

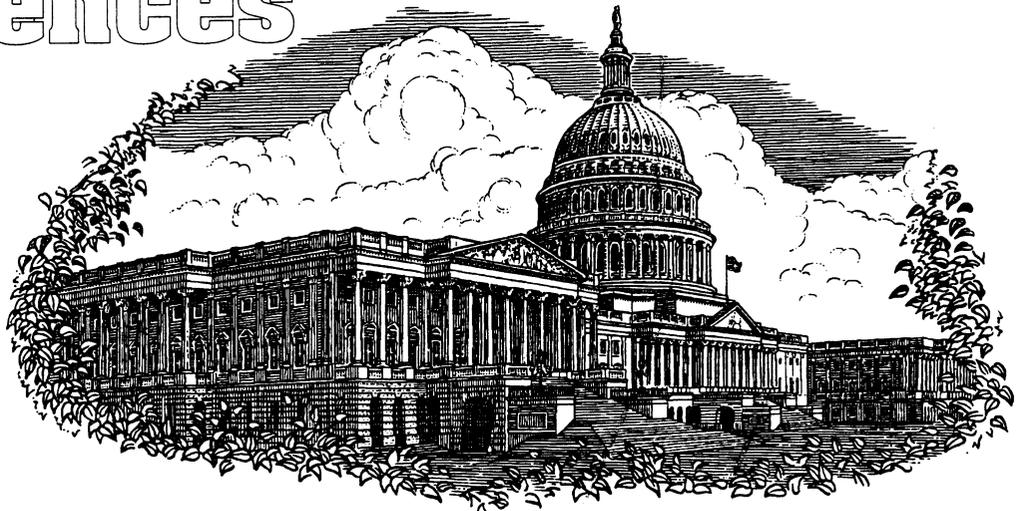
1995

FARM BILL

Policy
Options

Consequences

Allan E. Lines



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Preface and Acknowledgements

This set of leaflets is the product of the National Public Policy Education Committee. Its purpose is to present policy options and consequences for the major provisions of the 1995 farm bill. The starting point for developing the subject matter for the individual leaflets was the titles of the 1990 farm bill. Topics were then added to reflect contemporary issues such as income assurance and green payments.

In the Land-Grant university and Extension Service tradition, the series was developed exclusively for educational purposes. The discussion of particular options does not imply endorsement. Likewise, while an effort was made to include all options, the omission of an option should not be interpreted as having any reflections on its viability for consideration.

Many individuals were involved in the conceptualization of this series of articles. The steering committee for the overall project included:

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The packet of articles distributed by your State Cooperative Extension Service may include only those articles considered to be of the greatest interest in your state. Should you be interested in the complete set, contact:

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The Political Economy for the 1995 Farm Bill

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Background

Will there be a farm bill in 1995? As the debate begins over what has become an expected ritual every four to five years, the political economy is such that some are asking that fundamental question. How much of the farm bill debate will be settled in the implementing legislation for Uruguay Round Agreement (URA) of the General Agreement on Tariffs and Trade (GATT)?

The 1990 farm bill expires with the 1995 programs. The 1990 farm bill, like its more recent predecessors, is an amendment to The Agriculture Act of 1949, which was the last permanent legislation. If a 1995 bill is not passed, farm policy reverts back to the permanent legislation which means "high" price supports and producer referenda on mandatory production controls. Along with traditional price and income policy for farmers, food assistance, food safety, conservation and environmental programs are at stake. Traditional farm bills have become broad-based and complex in that they involve issues and affect constituencies far beyond the farm gate.

There are five broad-based alternative strategies that the Congress could pursue.

- The 1990 Act expires, no new bill is passed, and the 1949 permanent legislation is implemented and enforced.
- The 1949 Act is repealed, and farm bills become a part of history.
- The 1949 Act is repealed, and the 1990 farm bill is made permanent legislation.
- The 1990 Act is renewed with "minor" modifications.
- A new farm bill is passed overhauling food and agriculture policy.

The Clinton administration has stated that the farm bill will be guided by the federal budget, the international trade situation and environmental constraints. High price supports and mandatory production controls do not fit with a policy of expanding world trade. Production controls are, however, less costly than current programs. The 1949 Act is certainly not environmental legislation given today's interpretation of that term. The threat of the permanent legislation has previously produced a farm bill and will likely do so

again unless Congress repeals the permanent legislation.

Farm bills since 1954 have contained at least four basic elements including price and/or income supports, stored reserves, voluntary land retirement and food programs (foreign and/or domestic). Each successive bill has become more comprehensive. The 1990 farm bill contains a litany of programs such as non-recourse loans, marketing loans, deficiency payments, conservation reserve program (CRP), conservation compliance, research and education, food programs, rural development, crop insurance, credit and trade expansionary programs, etc. The USDA budget for fiscal year (FY) 1994 is \$71 billion — three-fourths of which is dedicated to activities other than farm commodity programs including food stamps, school lunches, Women, Infants and Children Program (WIC), research and education, etc.

The broad array of USDA programs has produced a litany of issues for the 1995 bill.

- The form of food subsidies (cash, electronic transfers or coupons).
- The viability of direct food distribution.
- USDA's role in food safety and nutrition education.
- Wetland preservation.
- Conservation compliance.

- Sustainability.
- Renewal of CRP contracts.
- Conservation cost-sharing.
- Export enhancement.
- Export credit.
- Flex acres.
- Target price levels.
- Loan rate levels.
- Continuation of marketing loans.
- Green payments.
- Revenue assurance.
- Disaster protection.
- Crop insurance.
- Animal welfare/rights.
- Viability of rural communities.

Current Situation and Forces of Change

Economic Situation

The 1995 farm bill debate will occur in an atmosphere of general economic stability at home but in turmoil abroad. The American economy is growing at a moderately stable rate. Inflation, nominal interest rates and unemployment are within acceptable ranges compared to the volatile decade of the eighties. Globally, western nations are experiencing relatively slow growth. Population and per capita incomes are rising rapidly in Latin America and Asia. Eastern Europe and former Soviet countries are struggling to establish western style capitalistic democracies.

Trade liberalization is winning out over isolation. That is the central political message of the URA of GATT as well as the

passage of the North American Free Trade Agreement (NAFTA). Projections of the benefits cover a wide range. The free-enterprise-oriented Hudson Institute projects a \$100 billion potential increase in agricultural exports yielding a 20 percent rise in the price level of agricultural commodities if the U.S. adjusts its agricultural policies to the "open" global economy. However, the Organization for Economic Cooperation and Development (OECD) estimates the net benefits of GATT and NAFTA to be under \$20 billion for the U.S. economy. Likewise, more open world markets, because of GATT and NAFTA as well as the rise in per capita incomes above the low quality diet subsistence threshold (\$3,000) in Mexico and parts of Asia indicate the potential for at least a partial substitute of foreign demand for government payments in the farm income stream.

Historically, farm programs were justified on the grounds that the per capita income of farmers was lower than the per capita income of non-farmers. This is no longer true for commercial farmers with gross sales over \$100,000 when income from all sources is included. Income per household of commercial farmers from only agricultural sources exceeds the level of non-farmers for those commercial farmers with sales exceeding \$250,000. Thus, it will be exceedingly more difficult to justify farm programs on the basis of income equity.

Political Atmosphere

A farm bill works its way through both a formal and an informal political process. The administration normally has a member of Congress introduce its

proposal. Therefore, the President's farm bill gets consideration along with several other bills introduced by "key" members of Congress.

Bills are assigned to authorizing committees. In the case of a farm bill, the authorizing committees are the House and Senate agriculture committees. Markup or "final" drafting occurs in the agriculture committees. Since modern farm bills have numerous titles or sections by commodity and function, different titles will be assigned to different subcommittees for markup. Once the farm bill is reported out of committee and is voted on in each house of Congress, it then goes to conference committee where the difference between the House and Senate versions are resolved. It then goes back to each house for approval and on to the President for his signature or veto. The process sounds simple, but it is not.

Like its predecessors, the 1995 farm bill will be examined by the Office of Management and Budget (OMB) to see if it fits the President's budgeting and policy guidelines. It also will have to come in under guidelines established by the Congress in the budget resolution and reconciliation process. The agriculture committees authorize the spending of funds for the purposes outlined in the farm bill. The budget committees make sure budget limits are adhered to, and finally the appropriation committees actually appropriate the funds.

During the 1990 process, the agriculture committees authorized programs that exceeded the budget limits in excess of \$13 billion. The 1990 Budget Reconciliation Act subsequently enacted the flex acres approach rather than lowering target prices along with assess-

ments and other means to bring the farm bill under budget. A process of farm policy development that was once controlled by the agriculture committees is now being exercised by the budget and appropriations committees. Another case in point is the three year phaseout of wool, mohair and honey programs. Those programs survived the 1990 farm bill debate intact but were debated and voted on several times in 1993 during the appropriations process and eventually transitioned out.

The power structure historically in place that informally determined the outcome of farm bills resembled a "troika." The old agricultural establishment was made of the USDA, the farm organizations and the congressional agriculture committees; all of which tended to be organized along commodity lines. In the past, farm bills were designed commodity by commodity.

Now, farm bills are much more comprehensive and involve more than just commodity policy. USDA is being reorganized. The Congressional agriculture committees are no longer so easily subdivided along commodity lines.

At the same time, other committees are involved in the process like Budget, Finance, Ways and Means, Environment and Public Works, Energy and Commerce, Foreign Affairs, Foreign Relations, and Judiciary. Other executive departments carry a big stick — Office of Management and Budget, State, Interior, Health and Human Services. Supporting these interests in other departments and committees are many consumer, health, environmental and non-farm rural interest groups.

Nonfarm interest groups have a significant influence over as well as a stake in farm bills. Food programs, like food stamps and nutrition programs, rural development, conservation and trade issues have greatly expanded the scope and budget of what was named the Agricultural Adjustment Act of the 1930s and now carries such names as Food Security Act of 1985 and the Food, Agriculture, Conservation and Trade Act of 1990. In the generic sense, what was once farm policy or agricultural policy is now food policy. Environmental groups, animal welfare/rights groups, consumer groups, health groups

and the public interest lobby all are playing an increased role in the development of farm bills.

Does this mean that farmers/ranchers and their organizations have lost control and no longer influence farm bills? Are the interests of environmentalists, for example, the opposite of farmers? There was support from environmental groups for the flex acres approach in the 1990 farm bill and for the CRP in the 1985 bill. There clearly will be support for renewal of the CRP program in the 1995 farm bill from some environmental groups.

Traditional farm interests now share control with a multitude of nonfarm interest groups. Compromise, searching for common ground, building coalitions and maintaining support across political party lines are now essential skills for traditional farm organizations. They represent a minority interest and must work the political process accordingly in order to be successful.

Dire predictions abound as debate begins on a farm bill in which agriculture has lost its political clout and will suffer adversely at the hands of an urban Congress. Yet, the farm lobby continues to be a potent force that extracts billions from the federal treasury in the name of food security, economic stability, conservation, etc. (Figure 1). The U.S. Senate, with two votes per state, gives rural interests a powerful voice, and the astuteness of the farm lobby continues to extract legislation favorable to agriculture which sheer numbers in terms of population would not predict. The death of the farm lobby, USDA and commodity programs is exaggerated and premature. The record does not bear it out.

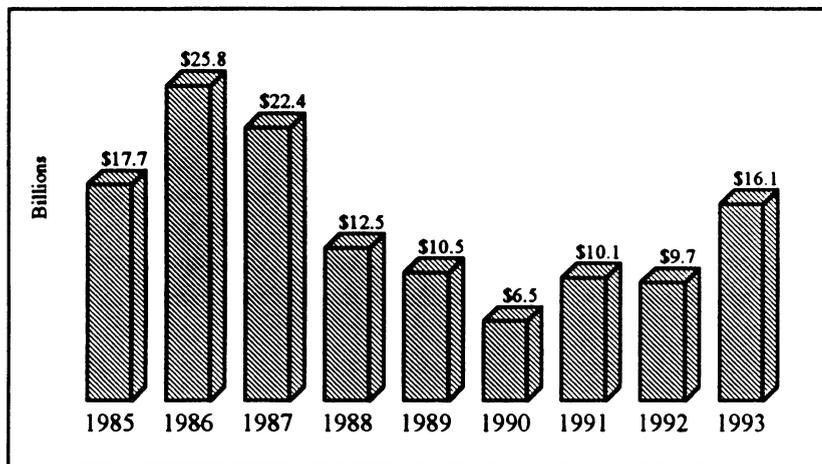


Figure 1. USDA Commodity Program Outlays for Fiscal Years 1985 to 1993.

Commodity programs have been ratcheted down, but \$16 billion which was spent in 1993 is far from being eliminated. Arguably, the decline in program payments can be traced to budget constraints, improved farm prices, expanded foreign markets and changes in philosophy of farmers toward government programs.

Farm Program Options

Do nothing

If the 1990 amendments to the permanent legislation (the 1949 Act) expire without passing, a 1995 farm bill would institute a system of mandatory production controls if producers approve in referenda. This option would give rise to the maximum amount of government intervention on the policy spectrum (Figure 2). Supplies would be managed through a bushel allotment program designed to achieve a stable level of farm income. Price supports would be set sufficiently high to achieve an acceptable level of income for farmers out of the marketplace with a minimal cost to the government. U.S. agriculture

would be less competitive in world markets and would need to downsize. The share of U.S. disposal consumer income spent on food would increase.

Targeting benefits

Who ought to receive the benefits from farm programs? Particular criticism has focused on large producers receiving the majority of the benefits and on the need to focus on producers who are having financial problems — otherwise referred to as means testing. Targeting by applying a means test or setting a size limit could eliminate the bulk of U.S. agriculture production from farm programs and the conservation compliance that is attached to that acreage. It also could be complex to administer. Current payment limitations attempt to accomplish a similar purpose but are ineffective and raise farmer costs.

Status quo

The status quo, that is the extension of the 1990 farm bill and the corresponding Budget Reconciliation Act, is a “middle ground” on the government intervention spectrum. It contains the basic rudiments of historic farm bills. It continues the target price, nonrecourse loan, marketing loan,

acreage reduction, flex (nonpaid) acres and conservation compliance for the major program crops, and it introduced 15 percent flex (nonpaid) acres as an additional form of decoupling.

The status quo has maintained farm income through direct payments from the U.S. Treasury and enhanced our competitiveness. If the 1990 bill is simply extended, the 38 million acres in the CRP will be removed from government contract and either go back into row crop production or be hayed or grazed. Few acres will remain in “reserve” without a government rental payment. However, set-aside acreage would likely increase. While program costs have been as high as \$26 billion under the status quo, most projections place future costs in the \$10-15 billion range.

Two new approaches

An “old” concept that surfaces periodically in farm policy/farm bill debates is gaining support once again and that is revenue insurance/assurance. Canada operates a gross revenue insurance plan known as GRIP from which we can draw conclusions and consequences. An Iowa Farm Bill Study Team is proposing revenue assurance which would guarantee each producer 70 percent of their normal crop revenue. Gross revenue could be insured through the combination of a target price plus basis put option (full premium cost paid by the government) and replacement coverage crop insurance. Proponents of these alternatives argue that they would reduce government cost, are non-trade distorting, provide maximum flexibility and are environmentally friendly.

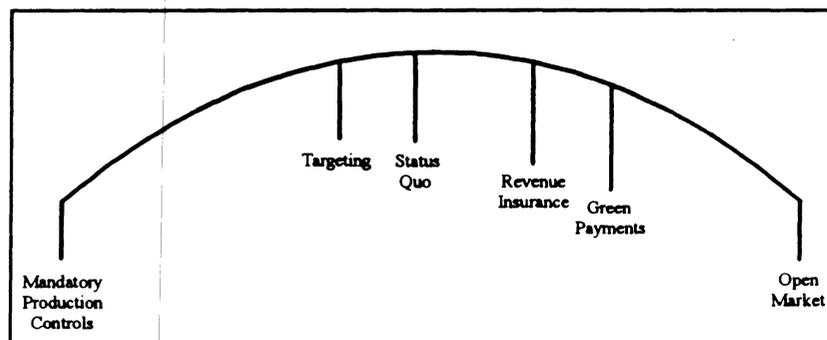


Figure 2. Policy Spectrum for the 1995 Farm Bill. Government Intervention in Market Place Increases, right to left.

Some environmentalists are touting the utilization of current subsidies to offset at least a portion of the cost of reducing agricultural pollution. The result is green payments from the government to complying farmers. If livestock were included in such payments, the distribution of benefits from subsidies would be materially modified.

Free market

On the other end of the spectrum is the open market-no programs. This, of course, would require the repeal of the Agriculture Act of 1949. The safety net provided by government programs would be completely removed and marginal producers would go out of business. U.S. farmers would be required to compete in world markets with producers that are subsidized by their governments. A gradual partial multilateral ratcheting-down of government programs as is achieved in the Uruguay Agreement under the

GATT negotiations could maintain the relative competitiveness of the U.S. producer.

“Minor” Changes Or Overhaul?

As the political process unfolds and the multitude of players from the Farm Bureau to the Environmental Defense Fund to Ralph Nader’s Consumer Watch participate in the act, will we overhaul our farm policy or just make “minor” changes? Will we increase flex acres? If so, how much? Given the budget constraints, some argue that 50 percent flex acreage is a possibility and that will not be considered minor by most farmers. How do we adjust to the opportunities that could be provided by the GATT Uruguay Round and NAFTA?

