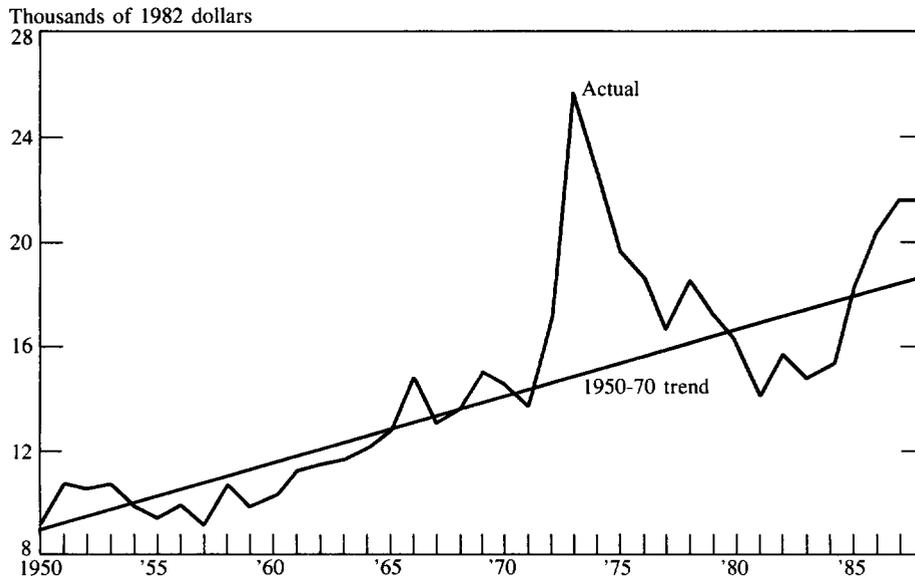
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<sup>5</sup> Mark Drabenstott and Lynn Gibson, eds., *Rural America in Transition* (Federal Reserve Bank of Kansas City, 1988).

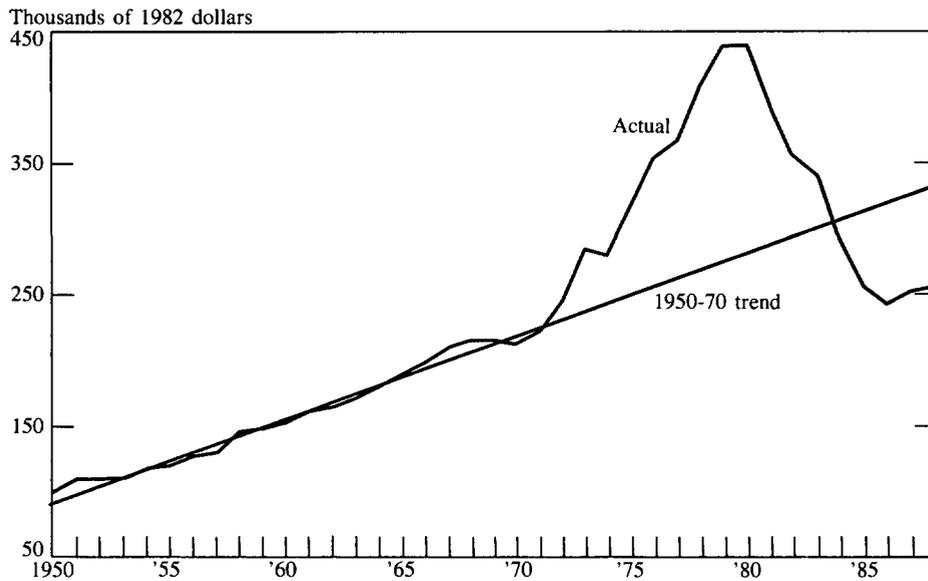
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<sup>6</sup> U.S. Department of Agriculture, *Economic Indicators of the Farm Sector: National Financial Summary, 1986*, ECIFS 6-2 (December 1987).

**CHART 1**  
**Real net cash income per farm**



**CHART 2**  
**Real equity per farm**



farmers to remain in business to produce an abundant supply of low-cost food. Many claim that without these payments, a grand exodus from farming would occur and our food supply would be threatened. In 1986, 56 percent of direct government payments went to about 14 percent of farmers. These farmers generated 70 percent of the sector's gross farm income and had sales of \$100,000 or more.

In 1986, farms with sales between \$100,000 and \$500,000 earned an average net cash income of \$83,294. Farms in the U.S. Department of Agriculture's highest sales category had an average income of almost \$700,000. Farms in these two categories received average payments from the government of \$20,000 and \$36,000, respectively. If those government payments were deducted from these farmers' incomes and appropriate adjustments due to resulting market prices, costs, and acreage were made, any reasonable needs test would indicate they are indeed doing all right, and government payments are not what is keeping them on the farm.

A closer look at the data indicates that commercial farmers who produce most of the nation's food and fiber are doing reasonably well, and their future is reasonably bright. Hence, to address the economic problems of rural America we need to consider not only agricultural policies, but also policies to broaden economic opportunities in rural America. While most commercial farmers are prospering in the United States, rural communities are disappearing.

### *Technology and productivity in U.S. agriculture*

We all are, at least superficially, aware of the changes that technology and increased productivity have brought to the American lifestyle. Yet, few of us appreciate just how profound and how pervasive these changes have been. Nowhere is this more true than in U.S. agriculture.

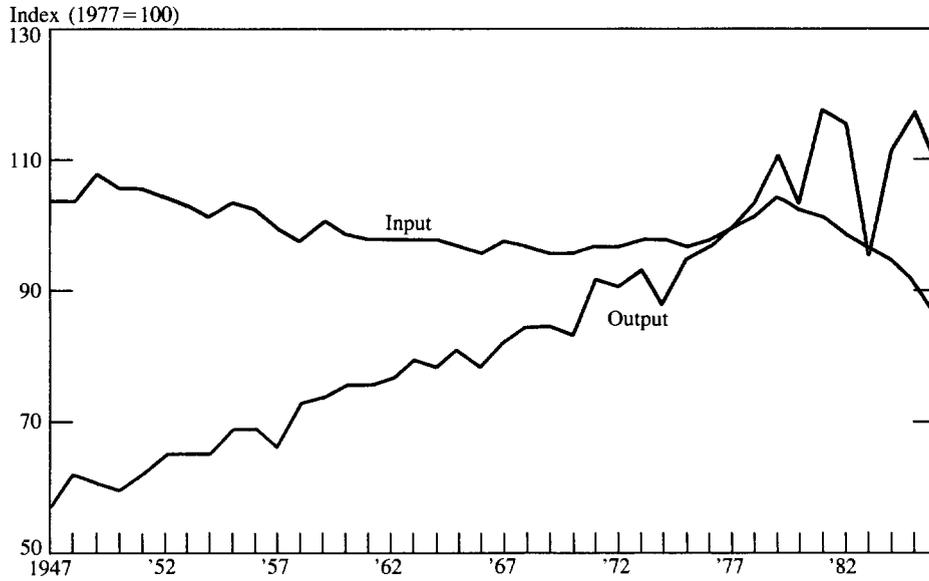
U.S. farm productivity—output levels generated per unit of input—has exhibited significant gains in the last 40 years. With output levels increasing by nearly 100 percent and input levels declining slightly, farm productivity has grown by 130 percent (Charts 3 and 4). The gains in productivity have been distributed just about evenly between livestock and crops (Chart 5).

Technological advancements are largely responsible for the growth in productivity. The fact that significant output gains have been attained with only minor changes in input levels indicates that much of the productivity gains up to now can be credited to advances in technology, particularly in the areas of machinery, chemicals, and plant breeding. This has resulted in an increase in labor productivity of the U.S. agricultural sector that has exceeded that of any other industry. In 1986, farm productivity per hour of labor was more than seven times greater than in 1947 (Chart 6). And the role of the farmer, as important as it still is, is now shared with the important roles played by the chemist, the geneticist, the cellular biologist, the engineer, and the banker.

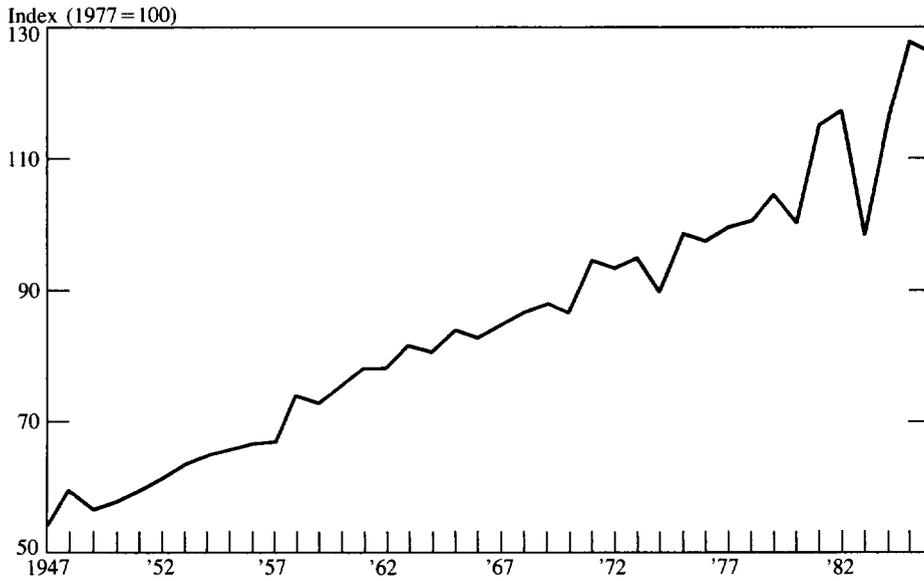
In general, the leaders in technological adoption have been the larger farms, which, consequently, reaped much of the benefit associated with early adoption. The willingness and, more importantly, the ability to adopt new technologies as they emerge may be the key to the future survival for many farms, especially the midsized family farms, which have experienced a squeeze over the years. Although off-farm income sources have helped many small and part-time farmers overcome the effects of inefficient production, the pressures on midsized farms will intensify in the future.