What form should food subsidies take — direct distribution, coupons, electronic transfer or cash? It has been suggested that unless the 1995 farm bill is carefully designed, farm programs as we know them could unravel, become ineffective and do more harm than good. The balance between farm subsidies, environmental provisions and food programs could contribute to that unraveling. The future of agricultural and food policy in the 21st century is clearly at stake in the 1995 farm bill debates.

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This publication edited by Ron Knutson, Texas A&M University.

The Economic Setting for U.S. Agriculture

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The debate preceding any major food and agriculture legislation is heavily influenced by the current state of the agricultural sector's economic health, especially for grains and other program crops. For example, the commodity portion of the 1985 farm bill focused on bolstering export demand following the decline in agricultural exports during the early to mid-1980s. When inflation is soaring, adjustments to loan rate and target price levels become important issues. The following questions typically are discussed when considering legislation which affects the economic future of agriculture.

- What will be the agricultural sector's ability to produce in the near and long term?
- What growth can we expect in the demand for agricultural products?
- Will agricultural markets be export-driven or will domestic demands dominate?
- On balance, will agriculture generally experience "tight" or "slack" supply-demand conditions?
- How will farm income fare during the next few years?

Productive Capacity

Agriculture's ability to produce is determined by its land or resource base, the quantity of inputs applied and the productivity of those inputs. Crop yields, one measure of productivity, have increased over time, but have they been increasing at a slower rate in recent decades? One way to examine the rate of increase is to compute the annual compound rate

of change in yields between decade averages. The average annual compound rates of change between decades for corn yields declined from 5 percent annually between the 1950s and 1960s to less than 2 percent annually between the 1970s and 1980s (Figure 1). Rates of yield increases also have flattened for wheat although yield increases for soybeans rose from the 1980s to the 1990s, because of the record crop of 1992. The Food and Agricultural Policy Research Institute (FAPRI) projects an annual average compound rate of change for corn yield of 1.4 percent between the 1980s and

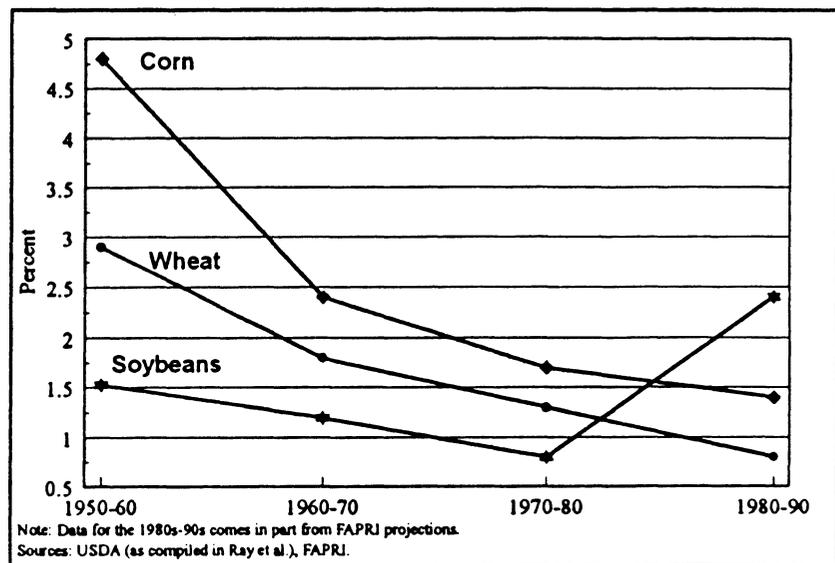


Figure 1. Average Annual Percentage Yield Increases Between Decades for U.S. Corn, Wheat and Soybeans Production.

1990s. The average rate for soybeans is projected to rise to 2.4 percent between the 1980s and 1990s, and the rate for wheat during that time declines to 0.8 percent.

Figure 2¹ indicates that planted area for 15 major crops has declined considerably since the late 1970s. Some of the decrease is in direct response to lower prices, but

primarily it is due to land diversion under federal farm programs including the Conservation Reserve Program (CRP). A similar pattern is evident for acres planted to the seven major crops — corn, wheat, grain sorghum, oats, barley, cotton and soybeans. Acreage planted to corn, wheat and soybeans generally declined between 6 percent and 11 percent, between

the averages for 1982-85 (the 1981 act period) and 1986-90 (the 1985 act period). A primary reason for these declines is that grain prices were pushed down by lackluster export demand and efforts to reduce grain inventories. Thus, the price declines led to more land being removed from production by farm programs.

Although increased plantings are expected for the major crops during the remainder of the 1990s, FAPRI projections suggest agricultural output demand will not press available land resources. With the release of CRP, retired acreage is expected to decline from about 60 million acres during most of the 1980s to approximately 29 million acres by 2000.

With fewer acres and lower crop prices during the late 1980s, farmers needed fewer inputs and could not afford to purchase as much machinery and other depreciable assets as they purchased during the 1970s and early 1980s. Thus, the use of mechanical power and machinery declined 13 percent during this time (Figure 3). The use of nitrogen fertilizer and agricultural chemicals was constant between the periods of the 1981 and 1985 farm bills, but with fewer acres harvested, the application rate per acre increased.

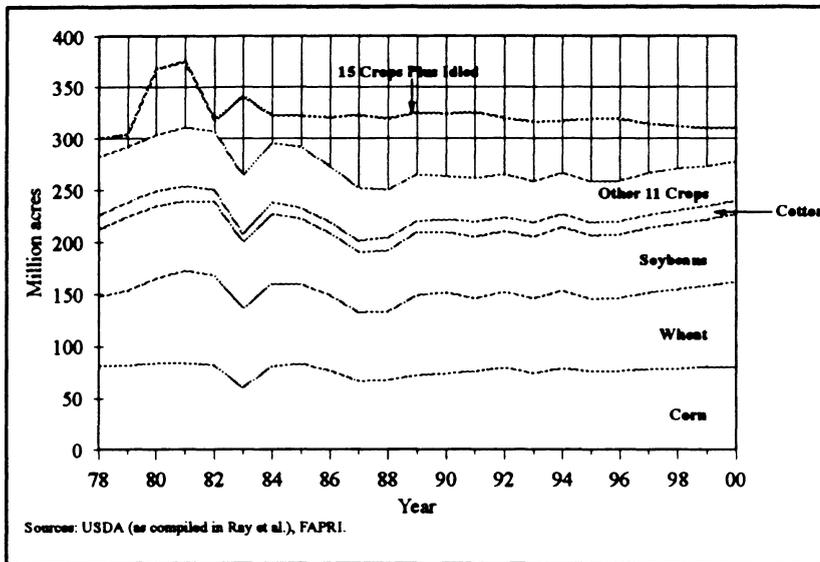


Figure 2. Changes in U.S. Planted Acres, Selected Totals for Fifteen Crops, Fifteen-Crop Total and Fifteen-Crop Total Plus Idled, 1978-2000.

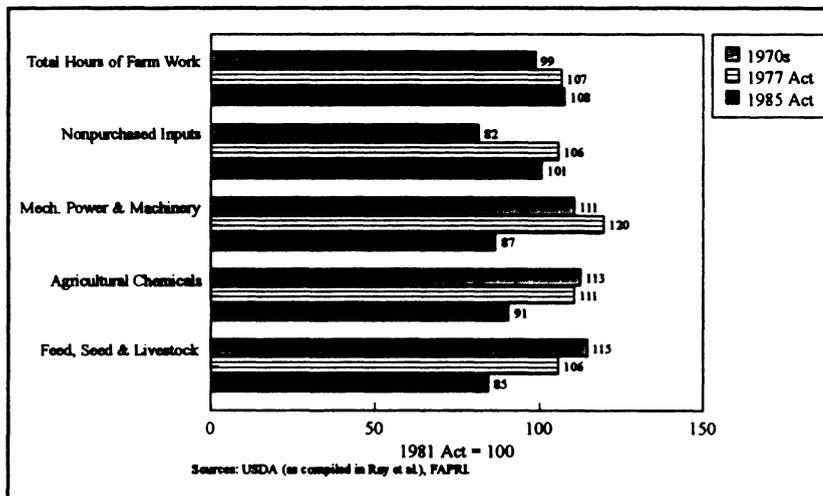


Figure 3. Indexed Changes in U.S. Agricultural Input Use From the 1970s to Recent Farm Bill Periods, 1981 Act Period = 100.

Demand for Crops

Export demand was the driving force of grain agriculture in the 1970s and early 1980s, but it has not been the case during the past decade — nor is it likely to be in the decade ahead despite policy changes designed to lower program

crop prices and recapture lost export markets. World grain markets have a *follow-the-leader* market structure, and as the U.S. instituted policies in the mid-1980s to reduce export prices, other countries followed suit. This resulted in little change in export quantities, but it brought about a further decline in the value of grain exports.

Figure 4 shows the change in the average value of exports for key program crops for the fiscal years covered by the 1981 and 1985 acts. Although the total value of agricultural exports rose 11 percent between the 1981 and 1985 bills, export values for program crops continued to decline. The export value of wheat fell 18 percent; soybeans, 16 percent; and feed grains, 4 percent. These declines follow a 20 percent drop between the 1977 and 1981 bills. Export values for major program crops continue to be a fraction of their values of the early 1980s. For example, the value of wheat exports was \$7.7 billion in fiscal 1981 and \$4.7 in fiscal 1993; the value of corn exports in fiscal 1981 (\$10.4 billion) was twice its value in fiscal 1993 (\$5.3 billion). Consumer food products such as fruit and vegetables and intermediate products such as soybean meal and wheat flour have replaced bulk commodities as major contributors to agricultural export value (see *New Directions for U.S. Agricultural Exports* leaflet).

To understand why the initiatives to expand grain exports in the 1985 and 1990 farm bills failed, recall why countries worldwide increased their productive capacity during the past two decades. The sudden demand explosion, price run-ups, embargoes and feared shortages of the 1970s frightened the governments

of many countries into investing in and encouraging mammoth increases in the productive capacity of their agricultural systems. Food security became an important political consideration, especially for those countries which had experienced widespread hunger during wartime. Many countries also wanted to protect their rural social fabric of family farmers and small-to-moderate sized farms. Early on, the United States captured a large share of this export demand by rapidly bringing retired land back into production. In other countries, the fruits of agricultural investments and incentives came on gradually at first, and then gained momentum in the late 1970s and 1980s. Both U.S. export competitors and customers increased production of major crops, leaving the United States with less demand for grains and oilseeds from importers and more competition for the remaining export market. Once countries made the long-term commitment to increase agricultural production,

the lowering of effective commodity prices through changes in U.S. policies had less of an impact on worldwide export supplies than many had expected.

While grain export demand has floundered, domestic demand has flourished. Increased domestic demand for grains has come from several sources, most of which are related to changes in consumer preferences and lifestyles. For example, the typical household eats an increasing share of its meals outside the home. Since most fast food and restaurant meals include meat, this trend has bolstered the demand for meat and, hence, the grain fed to livestock. Also, the increased popularity of high cereal diets and high fructose sweetener and the increased use of ethanol to extend fossil energy and improve the quality of the environment all have worked to increase domestic grain demands. The movement toward natural fibers and explosion in denim jeans demand in the 1980s have increased domestic cotton demand.

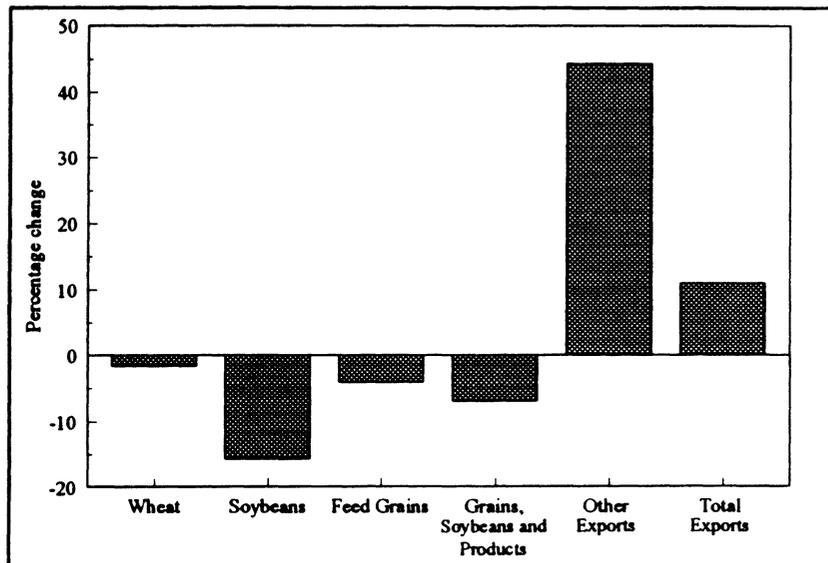


Figure 4. Percentage Change in Export Value of Selected Crops, Total Other Agricultural Exports, U.S., Between the 1981 and 1985 Farm Bill Periods.

As Figure 5 indicates, the increase in total corn demand since the early 1980s has come, and will continue to come, primarily from growth in domestic demand. Corn feed demand increased from an average of 4.2 billion bushels during the 1982-85 period (1981 act) to an average of approximately 5.1 billion bushels during the 1991 and 1992 crop years. During this same time, total domestic demand — including feed, industrial, food, seed and other nonfeed domestic uses — increased from 5.2 billion bushels to 6.5 billion bushels. Corn exports, on the other hand, averaged 100 million bushels lower during the 1991 and 1992 crop years during the early 1980s. Exports were another 200 million bushels lower in the flood-and-drought-affected 1993 crop year. The future does not look that much better. While exports during the remainder of the 1990 farm bill years (1994-95) are expected to increase somewhat from 1991-93 levels, FAPRI projects corn exports to average only 130 million bushels more during the period of the 1995 bill (1996-2000) than during 1991-92 — even after taking into account the GATT and NAFTA trade agreements. This 130-million-bushel export increase compares with a 615 million bushel increase for domestic corn demand during the period.

The picture is about the same for wheat since the beginning of the 1985 act period (Figure 6). Lowering prices by reducing support prices, liquidating stocks, reducing the use of land diversion and increasing export subsidies have not returned wheat exports to the growth rates of the 1970s. Wheat exports averaged 1.3 billion bushels during the four years before the 1985 legislation took effect (1982-85), 1.3 billion

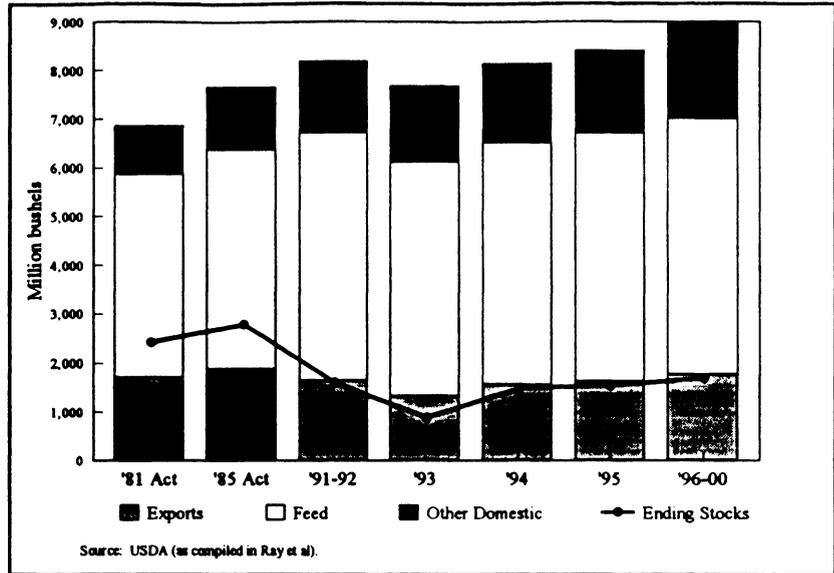


Figure 5. Historical and Projected Demand and Ending Stocks for Corn, U.S., 1981 Farm Bill Period to 1992-2000.