Genetic engineering and information technologies are rapidly proliferating. Much of this new technology can be adopted with low capital investments. The skill of the human resources employed in a business will more often than not

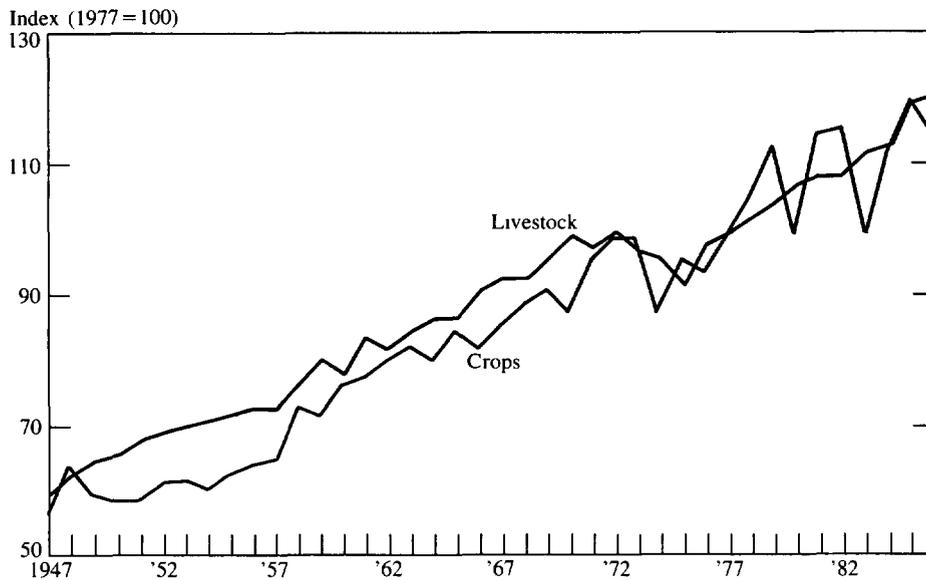
**CHART 3**  
**Indexes of U.S. farm output and input, 1947-86**



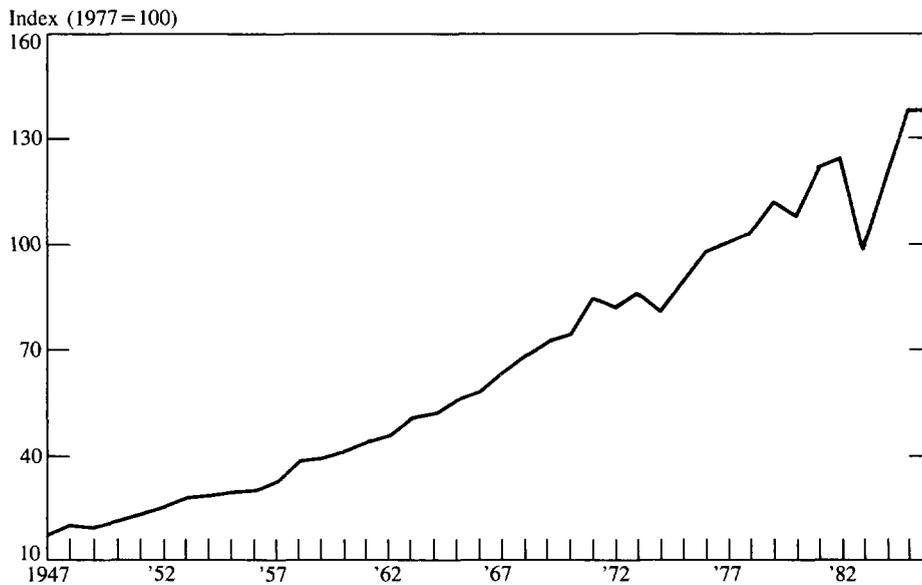
**CHART 4**  
**Index of U.S. farm productivity, 1947-86**



**CHART 5**  
**Indexes of crop and livestock productivity, 1947-86**



**CHART 6**  
**Index of U.S. farm labor productivity, 1947-86**



determine the effectiveness of these types of technological advances. Hence, productivity advance on a global basis will increase competition, forcing U.S. farmers to become even more cost effective to maintain and build market share.

This new reality is another that will be difficult for many U.S. producers to accept. It means, of course, that technological transfers will become more rapid and that the competitive playing field between U.S. farmers and their foreign counterparts will become more level. All this heightens the importance of building a cost-competitive U.S. agriculture and of providing assistance to spur the growth of countries that could prove rich market opportunities for U.S. agriculture.