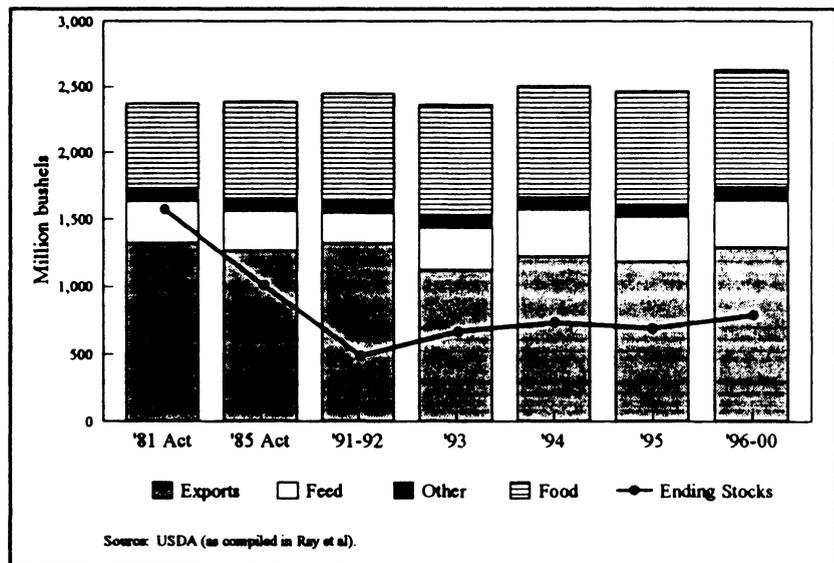


Figure 6. Historical and Projected Demand and Ending Stocks for Wheat, U.S., 1981 Farm Bill Period to 1996-2000.

bushels during the 1985 farm bill (1986-90), and 1.3 billion bushels during the first two years of the 1990 farm bill. FAPRI projects 1.2 billion bushels of wheat to be exported during each of the 1994 and 1995 crop years and to average 1.3 billion bushels again during the entire period of the 1995 farm

bill. Food demand in the early 1990s, on the other hand, is about 200 million bushels above the 1981 farm bill average of 650 million bushels. FAPRI's projections show total wheat utilization during the period of the 1995 farm bill will average 250 million bushels more than total wheat demand during

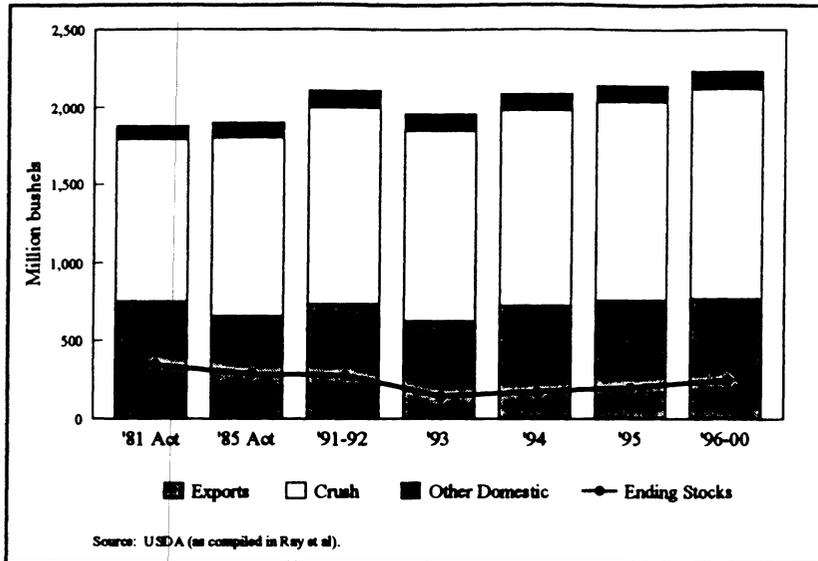


Figure 7. Historical and Projected Demand and Ending Stocks for Soybeans, U.S., 1981 Farm Bill Period to 1996-2000.

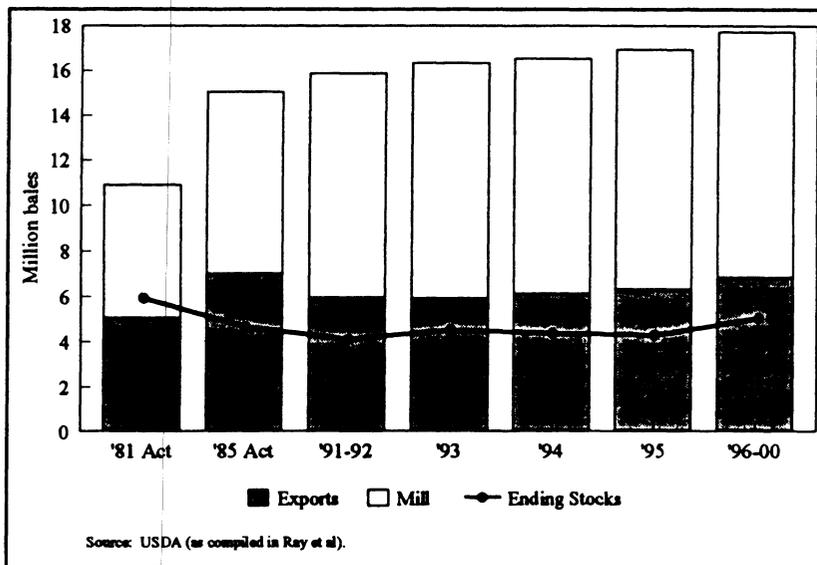


Figure 8. Historical and Projected Demand and Ending Stocks for Cotton, U.S., 1981 Farm Bill Period to 1996-2000.

the 1981 farm bill period. All of the increase is projected to come from domestic demand.

Soybean exports declined during the period of the 1985 act and have increased only marginally during the tenure of the 1990 act (Figure 7). Again, domestic use has grown faster than export

demand in recent years. Crush demand is projected to increase annually by 1.5 percent during the period of the 1995 act, while export demand is expected to remain flat. However, it should be noted that the soybean and grain export picture is particularly clouded right now. Adding to the

usual precariousness of export projections are changes in European Union's farm policy, lingering unknowns about the impacts of the NAFTA and GATT negotiations and uncertainties concerning the pace of recovery of the Former Soviet Republics and Eastern European countries toward market economies.

Domestic and export demand for cotton experienced relatively rapid growth during the late 1980s, with both increasing approximately 4 percent annually during the period of the 1985 act (Figure 8). The early 1990s has seen mill demand increase, but export demand has been flat. Domestic mill demand and export demand are expected to grow relatively slowly during the middle of the decade and increase moderately during the period of the 1995 farm legislation. These expectations depend heavily upon what happens in the Former Soviet Republics and China.

Supply-Demand Balance and Prices

Taken together, what is the expected result on farm and consumer prices, and specifically, prices adjusted for inflation? It will take a few years to work through the effects of 1993's flood and other weather events on grain and livestock prices. Over the longer term, it is reasonable to expect total demand for agricultural products to increase between 1.2 percent and 1.4 percent per year while supply will increase at about 1.5 percent annually, based

on estimates of the Council for Agricultural Science and Technology, FAPRI and the Agricultural Policy Analysis Center. Of course, the demand and supply estimates are expected yearly averages, and variation is expected. But overall, supply is expected to slightly outpace demand, which will cause real (inflation-adjusted) prices to decline. As Figure 9 indicates, this trend will continue the historical trend of declining real farm prices. With the benefit of hindsight, it is evident that higher real prices during the 1970s and early 1980s were an aberration — not the beginning of a new era for agriculture.

Incomes

Net farm income during the 1981 act slid to \$23 billion and then rose to an annual average of \$41 billion during the 1985 act, which is nearly a 80 percent increase. Government payments

increased during that period by about \$5 billion, but the increase was almost exactly offset by lower market receipts for program crops. Between these periods, the \$18 billion increase in net farm income actually stemmed from increased market receipts for nonprogram crops and livestock as well as lower production expenses. In general, since the mid-1980s, billions of dollars in increased direct payments, export subsidies and other programs have been spent to lower crop prices. However, it is unclear whether these expenditures have provided net contributions to farm income. The increased direct payments replace lost market receipts, and the lower export prices generate too little additional demand to increase gross revenue.

Current projections suggest that total agricultural receipts will grow an average of 2.5 percent annually through the end of the 1995 legislation. During that time, government payments are expected to decline slightly, so the bulk of the projected increase in receipts is

expected to come from increased livestock and nonprogram crop receipts (Figure 10). Current dollar net income is expected to decrease slightly from \$48.6 billion in 1993 to \$47.4 billion by 2000. Net income is flat because growth in production expenses is expected to equal gross income growth during the projection period (Figure 11).

Gauging the economic health of individual farm units is difficult because of the diverse structure of farming. Farm operator households averaged \$39,007 in 1990, which was \$1,600 above the average income for all U.S. households, but only \$5,742 of that was from their farms. Nearly three-fourths of farm operator households operate farms with less than \$50,000 in gross sales and on average, lose money on farming operations. As background for discussing farm policy and programs, average farm income computed from all farms, which range from farm residences raising a few calves to huge feedlots and broiler operations is less useful than information for farms that produce commodities covered by farm programs.

Farmers who participate in feed grain, wheat and other major crop programs are more likely to operate commercial-size operations and view farming as their primary occupation than most others involved in agriculture. In 1990, which is the last year these data are available, net farm income for farm program participants averaged \$15,000, and government payments averaged \$9,800. Government payments as a percent of net income were even greater for feed grain, wheat, cotton and rice producers who received at least \$25,000 in payments. For this

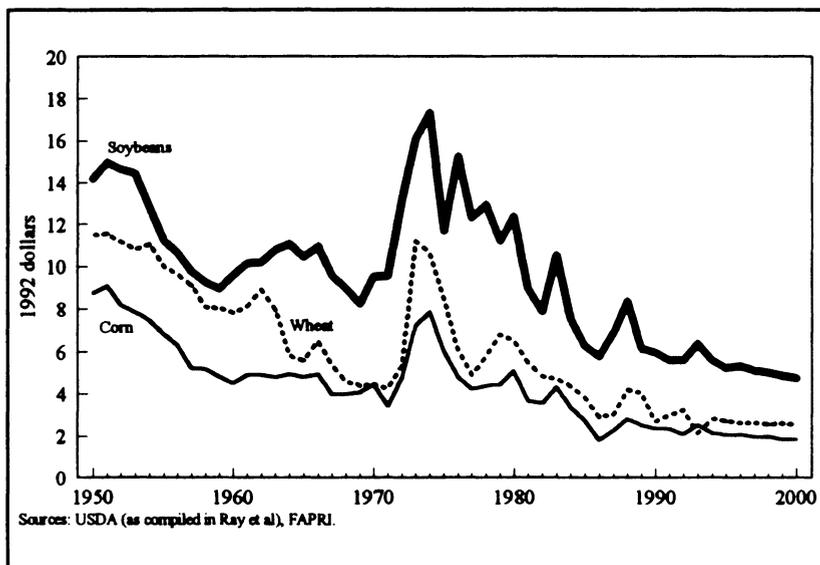


Figure 9. Real Agricultural Output Prices, U.S., 1950-2000, 1992 Dollars.

group, 1990 average net farm income was \$49,500 with government payments of \$44,500. The 1990 rate of return on average equity of \$838,000 for this group of primarily full-time, commercial operations was 5.5 percent. If government payments were subtracted out, the recomputed rate of return would be 0.1 percent.

Summary

The economic setting for U.S. agriculture during the period of the 1995 farm bill is not likely to change from the period of the 1990 bill. The rate of increase in aggregate farm productivity and supply is likely to be less than in many previous decades but greater than the rate of increase in aggregate demand. Inflation-adjusted agricultural prices will continue their long-term downward trend. The billions of tax dollars spent on deficiency payments and export subsidies to lower commodity prices failed to materially expand exports of farm program crops (see also Agricultural Trade Policy leaflet). While exports did not expand, what is unknown is what would happen to the U.S. competitive position in the absence of these programs. Beginning in the early 1980s, domestic demand for major agricultural commodities has increased at a faster pace than the quantity exported. That trend is expected to continue throughout the tenure of the next farm bill. Net farm income over the term of the next farm bill is expected to remain relatively flat in current dollars with its real value declining at about the rate of inflation.

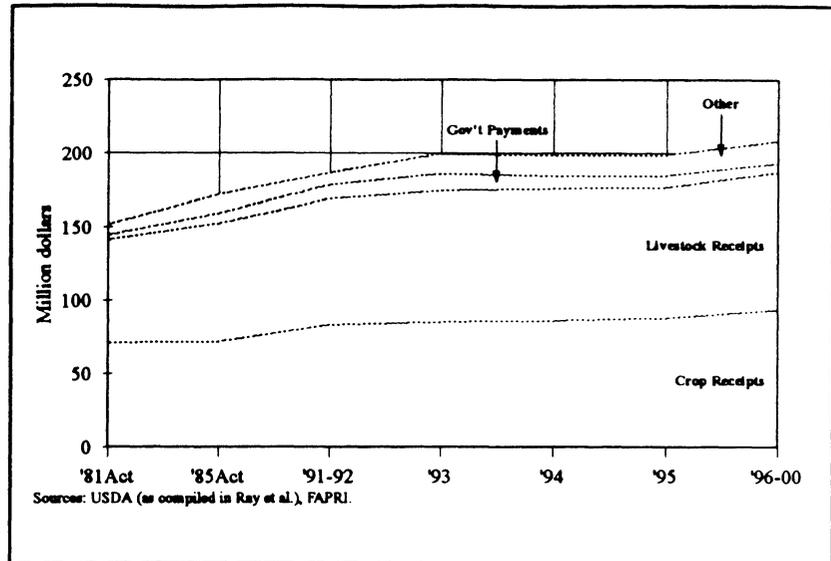


Figure 10. Historical and Projected Components of Gross Farm Income, U.S. 1981 Farm Bill Period to 1996-2000.

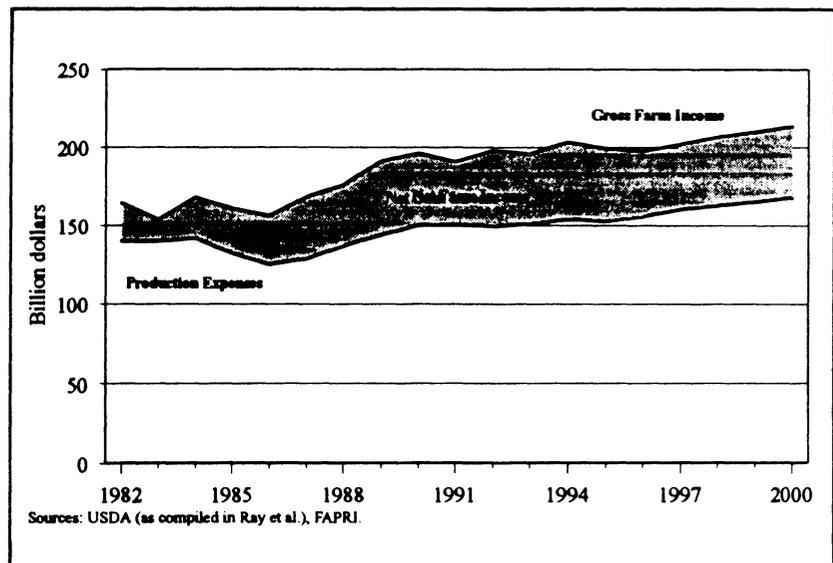


Figure 11. Historical and Projected Gross Farm Income, Production Expenses and Net Farm Income, U.S., 1981 Farm Bill Period to 1996-2000.

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¹ The 15 major crops are corn, wheat, grain sorghum, oats, barley, cotton, soybeans, rice, sugar, sunflowers, peanuts, edible beans, tobacco, rye, and flaxseed.

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New Directions for U.S. Agricultural Exports

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The forthcoming debate on the 1995 farm bill provides a timely opportunity to adjust U.S. farm policy to emerging opportunities in the world food market. In recent years, the agriculture's performance in the world marketplace has been relatively lackluster. Measured in real terms, U.S. agricultural exports tumbled nearly half from 1980 to 1986. Since then, agricultural exports have improved but remain nearly 40 percent below the 1980 peak.

The world food market of the 1990s promises to be stronger than in the 1980s but much less vibrant than the boom years of the 1970s. Developing countries, where populations are growing in size and affluence, will rely on food imports for a bigger share of their food needs. Competition for the market will remain keen among the United States and other major food producers, leading to further erosion in real commodity prices. For its traditional bulk commodity exports, U.S. agriculture will face low margins. Even so, global market prospects are brighter for consumer food products, in which U.S. competitors have a substantial head start.

The upcoming debate on the 1995 farm bill provides an ideal opportunity to refocus U.S. agriculture's global marketing strategy. This involves reviewing

the nation's farm policy options. Facing a growing world market crowded with competitors, the United States will need to be competitive in selling low-cost commodities while at the same time putting renewed emphasis on expanding its share of the high-margin market for finished food products. Both strategies require a substantial rethinking of some key agricultural policies.

Key Trends in the Export Recovery

The export recovery that began in 1986 provides a useful starting point for considering the future direction for U.S. agricultural exports. Two key trends underlie the recovery. The first trend relates to *what* products the United States is selling and the second relates to *where* the United States is selling.

Trends in Product Sales

Historically, the United States has been primarily an exporter of bulk farm commodities — such as unprocessed products like grains and oilseeds. The nation's vast

cropland, favorable climate, and well-developed infrastructure helped the United States take advantage of the 1970s boom in farm commodity exports. However, recent trends point to a global slump in farm commodity trade and brighter prospects for trade in finished food products. Measured in real terms, world food trade has increased nearly a third over the past two decades (Figure 1), but all of the growth has been in consumer products, which include fruits and vegetables along with processed products, and in intermediate products, such as wheat flour. Bulk commodity trade, by contrast, now stands below its level before the export boom began in the early 1970s.

While consumer products dominate the world marketplace, bulk commodities dominate U.S. exports. Consumer products now account for 45 percent of world agricultural trade but make up less than a third of U.S. agricultural exports. Even though bulk commodities have fallen from a two-thirds share of U.S. exports in the early 1970s, but they are still much more important than either consumer or intermediate products. In the world market, by contrast, bulk commodities account for less than a third of all agricultural trade.

Rising world trade in consumer food products spells oppor-

tunity for the United States in two possible ways. It could bring an increase in U.S. exports of consumer food products, or it could boost exports of bulk commodities to foreign manufacturers of consumer food products. Recently, the United States appears to be selling more consumer products while bulk commodity exports shrink.