### *Internationalization of U.S. agriculture*

The performance of U.S. agriculture has become a case study of world interdependence. Both the importance of the United States in the world market and the importance of world markets for U.S. agriculture increased considerably in the 1970s and 1980s. The prospects for U.S. agriculture in the 1990s and into the early part of the 21st century will depend on how efficiently it can produce and how effectively it can market relative to trading partners and competitors.

The slowdown in world trade in the 1980s and global excess production have created disputes and an emotionally charged trading environment. Solutions to this agricultural trade dilemma will require improvements in U.S. trade and domestic economic policies. They will also require worldwide negotiations to reduce trade barriers and open up markets to more fair, if not free, competition.

After several years of retrenchment, U.S. agricultural exports are on the rise. Contributing factors include lower Commodity Credit Corporation loan rates, a weaker dollar, export promotional programs, and strength in the sales of high-

valued products. The 1988 drought has helped reduce world carryover stocks, which puts the United States in a stronger position to adjust production plans for 1989 and beyond. However, the drought also limits the clout of U.S. producers to encourage liberalization of trade policies in competitor countries.

Many of these developments, while meaningful and encouraging, are of a short-term nature. The longer term economic viability of U.S. agriculture is tied to the resolution of two public policy issues:

- U.S. macroeconomic policies and their linkage to the international financial and commodity markets through interest rates and exchange rates, and
- more liberal trade policies to capitalize on the comparative advantages enjoyed by the United States in a number of agricultural products.

Although the linkages between various macroeconomic policies and agriculture may seem obscure, there is no question that volatile interest rates and exchange rates had a profound effect on the farm sector in the 1980s. Indeed, these policies have largely overshadowed the income support objectives of U.S. farm policies. In the future, there will likely be a continuation of this development, reflecting the pressures of greater interdependence among nations.

As the most important exporter and importer in the world, the United States has embraced the objective of a freer world trade environment.<sup>7</sup> The elimination of protectionist barriers, export subsidies, and quotas, along with the decoupling of government subsidies from farm production, would likely be very beneficial to most U.S. producers. However, the assault on agricultural protectionism faces long odds. The mechanics of

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<sup>7</sup> Dale E. Hathaway, *Agriculture and the GATT: Rewriting the Rules* (Institute for International Economics, 1987).

decoupling and its impact on various producers remain unclear. Several countries have social welfare objectives in their policies that need to be acknowledged in the negotiations. And convincing both developing and industrial countries that trade reforms are in their interest is a formidable challenge.<sup>8</sup>

The General Agreement on Tariffs and Trade (GATT) has a history of progress in trade liberalization, and it is reasonable to expect that this trend will continue. The key to success, however, will probably depend as much on political courage as diplomatic skill. In a fast-moving, interdependent world, political courage is sometimes in both short supply and high demand.

The implication of these two conditions is that U.S. farmers must become price competitive and low-cost producers in world markets in order to enlarge and maintain their share in the export markets. They have the capacity to move in this direction. The key, however, will be to move toward a more market-oriented basis and not look to the government for protection. This reality may be the most difficult one of all to accept.

Recent studies on the competitive position and comparative advantage of U.S. agriculture show mixed results. A 1986 study by the Office of Technology Assessment concluded that "a larger percentage of U.S. farms are competitive with most efficient producing areas in the world. On the other hand, it appears that some U.S. farmers are operating at costs above world prices."<sup>9</sup>

A study by Westbrook noted that while U.S. variable costs exceed those of Argentina, our pro-

ducers are cost competitive relative to other producer nations.<sup>10</sup> A study by Mangold found the same to be true.<sup>11</sup> Furthermore, Barkema and Drabenstott have reported that, on average, the United States produces corn and soybeans at costs close to the world's lowest cost producers.<sup>12</sup> Average production costs of wheat are competitive with average costs of all other major wheat exporters except Argentina. The United States is the highest volume producer in the world market for all these commodities and continues to be a strong competitor in world markets. U.S. producers at the margin, however, could find themselves uncompetitive.

The longer run competitiveness of U.S. agriculture also depends on the resolution of two largely private sector issues: improvements in productivity, and efficient marketing and distribution systems.

Technological advances will clearly enhance farm productivity in the future, but this phenomenon will exist in competitor countries as well. These developments present a daunting challenge to the United States if its role is not to be that of being the residual supplier to the world market.

However, the United States retains clear superiority in the agribusiness infrastructure—that is to say, in the capacity of agricultural supply and marketing firms to efficiently meet the requirements of producers and to move large

<sup>8</sup> Carlisle F. Runge, "The Assault on Agricultural Protectionism," *Foreign Affairs*, vol. 67 (Fall 1988).

<sup>9</sup> U.S. Congress, Office of Technology Assessment, *Technology, Public Policy, and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill* (Washington, D.C., 1985).

<sup>10</sup> W. Westbrook, "Advantage, Argentina," *Farmfutures* (March 1987).

<sup>11</sup> G. Mangold, "Can the U.S. Mend the Market Marathon?" *Soybean Digest*, vol. 47, pp. 14-17.

<sup>12</sup> Alan Barkema and Mark Drabenstott, "Can U.S. and Great Plains Agriculture Compete in the World Market?" Federal Reserve Bank of Kansas City, *Economic Review* (February 1988), pp. 3-17.

volumes of quality products into consumers' hands worldwide. Thus, this infrastructure is as important to the well-being of U.S. agriculture as its rich farmland and those who till its soil.

### **Policy issues for the 1990s**

Powerful and pervasive forces of change are now propelling rural America and its agricultural sector toward the 21st century. They are not likely to be reversed. However, policymakers can help steer rural America toward a brighter future through the initiatives they choose to undertake. The issues deal with agricultural policy but do not stop there. Importantly, the policy agenda includes issues that focus on bridging the opportunity gap between urban and rural America.

#### *Agricultural policy*

Opinions vary as to what U.S. agricultural policy objectives are and whether they are consistent in the long term. Indeed, some would argue that the United States really has a disjointed set of commodity programs that at times conflict with one another, as well as with other government policy goals. For example, consider the tobacco program and health concerns or the sugar program and the free trade issue. In addition, policymakers often adjust the programs in response to current needs, giving the appearance that short-term objectives outweigh long-term concerns.

Current farm programs tend to be outgrowths of a general objective to provide adequate supplies of food at reasonable prices and to support the income levels of farmers, but this is not to say that they remain either justifiable or consistent with (or for that matter contribute most effectively to) those goals.

Because of increased budget outlays, specific commodity programs are coming under attack in some quarters. One manifestation of this trend

has been a growing concern over the size of payments to individual producers and a desire to target benefits to producers in need of financial assistance. This year's drought legislation suggests the direction targeting may take. It has fixed payment limitations, and no payments are to go to producers having gross revenues above certain levels, nor to persons who are not actively involved in the farm operation.

Congressional and administration policymakers have come to recognize a number of flaws in the present approach and over time have attempted to move toward a more consistent and market-oriented set of programs. However, the actual mechanics of individual commodity programs in the United States tend to change slowly. As one example, many people felt that with a broader set of interest groups taking an active role in expressing their concerns prior to formulation of the 1986 Farm Act, significant changes in the farm programs would come about. But in fact only relatively modest changes occurred.

Of current note, it appears unlikely that the recent notion of decoupling program benefits from current production will gain the needed political support anytime soon.<sup>13</sup>

What could be expected in future farm programs is a continuation of the shift to smaller—and eventually away from—direct subsidies. The substitute will likely be to provide self-help mechanisms such as the “no-cost” tobacco program. This may mean setting up various types of insurance funds in which producers pay into and receive benefits. Greater use of current and possibly new futures markets as well as commercial insurance programs may be explored to reduce some of the production and price risks of crop and livestock production.

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<sup>13</sup> Agriculture Working Group, *Decoupling: A New Direction in Global Farm Policy* (Washington, D.C., February 1988), pp. 29-32.

Just as the sector has lost what was once a unique local market structure, it may also be in the process of losing what have been unique exemptions from various safety, occupational, environmental, and resource regulations. That could lower farm output growth and raise prices; but more significantly, it could boost U.S. farmers' cost structure relative to competing exporters. A May 1988 special reprint of articles in USDA's monthly *Agricultural Outlook* magazine on "Agricultural Chemicals and the Environment" concludes that current and proposed resource and environmental programs affecting agriculture will, over the next several years, force a major transition in farming practices with important effects on farm income and food costs.<sup>14</sup>

One of the reprint articles reviews resource and environmental policies affecting agriculture. It points out that natural resource policies mainly affect the use of inputs, that is, their value, quantity, and quality available for production. Environmental policies, however, cover a broader spectrum of concerns, including human health aspects that may be either the direct effects or by-products of the use of certain chemicals. Pesticide and fertilizer contamination of both groundwater and surface waterways are a growing concern, and several states have passed laws restricting land use development.

While all generalizations can be challenged, it appears that agricultural policies may become more focused on ensuring competitiveness in an international market place, on providing more carefully targeted income support, and, with greater emphasis, on protecting the environment and human health.

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<sup>14</sup> U.S. Department of Agriculture, "Special Reprint: Agricultural Chemicals and the Environment," reprinted from the 1987 and 1988 issues of *Agricultural Outlook* (May 1988).

### *Broadening economic opportunities in rural America*

The ebullient events of the 1970s and the dramatic downturn of the 1980s have jolted many rural communities into the realization that their economic viability is in doubt. Increasingly, county governments are straining to meet demands for community services, education, roads, and other infrastructure with static or declining tax bases and populations.

Of the 3,000-odd counties in the United States, over 2,400 are classified as nonmetropolitan. However, only a fourth of these rural counties depend mostly on farming for their incomes and account for only an eighth of the total rural population. Far more important are the rural counties that depend on manufacturing for income. They account for more than a third of the rural population.