The export recovery period reveals a clear change in momentum for U.S. agriculture's various product exports. Measured in real terms, U.S. bulk exports have fallen 2.1 percent annually. Despite that shrinkage, U.S. bulk exports have declined less than overall world trade in bulk commodities, thus boosting the U.S. share of world bulk trade to 28 percent. U.S. exports of consumer food products, meanwhile, have grown 12.5 percent a year, which is twice as fast as the growth in total world trade in these products. Overall, the rapid growth in consumer products has helped U.S. exports grow more than twice as fast as total trade in the world food market throughout the export recovery period. Still, the United States share of world trade in these products now stands

at just 13 percent, just half the European Union (EU) share.

In short, the United States has traditional strength in bulk commodities but that market has continued to shrink. U.S. exports of consumer food products have grown rapidly throughout the export recovery although the U.S. market position remains relatively small in these high margin products.

Trends in Trading Partners

Over the course of the export recovery that began in 1986, a modest realignment has occurred in U.S. agriculture's trading partners. Europe and Japan have long been considered U.S. agriculture's best customers, but these nations are mature food markets. U.S. sales to North America and other Pacific Rim countries have grown more rapidly. The former Soviet Union, despite the attention it receives by many producers and policymakers, remains a relatively small market for U.S. agricultural exports.

Asia has remained the most important buyer of U.S. agricultural exports throughout the

recovery. The share of total U.S. exports bought by Pacific Rim countries has risen from 34 percent to 37 percent, which is the biggest of any region. Japan has been an important and steady customer accounting for just under a fifth of U.S. foreign sales. U.S. firms now sell roughly equal amounts of bulk and consumer products to Japan. South Korea, Hong Kong and Taiwan have also been strong Pacific Rim markets for U.S. consumer food exports.

Measured against continued growth in Asia, Europe has fallen off sharply as a buyer of U.S. agricultural exports during the recovery period. The EU's market share of total U.S. exports fell from a quarter of U.S. exports in 1986 to a sixth in 1992. Part of that market drop is probably due to the EU's mountain of agricultural subsidies and its trade barriers against U.S. products.

Canada and Mexico, meanwhile, have taken up much of the slack from Europe. Our North American neighbors now account for a fifth of U.S. agricultural exports, double their share in 1986. Helped by the freer trade provisions of the Canada-U.S. Trade Agreement, U.S. farm exports to Canada have more than tripled since 1986, thus boosting Canada's share of U.S. exports to more than 11 percent. The dramatic turnaround in Mexico's economy, meanwhile, has led to a surge in U.S. exports, doubling Mexico's share of our exports.

The former Soviet Union has increased slightly as a market for U.S. agricultural exports in recent years, but those gains have all come due to heavy use of credit guarantees and other export subsidies. Without that assistance, U.S. sales to the various republics would have fallen.

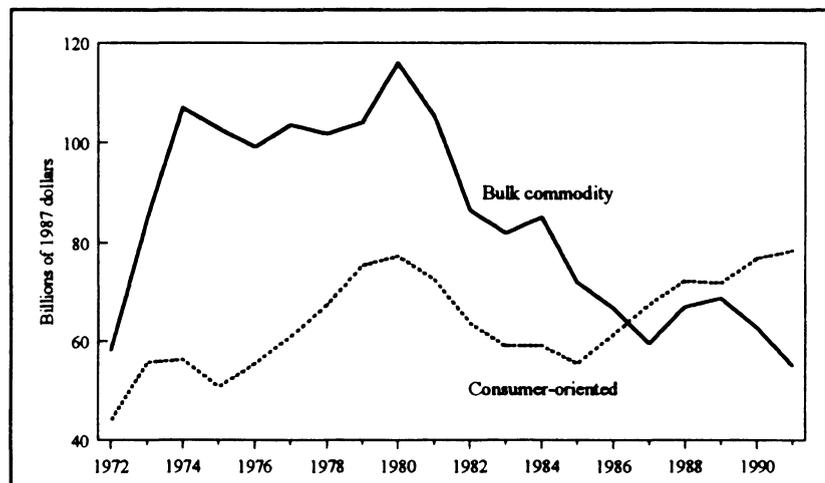


Figure 1. World Agricultural Trade Excluding Intra-EU Trade.

The World Food Market of the Future

Looking ahead, further growth in U.S. agricultural exports hinges on the pace of growth in foreign populations and incomes. These are the key fundamentals underlying world food demand in the future. The strongest population and income gains are occurring in the rapidly developing countries of Asia and Latin America. But local food production is not keeping pace, so the recent shift in U.S. farm exports toward Asia and Latin America promises to be the wave of the future.

World Food Demand

Population growth is key to the world food market since food demand generally rises in step with population. The world population is currently about 5.6 billion and growing approximately 1.5 percent a year. The globe's population is expected to grow more slowly during the next 30 years. The population in the developing world, however, is expected to grow nearly four times faster than the much smaller population of the developed nations. Thus, even with a gradual slowing overall, by the year 2020 nearly 8 billion people will rely on the world's farmers, and nearly 85 percent of those consumers will live in Asia, Africa and Latin America.

Income growth will also play a key role in the global food market of the future. Although income growth generally has a smaller impact on total food demand than

population growth, growing incomes can have a big impact on food trade. Higher incomes enable consumers in developing countries to upgrade and diversify their diets by purchasing foods from abroad that they cannot produce themselves.

Most consumers in the developing world are likely to spend a significant portion of any additional income on food. For example, spending on food accounts for well over half of total consumer spending in Sierra Leone, Sudan, the Philippines and India (Figure 2). In contrast, food's share of household spending is much smaller at the high end of the income spectrum. In the United States, Canada and most European nations, food accounts for less than 20 percent of household budgets, implying only a small boost to food demand with further gains in income.

As incomes rise, consumers also change the mix of foods they include in their diets. At the lowest rung of the food ladder, low-income consumers in many developing countries are primarily concerned with consuming enough calories. But as incomes rise,

consumers add more variety and quality to their diets, shifting from root crops and rice to wheat products, which require less at-home preparation, and eventually to relatively expensive animal products. In the wealthiest nations, direct consumption of cereals falls sharply, consumption of animal products shoots up, and consumer demand increases for processed foods and foods eaten away from home.

Income growth has enabled many of the world's consumers to move up the food ladder during the past 25 years. Still, consumers in developing countries on average continue to eat far more cereals and much less meat than consumers in developed countries. There is a pronounced, gradual shift toward animal products in several Asian nations where incomes are rising rapidly from low levels. This is especially evident in Korea, Malaysia and Thailand. The same trend is evident in Mexico.

World Food Supply

Although world food demand is increasing, world food supplies are also on the rise. Food supplies

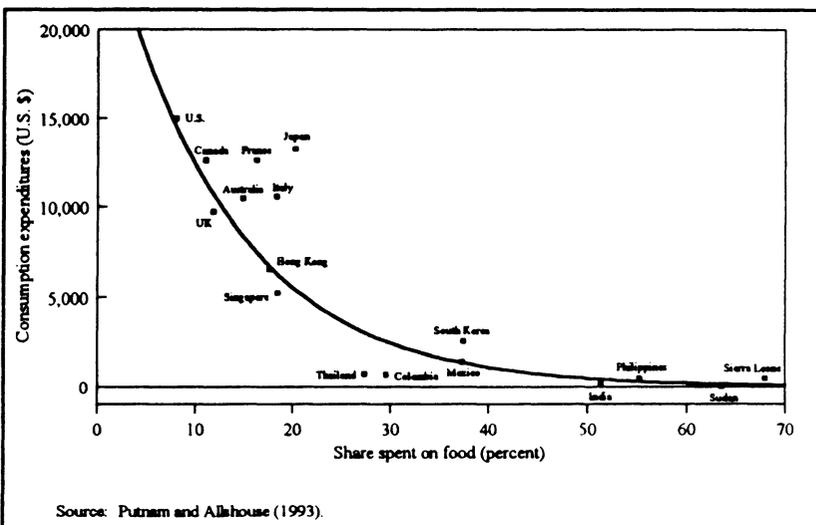


Figure 2. Share of Household Budgets Spend on Food.

are growing more rapidly than the world's population, and this pattern seems likely to continue. As a result, global agriculture is making steady gains in providing an adequate diet for a larger proportion of the world population.

Because cereal grains are by far the world's most important food, either to be consumed directly or as livestock feed, they are a useful proxy for tracking overall trends in the world food market. Steady gains in world grain production have easily outpaced growth in the world population during the past two decades, thus pushing up per capita grain supplies almost half a percent a year and improving the diet of most of the world's population. With slower growth in the world's population and steady gains in grain yields in the years ahead, further gains in world diets are likely.

World Food Trade

With the world's food supply growing steadily, world food trade seems likely to grow too. This is because there will be a mismatch between where most of the population lives and where most of the food is produced. Few countries produce more grain than is needed to meet their domestic needs. The leaders among these are the United States, Canada, the EU-12, Australia and Argentina. Consumers in these nations are already well-fed with per capita grain consumption well above the world average.

In contrast, much of Asia, Latin America and Africa — where a substantial majority of the world's consumers live — do not produce enough food to meet domestic needs. Since 1985, the share of grain consumption

produced domestically averaged only 75 percent for Africa, 92 percent for Asia and 95 percent for Latin America. In each of these areas, per capita consumption has risen faster than per capita production for at least the past two decades. A combination of additional population growth and brisk income growth promises to widen the gap between local food consumption and production. However, higher incomes will better enable most consumers in Asia and Latin America to fill their food supply gap with purchases in the world market. In addition, as incomes rise, consumers will increasingly demand a wider variety of value-added food products as they continue their climb up the food ladder.

Further improvement in world diets and the growing mismatch between where food is produced and where it is consumed promises stronger growth in world food trade in the years ahead. Mitchell (1993) estimates that growth in grain exports from the developed countries will average about 2 percent a year in the 1990s, up from the flat market of the 1980s but still well below the double digit growth recorded during the 1970s export boom. Meanwhile, the pace of grain imports in the developing countries will increase to about 5 percent a year as fueled by strong growth in Asia and Latin America.

In summary, the outlook points to modest growth in the world food market. The population of the developing world, which is growing in size and affluence, will increasingly rely on the world market for a bigger share of its food needs. However, world food demand should remain comfortably within the capacity of the major food producers, and competition is likely to remain

keen among them. Meanwhile, new competitors in the market may emerge as further reform in the former Soviet Union and Eastern Europe scales back consumption, boosts production and frees food supplies for export. Thus, the world food market of the 1990s promises to be somewhat stronger than in the 1980s but much less vibrant than the booming market of the 1970s.

Implications for Agricultural Policy

Faced with a mature food market at home, U.S. agriculture's fortunes will depend heavily on selling more products abroad. The world food market will expand over the next few years, but there will be many competing suppliers and difficult choices for expanding U.S. sales. Barring persistent adverse weather, prices for bulk commodities are likely to be relatively low and could decline in real terms.

Reductions in trade barriers will lubricate trade channels, foster efficiency gains through specialization and improve global income prospects. Faster income growth will give developing countries greater access to a wider variety of higher-quality food products in the world food market. Which foods the developing countries actually purchase, however, is an open question. Rising incomes in developing countries could encourage bulk commodity imports to be processed domestically. In most developing countries, however, capital is scarce and labor

is abundant. Thus, developing countries may prefer to import consumer foods that require capital intensive processing. Recent trends point to much more rapid trade growth in consumer food products than in bulk commodities.

Faced with this outlook, U.S. agriculture may choose from two broad strategies to improve its position in the world market. First, U.S. agricultural interests can accept thin margins and try to sell more bulk commodities while cutting production costs through new technologies. This strategy would essentially continue the approach that many in the sector currently follow.

Second, agricultural interests can try to take advantage of rapid growth in more profitable consumer food products. Food companies may try to sell more, either by investing abroad or by expanding shipments from U.S. plants. Investment appears to be the more likely to be channelled to foreign buyers because sales from foreign affiliates of U.S. food processing firms were more than three times exports of consumer food products in 1993. However, growing investment abroad translates into gains for U.S. farmers only if foreign affiliates purchase bulk commodities here. To date, rapid growth in consumer food trade has not led to a marked increase in sales of U.S. farm commodities.

This outlook and its related opportunities have four important implications for agricultural policy.

- U.S. interests in international policy matters will lie more in economic growth and less in attempts to reduce agricultural subsidies abroad.

- The export outlook raises questions about the validity of U.S. commodity programs.
- Programs that idle U.S. acreage may hurt U.S. competitiveness.
- Programs aimed at developing foreign markets need to be reappraised in light of current trends and market fundamentals.

International Policies

For more than a decade, U.S. agriculture has encouraged the world community and especially the European Union to reduce agricultural subsidies and trade barriers worldwide. However, with the prospect of plentiful supplies in the world food market, further reductions in subsidies may not address the principal problem. That problem is too little demand. U.S. agriculture's great productive capacity becomes an asset only when growth in world food demand is robust. Thus, U.S. agriculture has much to gain from economic and trade policies that boost economic growth in regions where populations are growing fast like Asia and Latin America. Ironically, the biggest benefit to U.S. agriculture from the Uruguay Round agreement will probably be its boost to world income and food demand, not its reduction in global agricultural subsidies.

Commodity Programs

A world market with sluggish trade in commodities and brisk trade in consumer food products raise some fundamental questions about U.S. commodity programs. First, the cost of such programs is likely to be high because of the

prospect for weak market prices for major crops. The cost of the programs is already under considerable scrutiny in an environment of tight federal budgets. Second, U.S. support prices could hurt the competitive position of many bulk commodity exports. Support prices were reduced in the 1985 farm bill and have remained at a low level to maintain competitiveness in the world market. However, if world prices decline in real terms in the period ahead, support prices could once again create a competitive problem, especially if they are frozen or raised in the 1995 farm bill. Finally, continuing commodity programs in a world market where the primary growth is in value-added products may simply wed U.S. farmers to the worst segment of the market. Put another way, eliminating commodity programs may encourage farmers to shift to products with higher profit margins and brighter market prospects.

Acreage Idling Programs

Current commodity programs also require farmers to idle a portion of their cropland acres in exchange for federal price supports. The amount of acreage that must be idled is set by the secretary of agriculture within the guidelines of the farm bill. Idling U.S. cropland capacity may place U.S. agriculture at a competitive disadvantage in the world market that lies ahead. In a slowly growing market crowded with foreign competitors, reductions in U.S. acreage simply encourage production elsewhere in the world. Moreover, if the bulk commodity market is growing only moderately, reductions in the United States may provide only a small boost to U.S. crop prices, especially if crop

production increases in other countries. Finally, cutting back U.S. crop production throttles the use of U.S. grain handling capacity, thus increasing average costs of handling and shipping grain.

Market Development Policies

The United States has used a number of export promotion programs to help develop foreign markets for its farm products. In recent years, export credits and export subsidies have been the two main programs even though they have recently been supplemented by the market promotion program.

Export credits. The U.S. has been spending more than \$5 billion a year on export credits in recent years. The question is whether these credits are flowing to countries that represent the best long-run markets for the United States. Roughly half the credits for fiscal 1992 were allocated to Russia and other former Soviet republics. But these countries are unlikely to be strong long-term markets for U.S. agricultural

exports. By contrast, Asia is a much more promising region for U.S. exports, but South Korea is the only Asian country to receive export credits. A rebalancing of credits across regions may be necessary to nurture new markets with significant long-term potential.

Export subsidies. Export subsidies have been a fact of life in world agricultural trade in recent years. Since the U.S. export recovery began in 1986, annual grain export subsidies in the European Union have gone from \$2 billion to \$4 billion, while U.S. export enhancement program (EEP) subsidies increased from \$250 million to just under \$1 billion. Europe's subsidies will come down under the final GATT agreement, but only gradually. While continued European subsidies provide some motivation for maintaining EEP bonuses, the bigger question is whether the export enhancement program is effective in developing high-potential foreign markets. In recent years, the majority of EEP bonuses have gone to North

African and Middle Eastern countries who are some of the biggest purchasers of U.S. wheat. While these countries generally have high population growth, their economic prospects are less than in some Asian and Latin American countries.

As U.S. farmers and food companies try to export more consumer food products, a broader variety of market development programs may be needed. In particular, U.S. firms will benefit from improved information on what foreign consumers want to buy. Thus, new programs aimed at market research on foreign food markets may pay bigger dividends than some current market development programs.

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Dairy Policy

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Background

The Agricultural Adjustment Act of 1949, as amended, is the authorizing legislation for the dairy price support program. The Agricultural Act of 1949 required the Secretary of Agriculture to support the prices received by farmers for manufacturing grade milk at between 75 percent and 90 percent of parity.

In response to a growing surplus of dairy products and increased government costs, the 1981 farm bill terminated the support price based on parity. It capped the support price at \$13.10 per hundredweight and tied future support prices to both the level of Commodity Credit Corporation (CCC) purchases and the net government costs of the dairy price support program. Nevertheless, milk surpluses and government costs continued to increase.

In an attempt to reduce both milk surplus and government costs, the Dairy and Tobacco Adjustment Act of 1983 initiated a voluntary milk supply control program. This Act also put into place a nonrefundable 15 cents per hundredweight assessment for generic dairy promotion and the establishment of the National Dairy Promotion and Research Board.