For years, there has been an income gap between farm and nonfarm residents, but also between rural and urban residents as well. In 1986, for example, the median income for all farm households was \$21,655, or more than \$3,000 under the \$24,979 figure for all nonfarm households.<sup>15</sup> It is also important to note that the ratio of rural income to urban income has been gradually declining in the 1980s and now stands at about 75 percent.

The divergence in income growth between rural and nonrural areas does not seem to be directly correlated with the business cycle but rather with several basic structural changes in the economy. International forces, volatile exchange rates, deregulation of the financial and transportation industries, and structural shifts in farm size have

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<sup>15</sup> Mark Henry, Mark Drabenstott, and Lynn Gibson, "A Changing Rural America," Federal Reserve Bank of Kansas City, *Economic Review* (July/August 1986), pp. 23-41.

strongly influenced the movements of the income-gap ratio over time.

The challenge facing rural America is to determine how to effectively use available resources to broaden the economic base. Important decisions will have to be made to successfully attract new business, industry, and people to stimulate economic activity and increase employment. Most of these decisions need to be made at the local, county, and state levels—from the bottom up. People from both the public and private sectors should be involved.

Economic development is an evolutionary process that can begin modestly and proceed forward in a series of small steps. The key is to be realistic about future opportunities. The planning should emphasize four strategies:

- encourage business firms to add value to current products,
- expand markets and the size of current businesses,
- build on the region's strength, and
- provide flexibility to those who want to commute to jobs from rural residences.

For a few communities, the option of recruiting business firms to locate plants in their area may be appropriate, but this strategy will be successful only if there is a clear advantage to the firm. Most communities will need to identify important trade centers, both urban and rural, in their region and gravitate their development plans toward these centers. Offering people who work in these trade centers a better quality of life—schools, recreation, housing, low taxes, public services, and transportation—can pay rich dividends. Some communities, however, will have to be content with trying to preserve what they have.

### **Building a new reality**

On balance the outlook for U.S. agriculture is bright in spite of the considerable problems, obstacles, and challenges that lie ahead. A

necessary condition, however, for achieving desirable policy results is the recognition and understanding of the operating environment in which the game is to be played.

However, many who live in rural America will continue to be relatively untouched by agriculture's success. To revitalize rural America, the policy focus will need to be broader than agriculture.

This article has identified a number of powerful trends that demand accommodation. Some of these trends can be managed while others cannot. Some broad policy challenges have been raised. To a large extent, these forces will define the environment. The task is to design a set of policies appropriate for that environment and that will achieve established goals.

### *Trends that will not be changed*

Whether crafting new policies or readjusting their priorities, policymakers need to recognize which trends are fixed and are, in fact, parameters for the policy process and for the performance of the agricultural sector. The following represent such fixed trends.

*Demand for farm products.* The American consumer is nearing a saturation point for food and fiber, and thus the relationships between income, price, and demand for farm output may become even more inelastic. Current research points to demand elasticities well below 1, which means that real GNP growth of 3 percent may actually lead to growth in domestic demand of 0.5 to 0.7 percent per year. The excess production will have to be stored or sold in the world market.

New domestic consumption for U.S. agricultural products will be generated by product innovation and income growth. Population growth will increase consumption at only a modest pace. U.S. population growth in the 1980s has slowed to about 1 percent per year compared to annual growth rates of about 1.75 percent during the

1950s. Moreover, the median age of the U.S. population is 32.0 years now, about 3 years older than a generation ago.<sup>16</sup>

More rapid growth in markets can be cultivated in sales abroad. From 1960 to 1980, the value of agricultural exports increased from 14 percent of U.S. farm cash receipts to 30 percent.

However, the continued focus of the U.S. government and agricultural interest groups on expanding sales to traditional markets in Japan and Europe will likely have somewhat disappointing results. The real opportunity for export growth lies in the rapidly developing, populous countries of Asia and Latin America, especially where the benefits of economic growth are widely distributed.

*Productivity and technology.* The future in terms of technology-driven change will be like the past, but faster paced. The U.S. food and fiber sector will increasingly be shaped by new breakthroughs in scientific laboratories and in information technology.

Development of biological and information technologies will play a key role in shaping the future of the agricultural sector, both in plant and animal production. Biotechnologies in animal agriculture are evolving that will help to improve and control reproduction and prevent and control disease. Advancements in plant agriculture can be expected that will modify crops. Such modifications will make them more disease, pest, and weather resistant, and improve nutritional composition and nitrogen fixation.

In sharp contrast to the past, when technology was directed primarily toward increasing output

levels, future technological developments will ensure safe, quality food products, enhance plant and animal productivity via reduced costs, and conserve vital resources. Many of these new advancements are resulting from improved understanding of cell physiology and genetics.

Health and food safety are emerging as key issues that will be addressed in considering future technological developments. The awareness of the general public regarding health, food safety, along with environmental issues, continues to escalate.

The adoption of information technologies will play a critical role in improving farm management skills and facilitating the decisionmaking process for both the production and the marketing of agricultural products. The use of microcomputers, giving farm managers immediate access to important information, and the capability to more precisely control systems has already taken shape and gained widespread acceptance. Computers have proved to be an effective tool for improving pest management decisions, for example.