The 1985 farm bill authorized the dairy termination program which paid dairy farmers on a bid basis to quit dairy farming for a period of five years. The 1990 farm bill set a minimum \$10.10 price per hundredweight support level.

Current Situation and Forces For Change

Since peaking in 1981 at \$13.10 per hundredweight, the support price for manufacturing milk has been reduced to \$10.10 per hundredweight. This level of support is below USDA's estimate of cash costs of producing milk in every region of the United States. If farm level prices reached the support level, most dairy farmers would be operating at a loss. In fact, the Minnesota-Wisconsin Price (M-W)¹ has not reached support levels since 1987. This is evidence that as farm level milk prices move toward support, a number of dairy farmers will leave the industry and/or liquidate herds thus reducing milk production sufficiently to keep prices above support.

The current federal dairy price support provisions are more market oriented in that the market forces rather than the support level determine farm level milk prices. Two significant outcomes of this market-oriented dairy price support policy include the following:

- An overall milk product surplus involving butter, nonfat dry milk (NDM) and cheese no longer exists. Due to the continued trend to lower fat dairy products, the only major CCC purchases under the dairy price support program have been butter. On a total solids milk equivalent basis, CCC purchases slightly more than 6 billion pounds of surplus milk, most as butter, for a net annual cost of less than \$250 million.
- Wholesale dairy product prices (butter, NDM and cheese) have become much more variable resulting in greater farm price variability. Therefore, significant price risks now exist for milk processors, cooperatives and producers.

Lower price supports, combined with added risk of fluctuating milk prices, has encouraged dairy farmers to exit the dairy industry and milk cow numbers to decline. Since 1982, U.S. dairy farm numbers have declined

approximately 42 percent from 278,000 to 162,450. The number of milk cows declined from 11 million to 9.7 million head, a decline of 12 percent over the same period. However, since average milk production per cow during this period increased approximately 26 percent from 12,306 pounds to 15,554 pounds, total U.S. milk production has increased 11 percent, from 135.5 billion to 150.95 billion pounds.

Major Issues

During the next decade the dairy industry will likely continue to experience the problems of periodic excess milk production, variable milk and dairy product prices, surplus milk fat and inadequate profitability for the smaller commercial size dairy farms. For policy makers, the balancing act involves addressing these problems while keeping government costs for the milk support program at an acceptable level. The following issues will affect future dairy policy decisions:

- **Excess capacity.** For the next decade, annual increases in milk output per cow of 2-3 percent with less than a 2 percent increase in domestic commercial disappearance of milk and dairy products likely will occur.
- **Changing structure.** The trend to fewer and larger dairy farming operations will continue and likely accelerate. The smaller size commercial dairy farms find it increasingly difficult to generate an adequate level of family

income. Rural communities heavily dependent on a farm population are finding their economic base eroded as the smaller dairy farms and milk cow numbers decline.

- **Variable prices.** Long range financial planning by dairy farmers is difficult with uncertain and variable milk prices.
- **Surplus milk fat.** The trend to lower fat milk and dairy products will continue. CCC butter purchases will likely continue at relatively high levels until the price is low enough to stimulate domestic demand and/or exports.

Policy Alternatives and Consequences

Price Support Options

- **Status quo.** A continuation of the current dairy price support provisions would keep the support price at \$10.10 per hundredweight which is below the full cost of production for most dairy farmers. Inadequate returns on many farms would continue a trend to fewer and larger dairy operations and the number of dairy processors and marketers would likely decline. Structural change in dairy farm and processor numbers would be most pronounced in the more traditional dairy regions of the Upper Midwest and the Northeast where the smaller scale dairy farms and dairy processors constitute a larger share of the industry. For some rural communities located in

these areas, the loss of farm numbers and milk cows will negatively impact their economic base. Frequently, the land resource in these areas are best suited for dairy or livestock production. The local agribusinesses, the main stay for many of these small towns, would experience reduced business volume. Unless alternative employment opportunities develop, the nonfarm population for these rural communities would decline.

At the same time, retail milk and dairy product prices would likely increase at an annual rate of less than current inflation. Therefore, in real terms, the price paid by consumers for milk and dairy products would decrease. The low support price would keep milk surpluses at relatively low levels. Taxpayer costs for the dairy price support program would remain relatively low at less than \$300 million annually.

- **Eliminate dairy price support program.** Under the current provisions of the dairy price support program, market forces primarily determine prices for milk and dairy products, and the elimination of the program would likely lower dairy product and farm level milk prices but not drastically. The exceptions would include butter and perhaps nonfat dry milk. As butter and nonfat dry milk prices declined, milk utilization would shift from these uses to the production of cheese until net returns from butter/powder and cheese were more equal.

Although the short-run drop in farm level milk prices would not be drastic, increased price variability would accelerate the decline in dairy farm numbers and increase structural change to fewer and larger dairy farms. The introduction of new technologies that have the potential of substantially

increasing milk production could result in rather sharp declines in farm level prices.

Consumers would experience slightly lower but more variable milk and dairy product prices than under the current program because there would be no government costs under the dairy price support program. Thus, taxpayer costs for the purchase of surplus dairy products would disappear.

■ **Self-help programs.** Self-help programs include programs funded by and/or administered by the dairy industry (farmers, dairy processors or both) rather than by the federal government. Self-help programs may focus on demand enhancement via dairy product promotion and research, on the purchase and distribution of dairy products through domestic feeding programs or on international markets. Some self-help concepts also attempt to reduce the supply of milk marketed.

Recent discussions of self-help programs have centered on establishing authority for an industry board. This industry board could range from having only an advisory authority to the Secretary of Agriculture in administering the federal dairy price support program to assuming complete authority and responsibility for the support program. All or a majority of the costs to administer these self-help programs would be borne by the farmers through an assessment or a draw from federal milk marketing order revenue pools.

For example, improved price stability may be achieved by timely purchases on the commercial market of dairy products, nonfat dry milk and cheese. These purchased products would not reenter the commercial market, but would rather be disposed of

through domestic feeding programs or sold on the international market.

If price enhancement is the objective of self-help programs, the industry board would advise the Secretary to implement a standby supply management program if farm level milk prices dropped below a specified level or the level of milk surpluses were unacceptable.

To the extent that self-help programs are successful in improving milk and dairy product price stability, the market price risks to dairy farmers and dairy processors would be reduced. Lower market price risk alone could encourage additional milk production. If prices are also enhanced, milk production would expand further and unless a supply management program is implemented, the required quantities of dairy products needed to be purchased from the market to achieve program objectives could become burdensome.

Over the long run, structural change at the dairy farm level may not be significantly different under self-help programs than under the current policy. However, price stability and the possibility of net price enhancement with some type of standby supply program could reduce the rate of decline in farm numbers and slow the geographic shifts in milk production.

With less volatile farm prices, consumer prices for milk and dairy products would be more stable. If farm prices are enhanced, consumer prices would be higher. Since the costs of self-help programs are funded by the industry rather than by the federal government, taxpayer costs would be reduced accordingly.

■ **Increase the support price with supply management programs.** Since the current \$10.10 per hundredweight support price is below the cost of production for most dairy farmers, some increase in the support price may be achievable without increasing milk production to the point of burdensome milk surplus levels. However, if surplus levels become unacceptable, a supply management program would need to be implemented.

A voluntary supply management program is designed to maintain a balance between milk production and consumption by regulating milk production through voluntary participation in the program. Success in striking a balance between production and consumption using a voluntarily program depends on the attractiveness of the incentive to participate as well as the consequences of non-participation. Further, voluntary supply management programs are usually fully or partially funded by dairy farmers themselves through assessments. Examples of past voluntary supply management programs include the dairy diversion program and the dairy termination program.

Although voluntary supply management programs have been successful in reducing milk surpluses in the short run, they have not prevented surpluses from reoccurring. Mandatory supply management programs give producers no choice in participation. Non-participation results in economic consequences that are very costly.

If the support price was increased to a level that not only maintains greater price stability but also determines dairy product and farm level milk prices, a mandatory supply management program would be required in

order to avoid burdensome milk surpluses and relatively high government costs.

Dairy farmers could receive substantially higher prices for their milk marketings under high support prices and mandatory supply management. With this support price system, farm level prices would be more stable and financial planning would be easier. However, the impact on the dairy farm structure is not certain. The right to produce and market milk at the quota will take on a value and become an additional cost to producers entering the industry. If the quota is freely transferable, in part or as a whole, as is the situation in Canada, then the dairy farm structure may still evolve toward fewer and larger dairy farms. Existing dairy farmers may be in a better position to bid for additional quota for expansion than would newly entering individuals. In attempting to maintain the existing dairy farm structure, more restrictions exist on quota transfer for the European Union countries.

Depending upon whether a supply management program is used to maintain a specific dairy farm structure, the economic impact on rural communities would likewise be impacted. In either case, the structural change would be slower than under current provisions.

With increased price support, consumers would experience higher but more stable milk and dairy product prices. Since milk production is kept more in balance with consumption, taxpayer cost would be reduced with voluntary supply management for the purchase of surplus milk and dairy products and could be entirely

eliminated under mandatory supply management. Essentially the cost of the program is shifted from the taxpayer to the consumer.

Federal Milk Marketing Order Options

In light of significant regional shifts in milk production, fewer differences in regional milk production costs, and modern processing, packaging and transportation technology, existing federal milk order pricing provisions likely require reexamination. Specifically, reform of Class I differentials and the M-W may be considered. Included in the 1995 farm bill debate will be proposals for amending federal milk orders to correct perceived pricing deficiencies.

■ **Reduce Class I price differentials.** The 1985 farm bill realigned the national pricing system for fluid milk. It increased most federal milk marketing order Class I differentials. Increases, however, were more substantial for the southern orders. Thus, upper Midwest interests argue that the increased differentials have been partially responsible for shifts in milk production to the West and Southwest. They argue that because of the regional shift in milk production coupled with the fact that the Upper Midwest is no longer the low cost milk production region, the existing Class I differentials are no longer valid.

■ **Mandate a substitute for M-W price series.** The M-W price series has been used for nearly 30 years as the minimum price for Class III milk as well as the mover

of Class II and Class I prices for all federal milk orders. However, because of the decline in Grade B milk production in Minnesota and Wisconsin, the validity of the M-W is questioned. The 1990 farm bill specified that the Secretary of Agriculture study possible alternatives to the M-W. This study was completed in 1991 and a call for industry proposals and a hearing were held in 1992. At this time, the Secretary of Agriculture has not made a recommended decision on an alternative.

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Cornell University, under the leadership of Andy Novakovic and Mark Stephenson, has published a series of articles on dairy policy. For copies, contact Mark Stephenson at 607-255-7602 or fax 607-255-9984.

¹ The Minnesota-Wisconsin price is the weighted average price paid by Minnesota and Wisconsin butter/powder and cheese plants for Grade B milk. The M-W is used as the base price in setting minimum class pay prices by all federal milk marketing orders. A comparison of the M-W price to the support price is made because the support price is for manufacturing (Grade B) milk.

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Wool and Mohair Policy

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In the 1993 appropriation process, the U.S. Congress made the decision to phase out the wool and mohair incentive payment provided by the National Wool Act of 1954. Proposals for increases in fees for public lands grazing and other restrictions on public lands grazing have become increasingly common. These changes in policy have been precipitated, in part, by budget concerns and by pressures to protect the environment. In any event, their implementation will significantly impact the wool and mohair industry.

Wool and Mohair Incentive Payments

Background

With the National Wool Act of 1954, Congress explicitly recognized domestic wool as an essential and strategic commodity. Since it is not produced in the United States in sufficient quantities to meet the demand for the product, an incentive payment program to

encourage more production was developed. Payments have been made to qualified wool and mohair producers through the USDA.

The Wool Act, which enables the incentive payment plan, was enacted rather than simply increasing tariffs on imported wool to raise wool prices. The administration felt that higher tariffs would be contrary to the U.S. aim of expanded foreign trade. The Wool Act sought to stimulate production of 300 million pounds of shorn wool which was to be used as a measure of our national security and in promotion of the general economic welfare. The payments to producers under the incentive program in any year is limited to 70 percent of the total amount of the duties collected on imported wool and wool manufactures during that year.

Annual U.S. production of wool has never reached the Wool Act goal of 300 million pounds. Production peaked in 1960 at nearly 299 million pounds and has declined steadily. U.S. wool production was approximately 80 million pounds in 1993. This steady decline in the sheep industry is a result of a number of factors including predator problems, labor problems, market infrastructure problems and low-cost imports pressure. While the incentive program has not been successful in reaching its goal or

even maintaining the sheep industry, most would agree that it has slowed the decline.

Mohair production has remained fairly steady over the past several decades. Production was 9.25 million pounds in 1984 and 11 million pounds in 1993. Over 80 percent of the Angora goats are in Texas.

Current Situation

Wool and mohair incentive payments are being phased out over the next two years, with repeal of the National Wool Act (effective December 31, 1995). Wool growers will receive 75 and 50 percent of their calculated payments for the 1994 and 1995 marketing years, respectively. In addition, the Secretary of Agriculture is directed to offer a budget-neutral wool and mohair recourse loan programs as a marketing tool during 1994 and 1995.

Receipts from sheep and goats are derived most commonly from those raised on rugged range lands. The production of lamb, mutton, goat meat, wool and mohair has represented the highest opportunity for income generation on these lands. Although these range lands

provide some income from wildlife, alternative productive uses are limited. Rangelands utilized in sheep and goat production are an important component of the tax and economic base for many rural counties and communities in the Western states and in West Texas. The welfare and viability of rural communities will likely be adversely affected by the decline in the sheep and goat industries, which is fostered by the loss of the incentive program. In addition, the Wool Act provides the collection mechanism for the wool and mohair research and promotion checkoff programs. Another basis will have to be established as a means for implementing and collecting these funds if research and promotion activities are to be continued.

Issues

The sheep and goat industries have experienced low returns caused by increased production costs, relatively low sheep and lamb prices and unusually low wool and mohair prices. Without any other programs to assist or support these industries, the loss of incentive payments will significantly reduce the size and viability of this industry. For years, environmental concerns about the numbers of coyotes and other predators have led to regulations that have increased production costs and as a result, have reduced the production of sheep, lambs, wool and mohair on Texas and Western states' rangelands. Key concerns affecting the policy decisions for the 1995 Farm Bill include the following:

- Devaluation of rangelands on which the highest opportunity to generate income is from sheep, goats, wool and mohair production.
- Lowering of the tax base for rural counties and communities, thus impacting rural education, health and other social programs.
- Loss of jobs and incomes for agricultural workers currently employed by sheep and goat operations; many of whom are from minority groups.
- Lower supplies of domestically produced lamb, wool and mohair, thus potentially raising prices to U.S. consumers.
- Reduced income to agribusinesses that currently contribute to the production and marketing of sheep, goats, wool and mohair.
- The cost of any program that is enacted to alleviate economic pressure in the sheep and goat industry. With Congress operating within budget guidelines, offsetting revenue must be found to cover the cost of new or expanded programs. Since the wool and mohair program has been phased out, any new alternatives will likely be scored as new cost to the program.

Alternatives and Consequences

Status Quo

In the summer of 1993, policy makers began discussing amendments to the 1990 farm legislation that would eliminate price support payments to wool and mohair growers. This prompted a review of the economic impacts of that policy alternative.

Jones and Wyse estimated the economic impacts of eliminating wool and mohair payments on the following areas: 1) a 41-county region of west Texas that accounts for over 90 percent of the state's wool and mohair production, 2) the state of Texas, 3) the state of Colorado and 4) the state of Wyoming. The study considered only the initial loss of revenue in each region or state. It was not designed to estimate the effects of business exits or entrants to the industry or any other potential longer term business adjustments.

Table 1 includes the estimated economic impacts to the 41-county region of Texas and the state of Texas. These impacts reflect the loss of revenue from wool and mohair incentive payments only. For example, in the 41 county west Texas region a loss of incentive payments of \$71.8 million was estimated to cause regional industrial sales to decline by \$146.7 million. Besides regional business sales losses, regional household income was estimated to decrease by slightly more than \$75 million, and employment was estimated to decline by 3,000 jobs. It was estimated that those jobs

Table 1. Economic Impacts to the Wool and Mohair Industry from Loss of Incentive Payments to Selected States.

	Subsidy (\$MM)	Sales (\$MM)	Income (\$MM)	Jobs (#)	People (#)
Economic Region	1992	Economic Impacts	Economic Impacts	Economic Impacts	Economic Impacts
41 County West Texas	-71.8	-146.7	-75	-3,000	-6,293
State of Texas	-74.8	-185.9	-94.8	-3,597	-6,873

Source: Jones and Wyse.

Table 2. Economic Multipliers for the Wool and Mohair Industry for Various States.

	Sales	Income	Jobs	People
Economic Region	Economic Impacts	Economic Impacts	Economic Impacts per Million Dollars	Economic Impacts per Million Dollars
41 County West Texas	2.0348	1.0401	41.6047	87.6452
State of Texas	2.4767	1.2625	47.9344	91.885
State of Colorado	2.2022	1.1759	42.4055	69.3881
State of Wyoming	2.1145	0.7573	49.7427	84.3586

support the livelihood of 6,293 people.

Table 2 presents a comparison of multipliers for the 41-county west Texas region, the state of Texas, Colorado and Wyoming. The multipliers presented in Table 2 may be used to estimate state sales, income and employment impacts for any magnitude of sheep, goat, wool and mohair cash receipt reductions or increases. For example, at the Texas state level, every dollar from sales or payments generates a total \$2.48 in industrial sales in the state

economy. Each dollar in receipts from wool and mohair in Texas generates \$1.26 in income from all sources to individuals. Each million dollars of receipts lost from wool and mohair is estimated to remove 48 full-time-equivalent jobs from the state and impact the livelihood of 92 people. The results for Colorado and Wyoming indicate that the overall economic impacts of the sheep, goat, wool and mohair industry are similar to those in Texas.

The impact of a loss of incentive payments for the sheep,

goat, wool and mohair industry on federal, state and local tax generation was estimated for the 41 county west Texas region and the state of Texas. Information from the IMPLAN input-output model and the Texas State Comptroller of Public Accounts was used. The results indicate that for every dollar of payments lost in the 41 county region, almost \$0.15 in taxes (federal, state and local) or tax allowances are lost within the region. The loss of \$71.8 million in incentive payments implied that taxes and tax allowances collected would decline almost \$11 million in the region. Approximately two-thirds or about \$7 million of these impacts would be reduced taxes and tax allowances paid to the federal government. The remainder would be taxes paid to state and local jurisdictions. For the state of Texas, loss of incentive payments would result in a loss in tax revenues of approximately \$5 million.

Maintain the National Wool Act of 1954 and the Wool and Mohair Incentive Payments

This option would prevent the loss of economic activity and resulting tax collections outlined in the previous alternative. The costs would be a taxpayer burden equal to the amount of the incentive payments or continued deficit budget spending.

Establish a Target Price/Deficiency Payment Program similar to other current agricultural support programs

Target prices and deficiency payments are currently used for wheat, feedgrains, cotton and rice. The advantage of this type of program for wool and mohair is that it would bring the program in line with the other government supported commodities.

Converting the current incentive price program to a target price/deficiency payment plan calls for establishing the target price level. A method for arriving at an equitable target price could involve evaluating the relationship between the income protection that the current target price program affords wheat, feed grains, cotton and rice producers. A target price level could be determined that gives sheep and goat producers a similar level of protection. The sheep industry, however, has two complicating factors that would need to be addressed. One is the fact that meat generates most of the receipts for sheep producers. The government support for the industry would likely be on wool, which generates a smaller fraction of total receipts. For example, wool marketings generated 20 percent of total sheep revenues in 1990 (USDA). Cotton is similar in that there is dual production of cotton lint and cottonseed. In this case, however, cotton lint, which is supported under the program, generates the majority of cotton revenue relative to the cottonseed by-product that is not directly supported. The second complicating factor is that currently producers also receive an unshorn lamb payment as a disincentive to excess

shearing of market lambs. A target price/deficiency payment program that would be equivalent to current support levels and in line with the other program commodities must address these issues.

Sheep and goat producers, agribusiness and rural population and communities would not be impacted as greatly from the loss of incentive payments if a target price/deficiency payment program replaced it. At the same time, the loss of supplies of sheep, lamb and goat meat and wool and mohair would be minimized to consumers. Taxpayers' burden would likely continue with the budget exposure determined by the established target price relationship to current market prices.

Include lamb imports to the U.S. Meat Import Quota Law

Without protection from increased lamb imports the increase in the price of U.S. lambs, due to liquidating flocks, would likely be minimal. Major U.S. lamb packers own lamb plants in Australia and New Zealand and can easily replace their previous U.S. lamb slaughter with imported lamb and, therefore, continue to supply their U.S. markets. Price increases for U.S. lambs could be limited to the cost of shipping carcass equivalents to the United States.

If lamb meat was added to the U.S. Meat Import Quota Law, it could allow U.S. sheep and lamb producers to receive the higher prices that normally accompany flock reduction, thus reducing the impacts of the loss of incentive payments. Benefits from such action would accrue to farmers, agribusinesses, rural populations and communities as more income

is generated from the sheep, goat, wool and mohair industry.

This policy option would run counter to the Uruguay Round GATT agreement. If it were implemented, however, taxpayers would benefit since the Uruguay Round Agreements would substitute tariffs for quotas to control excessive imports. The tariffs would then be phased out over time under the Uruguay Round Agreement. Therefore, this alternative would, at best, appear to be a temporary transitional benefit to the wool industry. While it lasted, consumers would face higher retail lamb prices.

Public Land Grazing Fees

Background

The debate over public land grazing fees has continued since the first fees were proposed in 1877. Grazing fees were first charged on Forest Service (FS) land in 1906 and on what would become the Bureau of Land Management (BLM) land in 1936. Since 1906, fees have been set based on the cost of administration, a "reasonable level," private rental range value, range appraisal adjusted by the level of livestock prices and other factors.

The Public Rangeland Improvement Act (PRIA) of 1978 mandated the use of a new formula for calculating federal grazing fees on both FS and BLM lands. PRIA established a formula that was "to prevent economic disruption and harm to the western livestock

industry" by accounting for changes in the cost of production (USDA-USDI, 1986 and 1992). The PRIA formula uses a base value of \$1.23 per animal unit month (AUM) and is adjusted annually for changes in the private grazing land lease rate, an index of changes in beef prices and an index of beef production costs. By executive order, the PRIA formula is still in use today.

Current Situation

As priorities over the uses of public lands have changed and budget pressures have increased, the level of grazing fees have become a major policy issue. Recently there has been an effort by members of Congress and the administration to increase revenue by raising federal grazing fees and thus eliminate the perceived subsidy to public land ranchers. Proponents of increasing fees argue that current fee levels subsidize sheep and cattle production and that millions of dollars would be raised by higher fees. The Clinton Administration proposed raising federal revenues by \$76 million over the 1994-1998 period through increasing grazing fees on BLM and FS land. The Rangeland Reform '94 proposal put forward by the Secretary of the Interior was one of the most strongly debated issues in the West during 1993. Various rangeland reform proposals in 1994 have included changes in policy and regulations governing use of rangelands for livestock grazing, changes in the ownership of range improvements and water rights and higher grazing fees.

Proponents of higher grazing fees argue that the federal government is not collecting the full market value of the forage, and thus the public interest is not served. Opponents, however, suggest that grazing costs are much higher on public lands so that grazing fees plus the other costs associated with public lands grazing make the total cost per AUM of public lands grazing equivalent to or higher than costs on private lands. In addition, opponents argue that any cost advantage to public lands grazing associated with particular leases has been capitalized into the value of the permit. Ranchers who purchased or inherited a ranch which included a federal grazing permit have actually paid the capitalized value for the permit and thus do not benefit from any low cost grazing. If fees were raised, ranchers would lose the value of the permits raising an equity issue.

At this time, approximately 48 percent of U.S. stock sheep are produced in 11 Western public land states. Increases in grazing fees, coupled with the loss of the wool program, will negatively impact a large portion of the U.S. sheep industry.

Issues

In summary, key issues for future legislation include the following:

- Reduced economic viability of sheep production in the western U.S.
- Loss of jobs and income for workers currently employed in the sheep industry.

- Loss of grazing permit value, such as, reduced ranch values.
- Potentially higher lamb prices to consumers as production is curtailed.
- Impact on federal government payments-in-lieu-of-taxes to county governments.
- Ownership of improvements made by permit, including water facilities, on public lands.

Alternatives and Consequences

Status quo

The status quo would maintain the current formula for setting the public land grazing fee. Fees would continue to fluctuate around their current levels based on forage values, cattle prices and production costs. Charges of an unfair subsidy and of the government not getting a fair return for its resources would remain.

Higher fee

This option would increase fees to users of public land. Higher fees may either be administratively set or developed through a new formula that has a higher base value. Higher fees, whether administratively set or developed by a new formula, will reduce the profitability of the Western livestock industry. For sheep producers already affected by elimination of incentive payments, the increased costs of grazing will further reduce profit margins.

Rural areas would be adversely impacted under any higher grazing fee scenario. It is uncertain what changes would be made to the payments-in-lieu-of-taxes by the federal government to the counties where revenues are generated. If the current payments, which are based on a percent of government receipts, are continued, it is possible that some counties could see higher payments from the federal government if few ranchers reduce herd size or go out of business.

Several recent proposals have included a percentage reduction in the higher fee based on good land stewardship. A rancher would have to develop an acceptable land management plan and establish objectives that would have to be met to be eligible for the fee reduction. Problems with this include setting appropriate goals within the management plan. In addition, the fee reduction will likely be too small to fund any capital improvements as part of the management plan.

Reduced AUM allotments

This alternative reduces the number of animals that can be grazed on any allotment. Groups may propose reduction in herds to meet the needs of increased wildlife numbers and/or reintroduction or preservation of other species.

Any public range grazing policy changes will likely include this type of environmental emphasis. These herd reduction requirements are much more important and costly to ranchers than simply increasing grazing fees.

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Wheat Policy

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Background and Current Situation

The U.S. wheat situation has changed substantially from what it was prior to the 1990 farm bill debate. Five years ago, the wheat market was winding up two years of high prices brought on by reduced plantings due to large set-asides and Conservation Reserve Program (CRP) enrollments, drought-reduced yields and strong exports. By the end of the 1989/90 marketing year, wheat ending stocks were at their lowest level since the early 1970s. However, national wheat prices averaged \$3.72 per bushel, the highest since 1980.

Today's situation is different. Wheat stocks have begun to rebuild; the world wheat export market has softened; and U.S. wheat prices have averaged less than \$3.25/bu. for the past two marketing years. These changes in wheat sector conditions are attributable to the following circumstances: 1) five years of low acreage reduction program

requirements (ARP); 2) above average U.S. wheat yields; 3) stagnant world export demand, and 4) a dramatic percentage increase in U.S. wheat imports brought on, in part, by the combination of export subsidies under the expanded export assistance program (EEP) and by conservation reserve land removed from production.

Change in the wheat sector have not been uniform across all classes of wheat. Wheat production increased 18 percent between 1989/90 and 1993/94, with increases occurring in hard red winter, hard red spring and soft white wheats. Production of soft red winter and durum wheats declined. Imports increased by 75 million bushels per year. Most of that increase was in hard red spring and durum wheats. Overall exports were static, but there were increases in hard red winter and soft white wheat. During the same time, stocks-to-use ratios were virtually unchanged.

Differences in the quality, supply and demand of the various wheat classes have had differential impacts on market prices. In January 1994, major terminal prices for durum were \$2.40/bu. and hard red spring prices were \$1.24/bu. higher than five years earlier. However, soft white wheat

prices were \$.72/bu. and soft red winter wheat prices were \$.24/bu. below prices five years earlier. Finally, the price of hard red winter wheat was \$.26/bu. lower than the price of five years ago in Kansas City, which is the nation's major center for the production of bread flour.

Issues

Wheat issues are interrelated with other sectors of U.S. agriculture in both the domestic and international economy. For the purposes of this paper, issues will be limited to the following:

- Domestic policy issues including alternatives for dealing with the conservation reserve program (CRP), acreage controls, decoupling, target prices and loan rates.
- Trade policy issues to include the cost and benefits of the export enhancement program (EEP), General Agreement on Tariffs and Trade (GATT) and the marketing loan for wheat.

Policy Alternatives and Consequences

Status quo

The "status quo" situation is defined as follows: 1) no renewal of CRP and a return of most of the wheat acreage to production; 2) a continuation of EEP — but probably at greatly reduced funding levels; 3) a continuation of 15 percent flexibility provision (NFA) and 0/85; and 4) use of annual set-asides between 5 to 15 percent. The United States' share of world wheat trade would probably stay the same under most policy scenarios including the "status quo" scenario. However, it is not clear whether the "marketing loan" would stay in effect.

The return of CRP land (even with annual set-asides) would probably result in more acres being planted to wheat. Increased production would lead to larger supplies and lower prices. The end of CRP payments to farmers would probably mean a net reduction in overall payments to wheat farmers (loans, deficiency payments, CRP payments, etc.). The net reduction in government payments and lower prices would probably mean lower net income to wheat producers, and particularly since non-land costs of production can be assumed to increase over time.

Budget exposure would vary depending on the following:

- the size of the annual set-asides

- the level at which the regular loan is set
- the level at which the EEP program is funded.

There will probably be a decline in aggregate funding for programs that affect wheat producers. Although per capita consumption of wheat products is rising, wheat's purchasing cost is a relatively minor share of final retail value of most of these products. Consequently, the "status quo" is not expected to have a significant impact on consumers.

Domestic Policy Alternatives

- **CRP's impact on wheat.** A major domestic issue facing wheat policy makers is how to define the proper balance between maintaining a viable wheat industry with sufficient income support for producers, maintaining market share in the world market and compromising environmental interests regarding the disposition of CRP land. It is expected this balance will be sought within tight budgetary constraints.

Of the 36.5 million acres of cropland currently enrolled in the CRP, approximately 10.8 million acres (30 percent) have wheat base. The first of the CRP's 10-year contracts will expire after the tenth payment, which is scheduled for October 1995. While the CRP is not likely to be debated under the wheat title in the 1995 farm bill, its future and the implications on wheat program parameters warrant a

brief discussion in this paper (a more extensive look at CRP is provided in this paper series).

Signals about the future of the CRP are unclear. The policy alternatives appear to be in two sets which are to: 1) not extend the CRP contracts and 2) extend the CRP contracts. If the contracts are not extended, producers' primary options will be to return land to crop production or to retain the land in a conserving use. If the land is returned to conserving use it would be eligible for haying or grazing 0/92/85 payments, or for use as wildlife habitats and/or field windbreaks. CRP contract holders intentions suggest that over 50 percent of the wheat crop acreage base will likely return to production if there are no contract renewal opportunities.

The economic impacts on wheat producers if at least 50 percent of the wheat base in CRP returns to wheat production will depend on wheat program mechanics. If ARP requirements remain low and the NFA percentages are held at 15 percent, wheat prices might decline by 5 to 6 percent. If greater than 50 percent of the wheat base in CRP is returned to wheat production, actions to reduce adverse wheat price impacts may be taken. These actions could include increases in the ARP requirements and NFA percentages from current levels. Such adjustments in program provisions would affect all wheat producers, not just those who would have

wheat base released when their CRP contracts expire.

Hints for limited extensions of certain CRP contracts may be evident. The criterion used for selecting contracts for extension will directly influence the impacts on the wheat sector. If the current environmental benefits index becomes the criterion that is used for the selection of CRP contracts to extend, most contracts extended will be outside of the major wheat production regions because of its emphasis on water quality.

- **Acreage controls** Conceptually, acreage controls are supposed to boost farm income by reducing production and raising prices and net farm income. However, some analysts have argued that acreage controls force participating farmers to idle land, regardless of inherent differences in the land's productivity. Furthermore the resulting reduction in supplies, while it may have a temporary price-enhancing effect, also reduces the supplies available for export. When the United States reduces acreage planted, other major wheat exporting countries have increased their production. Also, as wheat prices rise, domestic consumption is reduced.

In the early years of the 1985 farm bill, most of the wheat acres idled were ARP acres. In the latter years of the 1985 farm bill and under the 1990 bill, the majority of the wheat crop acreage base acres idled were escrowed with CRP enrollments.

- **Decoupling.** Partial decoupling has occurred with the 0/92/85 and related programs introduced through the 1985 farm bill as well as the NFA and optional flex acre (OFA) programs introduced by the 1990 farm bill. In addition, the basing of deficiency payments on historical ASCS effective yields also partially decoupled program benefits from current production levels. Complete decoupling would mean that acreage reduction programs would be eliminated and payments would be decoupled from production and market prices. For instance, income support payments would be disbursed regardless of whether any wheat was planted.

In the short term, the domestic and world wheat markets would probably experience significant disruptions. Depending on market prices, U.S. wheat acreage previously idled (or not possessing a wheat base) could be brought back into production and thereby increasing supplies which would lead to price reductions. Assuming that a marketing loan is in effect and the loan price floor is bypassed, the lower prices and increased supplies could stimulate increased export demand. Since prices would be allowed to find a level at which available supplies should clear the market, stock levels would be limited to "normal" levels needed to meet pipeline requirements.

With this the case price risk would be shifted completely to the producer. Marketing alternatives such as forward

contracting, futures hedging and commodity options would become more important since these would be the only mechanisms available for producers to manage price risks.

Given constrained budgets, a drop in total returns per acre of wheat harvested would likely occur. Because farm operators need some threshold level of income to provide for family living and debt service, this could result in an increase in the average size and a decline in the number of wheat operations, even if there were no economies of size in wheat production. Government outlays would drop significantly as direct income transfer payments were gradually eliminated or reduced to some minimum. Over the longer run, prices could gradually strengthen although total returns per bushel might remain below levels realized when wheat was under "coupled" government price and income support. Some U.S. marginal croplands historically used to produce wheat might be switched to other crops or pasture.

- **Target prices.** Target prices were introduced in the 1973 farm bill. Originally, target prices were intended to reflect the cost of production. However, with the 1981 farm bill, Congress revised its thinking and target prices were set independently of production costs. Essentially, target prices became politically determined to assure guaranteed minimum income

transfers. Target price protection is guaranteed to only those producers who complied with the basic ARP requirements and was based on the farm's ASCS effective yield. Given budget pressures, it is not likely that producers will see an increase in target prices. The debate will more likely focus on reductions as a means of reducing taxpayer cost. As was the case with the introduction of the NFA concept, the debate regarding cuts in target price will be bounded by those that argue for direct cuts and those that press for a reduction in payment acres in exchange for more planting flexibility.