The use of electronic animal identification for feed and disease control, electronic devices for estrus detection to improve the reproductive capability in livestock, record-keeping systems to monitor production and feed consumption, electronic irrigation control systems, and the use of radar, sensors, and computers to regulate application rates of certain inputs are only a few examples of the current and potential use of information technologies.

*Rural lifestyles and the uniqueness of agriculture.* The rural-urban dichotomy in America is disappearing as agriculture is assimilated into the broader U.S. business community. Americans, rural and urban alike, increasingly share a common culture and lifestyle expectation. These changes are due in large measure to technology and the resultant improvements in transportation and communication systems.

Rural residents now expect to have access to

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<sup>16</sup> U.S. Department of Commerce and U.S. Department of Agriculture, *Rural and Rural Farm Population: 1987*, Current Population Report: Farm Population, Series P-27, No. 61 (June 1988).

most of the amenities available in larger cities. While rural residents may aspire to them, not all communities are in a position to provide the desired range of services and quality of life.

However, production agriculture, with the exception of a few notable but short-lived periods, has not supported the infrastructure needed to provide these services, particularly in areas removed from trade centers. Hence, many rural areas will need to develop a more diversified economic base that would include a wider spectrum of agribusiness, manufacturing, and service industries if they are going to have a solid future.

Farming as a unique business enterprise is increasingly a thing of the past. More and more, agricultural production resembles other production or processing businesses. Family farms bear similarities to other family-owned manufacturing or marketing firms. These similarities are found in the capital requirements, both equity and debt; in the division of labor and management responsibilities; in the use of advanced technology; in linkages to the broader U.S. business community; and, finally, in the interdependence with consumers and foreign producers.

Consequently, the skills required of farm business managers are leading to a new breed of farmers. These farmers understand financial and business management principles as well as their fathers understood production principles.

The trend toward gradual consolidation of a large share of U.S. agricultural production into fewer business units will likely continue. That trend has important implications for the further consolidation of agricultural input and marketing firms in rural America. This all suggests further declines in small communities dependent on farming for their support.

### *Trends to be managed*

Some future trends will represent opportunities for policymakers. By prudent use of policy levers,

these trends can be accelerated, dampened, or redirected. In so doing, the performance of the nation's food and fiber sector and of rural America can be substantially improved. These trends include macroeconomic policies, market development, product development, and environmental and food safety concerns.

*Macroeconomic policies.* The importance of macroeconomic policies for the performance of the agricultural sector is growing rapidly. By the year 2000—if not sooner—macroeconomic policy may well dominate farm policy because of its effect on market competitiveness, farm income, investment, and asset values. By that time, the integration of the farm economy into the U.S. and world economies will have largely occurred.

Changes in interest rates are now quickly passed on to agricultural producers through financial intermediaries, which are integrated into a national or even international financial marketplace. The cost of funds and underwriting standards of agricultural real estate lenders will be even more closely linked to national money and capital markets as the Federal Agricultural Mortgage Corporation (Farmer Mac) becomes operational next year.

Monetary exchange rates and interest rates not only directly influence the farmers' cost of funds, but also the value of their real estate and the demands for their products overseas. Since international trade will remain a vital outlet for U.S. farm production, the influence of economic policies on trade flows and exchange rates will continue to have a profound effect on farm income.

As a result, trade and budget initiatives, along with monetary policy, will capture an increasing share of attention by agricultural and rural interests. In fact, because of the importance of exchange rates and interest rates, farmers and other rural residents would be better served in the future if their interest groups focused more on broader policy issues and less on traditional

commodity programs. The long-term benefits for agriculture associated with sound macroeconomic policies far outweigh the more limited benefits derived from farm programs.

*Market development.* The successful development of foreign markets for U.S. agricultural commodities requires the expansion of existing markets, as well as an entrepreneurial approach to new markets. The United States should strive to enhance market share through continued efforts at trade liberalization as well as farm policy reform.

However, U.S. long-term export growth in these markets is largely dependent on economic growth in developing countries. Income growth in these countries will first lead to higher food grain consumption and then to upgraded diets and greater meat consumption, boosting the demand for grains and oil crops. Hence, close attention should be paid to strategies for improving the economic performance of developing countries. These strategies should include assisting target countries in developing suitable technologies and policy reforms to support their development. In developed countries, value-added products will form the growth opportunities.

Economic development is, by its very nature, a long-term activity. Too often, U.S. supporters, impatient with the slow pace of change, have faltered in their support of sound policies in developing countries and in their financial assistance for developments. American farmers have sometimes believed they were aiding their competition. While in some limited circumstances that may have been true, more generally foreign economic development assistance should be regarded an investment in market development for U.S. farmers.