■ **Loan rates.** The method for calculating loan rates for wheat and other program crops was substantially revised in 1987. These revisions were prompted by the wide differences which existed between counties with respect to their posted county prices (PCP — the PIK redemption price) and their loan rates. This argument has been extended. Some suggest that if regional differences in a commodity's value should be considered in calculating the loan rate, then why not assign a different loan rate to each class of wheat? The four basic feed grains, which are close substitutes for one another, already have different loan rates. Considering the different uses, markets and prices for the five major classes of wheat, the question remains as to why loan rates for these classes do not reflect these differences. Critics of a class-based wheat loan fear

that this would be counterproductive for the following three reasons:

1. It would create confusion in areas where more than one class is grown
2. It would distort market prices since there is considerable variation in the prices of wheat classes both on an annual and seasonal basis
3. It would have little impact on production decisions since wheat producers look to the target price, which is the same for all wheat classes, as their final income goal.

Trade Policy Alternatives

■ **Export Enhancement Program (EEP).** The EEP program since 1990 has been a tool that the U.S. used in its attempt to obtain agricultural concessions from the Euro-

pean Union (EU) in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) talks. In addition, EEP has been used to counter what the USDA says were "subsidized" prices offered to Mexico, Brazil, the Philippines and other markets by the Canadian Wheat Board. Between June 1990 and January 1994, EEP wheat expenditures have totaled nearly \$2.9 billion (Table 1). From a budgetary standpoint, what is of greater importance is that EEP bonuses are now paid in cash rather than PIK certificates. This switch from certificates to cash bonuses is significant because of the debate regarding the efficacy of the EEP program. One example of this is an attempt to rationalize the "true costs" of the program with "additional benefits" such as improved U.S. wheat prices and reduced deficiency

Table 1. Export Enhancement Expenditures for Wheat.

Fiscal Year	EEP Expenditures (\$, millions)	EEP Subsidy/Bushel Subsidized (\$/bu)
85/86	105	0.88
86/87	286	1.10
87/88	1,064	1.00
88/89	494	0.58
89/90	152	0.39
90/91	392	0.86
91/92	1,026	1.34
92/93	690	0.89
93/94*	760	1.33

*As of January 1, 1994
Source: USDA

payments which allegedly offset the EEP subsidies.

When first introduced in 1985/86, EEP was used sparingly and targeted primarily to North African countries where competition from EU-subsidized wheat was most intense. However, beginning in FY 1986/87, the program was expanded to include the U.S.'s traditional customers with the exception of most of Western Europe, Korea and Japan. Some analysts argue that the United States has not gained market share. They suggest that when U.S. export competitors have sufficiently large exportable supplies, they will either match the U.S. subsidies as has been done by the European Union or else lower their prices as in the case of Canada, Australia and Argentina. Consequently, the primary beneficiaries of these trade tactics are probably the wheat importing nations. Exporter nations have not been able to significantly alter their market shares.

■ **GATT.** Although not specifically a 1995 farm bill component, GATT ratification, implementation, and related trade negotiations certainly will influence 1995 farm bill language. This is briefly discussed in this paper as it relates to wheat. Under the recently concluded GATT agreements, the United States and the European Union agreed to reduce export subsidies by 21 percent in volume and 36 percent in expenditures. The reduction will be made in equal parts over six years. If Congress grants approval of the GATT, the subsidy cuts will begin in 1995.

Independent of the GATT was the decision by the European Union to change its domestic wheat pricing policies and decouple income support from production decisions. The goal of these changes is to move EU wheat prices more in line with world market prices. Conceptually, the decrease in EU wheat producers' incomes, brought about by a lowering in

domestic support prices, will be offset by direct government payments. Unlike the U.S.'s income support system (deficiency payments), EU wheat producers could benefit from unforeseen price increases.

There could be several important outcomes resulting from the change in EU wheat support prices. First, depending on the size of the direct payments, there may be a shift in production out of wheat to other crops. Second, lower wheat prices will likely stimulate increased domestic utilization of wheat by the livestock sector which has had to contend with relatively high domestic grain prices. Finally, the size of export subsidies needed to compete in the world market could decline sharply and may even be unnecessary if world prices remain at or near current levels (see Table 2).

■ **Marketing loan.** The 1990 farm bill required the implementation of a marketing loan for wheat beginning with the 1993 crop. Under the marketing loan, a wheat producer may repay a Commodity Credit Corporation (CCC) loan at the lower of the outstanding loan principal plus interest or the posted county price (PCP). The amount of the loan principal forgiven is referred to as the "marketing loan gain." Producers could also forgo enrolling wheat under the usual CCC nonrecourse-loan program and may receive a loan deficiency payment (LDP). The LDP would be the positive difference between the

Table 2. Comparison of Realigned EU Internal Wheat Price with Non-EEP U.S. Wheat Export Prices.

Year	Estimated EU November Wheat Export Price Prior to Restitution* (\$/Metric Ton)	November U.S. #2 HRW FOB Gulf (\$/Metric Ton)
1991	\$236	\$150
1992	\$236	\$147
1993	\$165	\$146
1994	\$154	\$133**
1995	\$142	\$138**

*Restitution is the EU's export subsidy.

**Kansas State University Agricultural Economics Projection.

Source: USDA/FAS, "Grain: World Markets & Trade," January 1994, p.2.

county loan rate and the posted county price. A LDP would be available on all of a producer's wheat produced on wheat crop acreage base and flex acres from other crop acreage bases.

Conceptually, a marketing loan should eliminate the need for export subsidies and end the trade discriminating practice of offering EEP subsidies to two-thirds of the U.S.'s wheat customers but none to the rest. Given long-term trends in world wheat production and utilization, the world market price for wheat could average between \$2.55-\$2.85/bushel (based on U.S. farm gate prices) over the period of 1995 to 2000. If ASCS nonrecourse loan rates remain above these projected world prices, then an additional expenditure to the U.S. Treasury for loan deficiency payments would occur. On the plus side of the ledger, there would be no cost for EEP

other than an emergency food reserve, and government storage costs would be eliminated.

Another question related to the marketing loan for wheat is how well the PCP represents a competitive world price. It could be argued that the nonrecourse feature of the U.S. loan program supports price at the adjusted loan rate, thus the PCP pricing mechanism may not allow wheat to be more competitive in international markets. Therefore, the pricing mechanism for determining repayment rates could be an issue.

Summary

Policy tools such as marketing loans, EEP, NFA and OFA, ARP requirements, 0/85 and the CRP have not significantly improved the wheat situation from what pre-

ailed prior to the enactment of the 1990 farm legislation. Wheat stocks have remained low, exports have not expanded, and EEP expenditures have averaged \$700 million per year. U.S. wheat prices have only averaged \$3.15 over the last three years.

The goal of enhanced competitiveness has met with only partial success. The most significant achievements were the passage of NAFTA and the anticipated passage of GATT. However, both of these accomplishments were not part of the basic farm legislation. Possible changes in the approach to wheat policy include significantly reducing the scope of the EEP programs, continuation of the marketing loan, discontinued or selected renewal of CRP contracts, total decoupling and/or increased flexibility in base substitution, and increases/decreases in effective target prices and/or class-based loan rates.

This publication edited by Ed Smith and Ron Knutson, Texas A&M University.

Feed Grains Policy

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Background

Historically, feed grains (corn, sorghum, barley and oats) provisions have been a very important part of farm bills. Grown on more acres than all other program crops combined (excluding soybeans), the cost of feed grains programs also is frequently higher than the total for all other commodity programs. Moreover, feed grain prices influence other commodity prices.

Corn typically accounts for at least 75 percent of feed grains harvested acreage. However, because of corn's relatively higher yields, more than 90 percent of the benefits from feed grains programs go to corn producers.

Throughout the history of feed grains programs, eligibility for price supports and income supplements commonly has been linked to production (acreage) limitations. More recently — in the 1985 and 1990 farm bills — eligibility also has hinged on compliance with certain soil conservation/wetlands practices.

Over the past 60 years, farm bills have become more comprehensive and complex. In part, this is because of ever-expanding objectives that extend well beyond providing temporary economic

relief for farmers. Consumers, taxpayers, environmentalists, agribusinesses (including those engaged in international trade) and the nonfarm rural population all have brought concerns to the policymaking process in recent years. Beyond this, the production sector itself continues to change. In short, fine-tuning never seems to end.

Current Situation and Forces of Change

The feed grain sector is entering a period of rapid change and structural transition. The long-term decline in farm numbers may accelerate in the late 1990s as more farmers retire and fewer young farmers enter agriculture because of high capital requirements and uncertain income prospects. Declining farm populations will present serious challenges to rural communities in the Western Corn Belt and Great Plains where nonfarm employment opportunities are limited. Farm income at the national level has stabilized even though some regions have experienced severe

income declines due to localized weather problems. Between one-third and one-fourth of the commercial farms in severe 1993 flood areas of the western Corn Belt are struggling with large debt burdens. About 10 percent of the farmers in this region faced critical solvency problems before the floods. These financial difficulties are partly a carryover from the farm crisis of the mid-1980s and partly due to severe crop losses in two of the three years ending in 1993. Similar problems are present in the Southeast, which is an area affected by major drought in 1993.

Low carryover stocks.

Adverse weather has reduced the nation's reserve supplies of feed grains. Low stocks make the U.S. livestock industry vulnerable to widespread adverse weather in the mid-1990s although normal growing conditions in 1994 and 1995 should rebuild carryover stocks to more comfortable levels. In years of severely reduced feed grain production, the domestic livestock industry often is forced to sharply curtail grain use. The decline in feed use is brought about by high feed costs which trigger liquidation of breeding herds. That, in turn, places temporary downward pressure on livestock prices and thus worsening the cost-price squeeze in the industry.

Later, consumer meat and dairy product prices rise in response to reduced production.

Export market trends. U.S. feed grains exports trended downward in the early 1990s, with drastically reduced sales to previously large markets of the former Soviet Union (FSU) and Eastern Europe. Moreover, the U.S. share of exports declined (Figure 1). U.S. corn exports in 1993-94 will be about half as large as in 1980-81. There is little chance former centrally planned markets will return to their previous size in the foreseeable future although some growth is possible over a five- to eight-year horizon. Growth potential is likely to depend on U.S. government financing.

U.S. protein meal export demand (including corn by-product feeds) also has weakened in recent years due in part to FSU financing

problems and lower European Union (EU) internal grain prices. For many years, the EU has supported its grain prices well above world market levels but has imported oilseeds and protein meal at or near world prices. Artificially high EU grain prices encouraged much higher EU protein meal use and less grain feeding per animal unit than in the United States. The EU's recently reduced grain prices in preparation for new GATT rules are reversing that trend and have significantly reduced EU imports of soybeans and soybean meal. Reduced U.S. soybean and soybean product exports tend to shift U.S. cropland to corn. The change also negatively affects EU demand for corn gluten feed and meal and may force U.S. processors to develop new corn gluten markets elsewhere. Corn gluten feed and meal markets will be vitally important if the U.S. corn processing industry expands rapidly in the late 1990s to produce high-fructose corn syrup (HFCS) and/or ethanol.

Despite recent severe setbacks in U.S. feed grains exports, several factors point to at least modestly larger exports in the late 1990s. New EU policies are increasing its domestic wheat and barley feeding, and the EU is attempting to limit plantings. These actions suggest less competition for U.S. feed grains in international markets.

Growing populations and incomes may be helpful in Mexico, other Latin American and Caribbean nations and the Middle East. Exports to Mexico also are expected to increase with reduced import barriers under NAFTA. The Pacific Rim is likely to remain a long-term growth market for U.S. feedgrains as economies of the region grow.

In general, expansion of foreign grain production slowed in the late 1980s and early 1990s, because of U.S. policies that provided much less support to world grain prices. The recent GATT agreement, if ratified, may also restrain foreign feed grain production, thus improving the long-term position of the United States in world markets.

Domestic market trends. Animal and poultry feeding is the largest source of demand for the nation's corn crop. U.S. livestock feeding is becoming more concentrated with fewer and larger livestock farms. The pork industry appears to be poised for a rapid increase in concentration. Incentives for the structural change stem from needed improvements in coordination from researchers to breeding stock to packers to consumers. Consumer demand for uniform, low-fat, high-quality products is a driving force behind the structural change. Regional shifts may also occur with increased feeding in parts of the South and Southwest. Increased concentration and coordination in the livestock industry may lead to more stable long-term feed demand that is less prone to cyclical fluctuations and is more inelastic; thereby contributing to more price volatility as production varies from year to year.

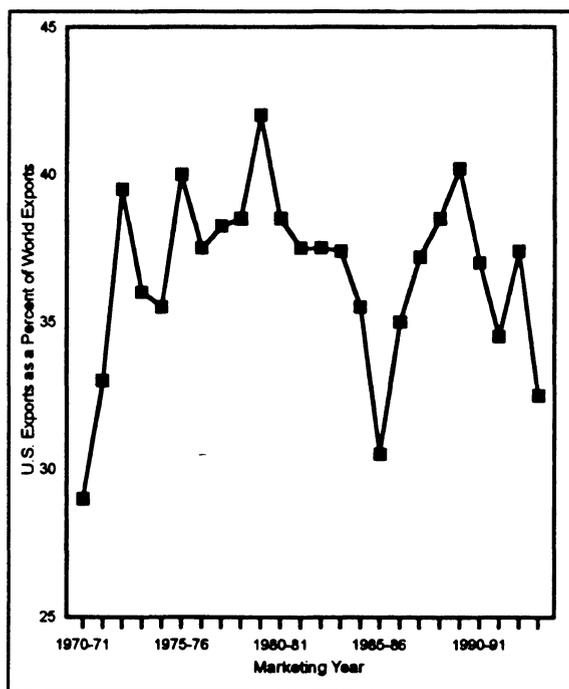


Figure 1. U.S. Coarse Grain Exports as a Percent of World Coarse Grain Exports 1970-1993

The rate of structural change in production agriculture may be influenced marginally by the level of feed grains prices and the size of government deficiency payments. High grain prices likely would accelerate the concentration in hog production. The process of change would be as follows: Strong grain prices would encourage smaller hog producers to rely more on cash grain income; at the same time, high grain prices and/or larger government deficiency payments might slightly retard the expected acceleration toward larger and fewer grain farms.

The corn processing industry also has become more concentrated in recent years to take advantage of new technology and economies of size in processing. Further concentration may occur as new types of corn are developed through biotechnology that are designed for specific types of processing and end uses.

Environmental Protection Agency (EPA) decisions about the use of ethanol derivatives in reformulated fuels in the nation's most severely pollution-prone cities will influence domestic corn processing demand. Growth in corn processing could range from modest to substantial for the remainder of the decade, thereby helping to offset recent reductions in export demand. A strong national commitment to ethanol utilization also would make the demand for corn more inelastic and contributing to increased price volatility.

Excess production capacity continues. While domestic corn processing has grown rapidly and now exceeds exports, the United States still has substantial long-term excess feed grain production capacity. With average growing

conditions and a zero acreage reduction program (ARP), excess production capacity in U.S. feed grains appears to be around four to seven percent under current farm program provisions. Sharply lower loan rates or aggressive use of marketing loans could reduce the excess capacity. Future excess capacity also will be influenced by policies relating to the conservation reserve program (CRP). Release of substantial medium-quality CRP land for feed grains production could increase U.S. excess feed grains production capacity by two to four percent.

Issues

Debate on commodity provisions of the farm bill will focus on four primary issues. These include the following:

- The nature and level of price and income protection.
- Taxpayer and consumer costs.
- Natural resource conservation requirements
- International competitiveness.

Ultimately, the following are the questions that are likely to be addressed for the feed grains sector in the farm bill debate:

- What should be the type and level of program benefits on a per unit (bushel) basis?
- How many units of production should qualify for benefits?
- What should be required in exchange for benefits?

Policy Alternatives and Consequences

Theoretically, many alternatives are possible as policymakers consider how to structure the feed grains provisions of the 1995 farm bill. In the analysis that follows, primary attention is given to two alternatives that seem most likely in 1995. One is the continuation of the present program (status quo) or fine-tuning it. Other alternatives, such as revenue assurance, "green payments" and targeting, are not included because they are covered elsewhere in this series.

Status quo

If the current program is continued, small-scale producers will continue to receive only a small percentage of all program payments because of their small contribution to production. Increasingly inelastic demand, greater production marketing coordination and continued excess capacity do not bode well for these producers. Therefore, dependence on off-farm income will likely continue.

The big question is what would happen to commercial producers, for example, those with gross sales of at least \$100,000 annually. Relatively fewer bushels of production have been eligible for deficiency payments in recent years because the gap between actual yield and the frozen farm program yield continues to increase and the flex (NFA) requirement has been instituted. It may be increasingly tempting not to participate in the program. (The

participation rate for corn already is lower than for most other program crops.)

Increased nonparticipation could result in more production, with accompanying drops in feed grain prices and net farm incomes. Prices also would become more variable. Eventually, some producers would respond to lower, more uncertain prices and income by returning to the program, assuming that ARP levels are reasonable.