High external debt levels and perverse policies by some countries themselves are continuing impediments to stronger economic growth. Programs to address the debt problem will, of necessity, require adjustments in economic

policies in many of these countries. Current efforts to tie additional lending to developing countries to greater rationalization of their economic policies is helpful. Debt-for-equity swaps, buy-backs of debt at discounted prices, as well as the possibility of debt write-downs by lenders, all offer some promise of relief.

However, until these countries return to stronger levels of growth and, in some cases, address income distribution problems, export demand growth for many U.S. agricultural products will remain sluggish.

*Product development.* A practical message is contained in the saying "variety is the spice of life." Food processors and marketers must take this saying seriously when addressing both domestic and export demand for their products. Indeed, any serious attempt to add value to agricultural products before export must include a heavy emphasis on new product development along with new technology in processing and packaging.

Consumers in developed countries have ready access to food products produced at home and abroad. The entrepreneurial food exporter, however, can still get the consumers' attention through innovative packaging of products. While chicken nuggets and pizza by-the-slice are U.S. innovations, they are good examples of how innovative marketing can open new avenues in an established market. On the other hand, U.S. durum wheat, which is sold to Italy and comes back to upscale U.S. consumers as fancily packaged speciality pasta products, is an example of what can happen to a domestic market if U.S. agribusiness is out-hustled and out-marketed.

*Environmental protection and food safety.* Public awareness and concern over environmental and human health issues have affected virtually all producing sectors and agriculture is no exception. Increased groundwater contamination, coastal water pollution, soil erosion, and chemical residues are just a few of the issues that agri-

culture will have to address in the years ahead.

Food producers and policymakers should not ignore the consumer's interest in food safety. As a result of this concern, we have already witnessed a significant number of firms that certify fresh produce and cereal products in supermarkets as all-natural and free from chemical residue.

*The opportunity gap in rural America.* Increased public policy attention directed toward improving the economic vitality of rural America seems assured, as it becomes increasingly apparent that current farm commodity programs alone are unable to accomplish this task. Indeed, commodity programs as currently structured are no longer doing as effective a job of improving the economic conditions of small and midsized farms as once was true.

Moreover, a large share of rural America is relatively untouched by current farm program benefits because most rural Americans do not rely on farming for their livelihood. Production agriculture and its support industries simply do not provide the jobs and income required to sustain rural America.

Increased vertical integration within the food system will help broaden the economic base in rural America. By basing processing and input manufacturing in rural communities, workers will have access to nonfarm jobs, allowing them to remain in a rural area while working in a non-farm industry. A number of service industries could also spring up in such a setting.

However, because most rural Americans are not directly involved in agriculture or even agribusiness, policy efforts directed at enhancing their economic opportunities must be broadly based.

Manufacturing and communications jobs are increasingly linked to the application of new technology. Much of that is no longer place specific. Computer software and telemarketing businesses can be established and prosper in a wide range of settings. The same is true of many

service businesses. Citicorp's location of financial services businesses in South Dakota bears witness to this new reality. What is required is a skilled workforce, entrepreneurs with ideas, and supportive public policymakers.

Government at all levels can play a vital role by ensuring that people have the educational and job skills these new industries will require. Local and state governments can recognize the need to focus growth incentives in communities with potential for development. Private sector firms can be open to locating new plants and businesses in rural America.

The transition necessary will require careful planning, support by policymakers, and, most importantly, a commitment by business to explore new opportunities in rural areas.

*The new coalitions.* Agricultural policy development is quickly approaching a crossroads. Against the historical backdrop of incremental changes in farm commodity programs, there are inevitable forces leading to a wider set of economic and social objectives to be met in establishing the nation's agricultural and rural policy parameters.

As the legitimate interests of agricultural groups broaden to include macroeconomic and trade issues, and as environmental and consumer groups focus more clearly on farm production processes, new political coalitions will emerge. The makeup of these new coalitions may be surprising to farm group traditionalists. Indeed, their makeup may remain fluid for some time to come.

But it seems clear that change is inevitable, with many more people interested in improving economic opportunities in rural America. Thus, the agricultural commodity interest groups will need to join with these more broadly based coalitions and develop their negotiating skills if they are to remain a meaningful force in the private and public initiatives that will increasingly define a new, more broadly based, more entrepreneurial, and more prosperous rural America.

## Conclusion

The differences between traditional beliefs about agriculture's and rural America's relationships to the rest of America and the reality of those relationships and linkages have seldom been greater. On the one hand, traditionalists seek to retain a farm and rural American economy and culture that has long since disappeared but which evokes strong emotional support. On the other hand, new opportunities in the broader world marketplace beckon to farmers and agribusinessmen. Rural America's well-being is increasingly dependent on a broader economic base than

farming.

Building on opportunities for agriculture and broadening opportunities in a revitalized rural America requires a long-term commitment to sound policy options. Public policymakers must be willing to recognize new economic linkages and to reflect those in new policy initiatives. Private sector decisionmakers will need to revitalize their commitment to entrepreneurial opportunity, building on the development of human resources and technological change.

If successful in this partnership, the future for agriculture and for rural America is bright with promise.

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