However, the impact on the taxpayer is uncertain. Lower initial prices will result in larger deficiency payments to remaining program participants, offsetting some or all of the savings from nonparticipants. Subsequently, as some producers return to the program, taxpayers costs likely would increase, although ARP levels and potentially higher market prices could be compensating factors.

In the short-run, the return of some CRP land and further reductions in annual program participation should increase seed and fertilizer sales and the volume of grains to be marketed. In rural areas where feed grains production is an important part of the economy, the entire community would be affected much the same as agribusinesses.

Current policy is to keep nonrecourse loan price levels low enough to clear the market; i.e., to keep grain out of extended storage. The availability of marketing loans also supports this objective. Livestock feeders and other purchasers of feed grains benefit from this policy.

Environmental matters, particularly those relating to soil conservation and wetlands retention, would continue to be addressed if the current feed grains program is extended. However, if

program participation dwindles over the next few years, it may negatively affect soil conservation/wetlands practices that result solely as a cost of participation.

Fine-Tune the Present Farm Bill

Several provisions of the current feed grains program could be fine-tuned in a new farm bill.

■ **Program yields.** Many corn producers have argued that *program yields* should be updated to reflect current yield expectations. (Actual corn yields have increased more on average than wheat and rice but less than upland cotton since 1985.)

Federal budget restrictions would be the key to understanding the long-term impact. If no net cost budget restrictions stay in place or become more stringent, the NFA requirement probably would be increased to the point of cancelling, for payment purposes, the increase in program yields. After several years of adjustment, the impact would be quite similar to that described above for continuing the present program. Examples include, less program participation, an eventual reduction in production and higher, but more variable, prices and net returns.

If current budget restrictions were eased enough to accommodate actual yields and yields were adjusted annually, producing for the government might tend to become the objective. Producer income would increase initially with all the increase being borne by

taxpayers. Agribusinesses selling big-ticket items would benefit, as would rural communities. Environmentalists would appreciate greater program participation, which would enhance conservation/wetlands compliance, but they would be concerned by more intensive application of fertilizer and chemicals. Eventually, the federal government would probably need to increase the NFA requirement or the acreage reduction requirement to reduce costs and production incentives. At that point, the adjustment for producers probably would be more difficult than if yields had not been increased in the first place. (By this time, a portion of the benefits from higher program yields probably would have been built into land prices.

■ **Increase NFA.** Another possibility is to increase the NFA requirement, irrespective of changes in program yields or other provisions. This would push the feed grains program in the direction of greater market orientation while reducing taxpayer outlays. Over time, prices of feed grains may increase on balance because fewer acres would be planted just to maintain base while becoming more variable because of less program participation and an inelastic demand. The potential for greater price variability probably would discourage big increases in acreage planted in response to higher prices in a single year.

Higher feed grains prices may or may not increase

aggregate net returns in this situation. A higher price on all bushels sold and lower input costs because of fewer acres planted would be positive factors. However, giving up deficiency payments on increased flex acreage would be a negative factor. In addition, net returns for the crop grown on flex acres would be important in those areas with significant alternatives. Agribusinesses would be hurt by a lower volume of feed grains production because competing crops that could be grown on flexed corn base, tend to require fewer purchased inputs.

Increasing the number of NFA acres could discourage monoculture which is an environmental concern. However, the potential for lower program participation would not be conducive to conservation/wetlands compliance.

- **Adjust target prices.** Current target price levels have been in place since the 1990 crop year. Some producers have argued that the target price should be increased if for no other reason than to match inflation. However, because of the potential number of bushels to be covered, increasing the corn target price by even one cent per bushel could increase the cost to taxpayers by \$50 million or more. In an era of tight budgets, reducing the target price is more likely.

Decreasing the target price would discourage program participation and decrease net returns to producers in the short-run. However, after a period of

adjustment, overall production probably would be less, and prices and net returns would be higher but more variable than at present. With this case, the cost to government would go down, but agribusinesses and rural communities would be hurt in the short-run. Therefore, conservation compliance would be less effective.

- **Adjust Loan rates.** An upward adjustment in the loan rate to a level that remained below market-clearing prices would have little effect except to generate some additional short-term operating funds for producers. However, if loans were set above the market clearing level, it would encourage both program participation and production while increasing costs to taxpayers because of the potential for marketing loan deficiency payments on all of a participating producer's production, not just on the predetermined program yield. Given current budget limitations, loan rates above market-clearing levels could not be sustained without reducing target prices, increasing NFA and/or reducing eligible acres for production.

- **Adjust payment limits.** Increasing payment limit levels would tend to encourage greater program participation. However, its overall impact on production, prices and net returns may be limited because many large producers have either already split their operations into more than one entity or are not inclined to participate for other reasons.

Lower payment limitations would discourage program participation with many of the impacts being similar to those identified above for lower participation.

- **Increase stocks.** The federal government could be required to keep some feed grains in a strategic reserve as a part of a formal stocks policy for feed grains. Provisions of the FOR could also be changed to encourage more long-term storage of feed grains. This may reduce price variability to the benefit of livestock producers, but it would not increase average net returns for feed grains producers. Likewise, taxpayers would bear the cost of keeping stocks in reserve.

Conclusion

As the 1995 farm bill debate begins, the defining characteristics of the feed grains sector are its size and the potential for increasingly variable prices within the sector.

Program provisions will have important consequences for both producers and non-producers, even if the new provisions essentially maintain the status quo. To the extent that program provisions are altered from those currently in place, consequences could range widely. Ideally, policymakers will consider both short- and long-range consequences of whatever program provisions are selected.

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Cotton Policy

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Policy issues facing the U.S. cotton industry are similar to those that have existed for more than 60 years. The changing supply and demand forces in international markets, the protectionist trade policies of many countries and the vagaries of weather on world cotton production require considerable interaction between market forces and resulting adjustments of cotton policy programs. Farm income protection, resulting from policy provisions, aids in stabilizing prices and incomes which, in turn, promotes orderly adjustments of capital and human resources in the production process. Therefore, U.S. cotton policy is to be implemented so as to maintain treasury cost at politically acceptable levels.

The principal features of the cotton title of the 1990 farm bill included the following provisions: (1) an income support through deficiency payments; 2) a continuation and strengthening of marketing loan provisions; 3) a 15 percent cut in deficiency payments with increased planting flexibility (NFA); 4) a decrease in emphasis on the supply management based acreage reduction program (ARP) of the 1985 farm bill; and 5) an increased emphasis on conservation. The marketing loan provision was modified to provide for adjustments in prices paid by purchasers to keep them in line

with world prices. Therefore, the 1990 legislation was directed toward more market dependence, less restriction on acreage planted, lower program costs and greater world market competitiveness.

One purpose of the ARP as introduced in the 1985 farm bill was to target the level of U.S. stocks carried over from one marketing year to the next. Policymakers' goal was to achieve a carryover level sufficient to bridge the gap between seasons with an adequate supply for domestic and export demand. The desired level of ending stocks was the primary determinant in establishing the percent of annual base acreage to be set-aside. The 1985 legislation directed that planted acreage should be annually adjusted to maintain an expected four million bale level of ending stocks. However, the legislation did not consider temporal changes in usage (domestic plus exports), and it drew criticism on the basis that a fixed stock target could hinder market expansion.

The 1990 farm bill addressed this concern by reverting to a desired stock level based on a stocks-to-use ratio. This provision required the Secretary of Agriculture to establish an annual ARP for upland cotton such that the ratio of carryover to total disappearance would be 30 percent. The program was to be based on the most

current supply/demand projections available from USDA at the time the ARP level was announced. A targeted stock level was expected to reflect market forces better than a fixed level of stocks. Yet, it was recognized that the target level would be difficult to attain year-to-year because of weather and market factors that cause unforeseen changes in supply and/or demand during the year.

Current Situation and Forces of Change

The 1990 cotton program was implemented in 1991 at a time of tight stocks and relatively high prices in the United States and the world. However, during the 1991/92 marketing year, foreign stocks rose by 11 million bales to 37 million supported by a 26.1 million Chinese crop, up from 20.7 million bales the year before. This pressured world cotton prices lower, and this pressure increased as the Soviet Union collapsed. Instantly, five million bales of cotton formerly "trapped" in the Soviet system were placed on the world market. The "A" Index fell

20 cents per pound from the previous year. This drove the adjusted world price (AWP) during the 1991 harvest below the base loan rate of 50.77 cents.

The lower prices, resulting from the buildup in foreign stocks, could have caused substantial loan forfeitures and associated increases in budget outlays had it not been for the marketing loan. The marketing loan provisions provided the avenue for the United States to export more than 6.2 million bales in a world market where the "A" Index averaged only 63 cents per pound for the 1991/92 marketing year.

World prices remained weak in 1992/93 as the cotton producing republics of the Former Soviet Union (FSU) moved cotton into the world market at severely discounted prices or under barter arrangements. Foreign stocks remained at a high level of almost 34 million bales with stocks-to-use at 45 percent.

U.S. cotton exports totaled 5.2 million bales in 1992/93 while world cotton exports fell from 28.4 million bales the previous year to only 24.8 million. The FSU republic of Uzbekistan was the largest cotton exporter in 1992/93 as Central Asian cotton was priced 10 cents below the "A" Index and as much as 15 cents below the U.S. quotation.

Abundant foreign stocks and expectations of a large U.S. crop depressed U.S. and world cotton prices as the 1993/94 marketing year began. However, when production problems in China, Pakistan and other foreign producing regions surfaced, the world's textile industry began to indicate a demand for U.S. cotton. By calendar year 1994, a smaller U.S. crop than previously expected and decreasing foreign supplies began

pushing U.S. prices higher. By May, exports were forecast at seven million bales, and the U.S. stocks-to-use ratio declined to 21 percent. While fiscal year 1994 program costs will remain high during the 1993/94 marketing season, most of this can be attributed to events of calendar year 1993. The reduction in U.S. and foreign carryover stocks suggests fiscal year 1995 costs will be only one-third the fiscal year 1994 level.

U.S. cotton prices are largely determined by world prices. Thus, international political decisions directly impact world cotton prices. The dissolution of the FSU and the freeing of the cotton producing republics, which coincided with China's second largest crop, depressed world cotton prices. It was not until the end of 1992/93 that the United States reached the targeted 30 percent supply-use ratio.

While the provisions of the 1990 farm bill operated to maintain U.S. cotton's export share and protect farm income, these actions were costly. Commodity Credit Corporation (CCC) cotton outlays were larger than expected because world cotton prices were significantly lower than expected.

During the middle of the 1993/94 season, the forthcoming drawdown in foreign stocks became evident. The inverse relationship between the level of world stocks and prices caused the market to move higher. The expected U.S. supply-use ratio fell to 21 percent, down from an earlier estimate of 40 percent. The foreign ratio fell from 45 percent to 36 percent. Then in November 1993, world cotton prices began a rally that carried prices 20 cents per pound higher.

While the marketing loan provisions added substantially to

program costs in 1991/93, the provision insured that U.S. cotton was competitive on the world market. Additionally, it prevented cotton from being forfeited to the government under the terms of the CCC loan program. Furthermore, changes made in the marketing loan program in the 1990 Act improved U.S. cotton's ability to maintain price competitiveness while protecting producer income.

Major Issues

More than 90 percent of world cotton production is produced in non-market economies and/or with substantial subsidies for production and marketing. The Uruguay Round discussions on agricultural provisions of GATT make it clear that U.S. cotton's foreign competitors are not inclined to reduce their subsidies. The result is a tendency for cotton to move into channels of trade at prices below the real cost of production. If farm policy is driven by extremely restrictive budget considerations, the U.S. cotton industry is vulnerable. Principal issues include the following:

- Maintaining income support at a politically acceptable level.
- Managing the marketing loan to maintain U.S. competitiveness.
- Managing the cost of the cotton program.
- Improving the use of targeting stocks-to-use and the acreage reduction program.

■ Impact of Planting Flexibility Provisions.

■ Impact of Payment Limitations.

Other issues such as the Conservation Reserve Program (CRP), environment, crop insurance, land conservation, export credits and imports are addressed in other papers in this series.

Policy Alternatives and Consequences

Status quo

The status quo alternative will receive considerable attention in the 1995 farm bill debate. If current program provisions and implementation procedures were extended for the life of the 1995 farm bill, it is likely that the domestic market for cotton will continue to expand as U.S. textile suppliers are somewhat protected from foreign trade decisions through the marketing loan program. In addition, the marketing loan would offer continued export incentives in world trade.

It is likely that farm income will decline as inflation pressures on input costs will more than surpass any gains in cotton revenue due to frozen target price levels. As indicated earlier, cotton prices are virtually determined in a world market place dominated by "state traders." Therefore, program cost will vary directly with decisions made by foreign governments. The market will likely not be as volatile as existed under the 1990 farm bill because historical events

such as the demise of the Soviet Union are not foreseen.

Fine-Tuning the Current Program

The 1990 farm bill provides income support largely through target prices and deficiency payment provisions. The income support issues are closely tied to treasury cost considerations. The impact of income support extends beyond the producer reaching to the agribusiness and rural community infrastructure. Regional concerns stimulate various fine-tuning proposals concerning target price and loan levels, targeting stocks-to-use, flexibility provisions and payment limits.

Target price and loan levels

Target prices for upland cotton were frozen in the 1990 farm bill at 72.9 cents/pound, and payment yields were held constant. In addition, a 15 percent NFA was established. The CCC base loan rate was determined by a formula based on U.S. and world prices but cannot fall below 50 cents. Alternatives for the 1995 act are to increase, decrease, or freeze the income safety net.

The marketing loan program has prevented large scale forfeiting of cotton owned by producers to the CCC. It has allowed U.S. prices to decrease below the loan level when world prices were exceptionally low. Adjustments in U.S. prices (Steps 1 and 2 provisions) have added to the competitiveness of U.S. cotton in both the domestic and international markets. The primary disadvantage of the marketing loan has been government cost. Such costs, however, have occurred to some

extent as a result of subsidies paid by foreign governments to their cotton industries.

An increase in the target price would likely increase producer returns with the extent depending upon the production stimulus and any subsequent market price decrease. A higher target price would tend to encourage the use of more production inputs. As a result, economic activity would be increased for agribusiness firms and rural communities. However, a higher target price also would increase treasury costs. Payment limits would be reached with fewer planted acres per farm and government programs, instead of market forces, would largely influence the allocation of agricultural resources. Therefore, under a higher target price, supply management strategies would receive more attention.

A decrease in income support would bring about a decrease in the number of farms participating in farm programs. Planted acreage would tend to follow the prospects of economic incentives related to market returns from growing cotton and alternative crops. Producers would rely more on risk management strategies such as diversified enterprises, price planning market strategies and crop insurance. Producers failing to effectively manage financial risk and adjust production to market signals would be forced out of production. Less income would reduce the use of production inputs, services and machinery. Farmland value could decrease, production would decline, agribusiness sales would slow and rural communities could experience less business activity and fewer tax revenues from agriculture. The world's cotton production base would likely shift to

developing countries and developed countries whose subsidy programs remained intact and the U.S. treasury cost would be reduced.

Supply management

The primary objective of utilizing a 30 percent stocks-to-use ratio in the 1990 farm bill as a target when determining ARP rates was to provide sufficient carryover stocks to service domestic and export demand from the end of one season until new crop cotton was harvested. Thus, ARP is a supply/stocks management tool. But, because the ARP affects such a small percentage of the world's cotton acreage, the U.S. stocks-to-use ratio has limited impact on the world price. The United States alone cannot balance world supply and demand.

Supply management programs have had limited success due to the international nature of the cotton market. Acreage reduction programs have not been particularly effective in either maintaining producer income or reducing government payments because of the marginal productivity of set-aside land, the influence of market forces on program participation, the conflicting program objectives and yield and market uncertainties.

Conflicting government objectives also contribute to the lack of effectiveness of adjusting supplies via supply management. On one side is the perspective that government focuses on reducing direct farm program intervention by provisions that enhance market price. On the other side are the objectives of cheap food and fiber, full utilization of agricultural resources and international competition. These forces, with conflicting program objectives,

contribute to an uncertain market environment.

The CRP has removed some 36 million acres of erodible cropland from production practices. Since the CRP includes 1.4 million acres of cotton base, the potential to increase cotton program base acreage is substantial. The result will be a somewhat lower market price.

The U.S. cotton industry faces significant competition from man-made fibers and foreign producers/governments. Thus, it is vulnerable to tradeoffs between too little cotton and the resulting high prices and too much cotton and the resulting low prices coupled with large treasury costs. The industry depends on exports for approximately 40 percent of total use. In any year, potential production can easily exceed total use.

Flexibility

The planting flexibility provisions of the 1990 Act were intended to reduce budget exposure, to provide more freedom for producers to shift crop acreage, to stimulate production of crops in scarce supply, to restrict production of surplus crops and to encourage crop rotations. In many areas, however, flexibility puts single crop farm operators at a disadvantage because of the lack of economically viable crop alternatives.

The normal flex acreage (NFA) of 15 percent could be increased if cotton program costs are deemed too high and politically unacceptable. This would reduce acreage qualified for the regular deficiency payment and lower government cost while still maintaining desirable features of the program. A higher NFA percentage would subject more crop base to market forces, and the

dependence on ARP as a supply management tool would be reduced. In addition, the NFA could be used to offset part of the Optional Flex Acres (OFA) to reduce the percentage of eligible crop base available for flexing each year.

Payment limits

Payment limit provisions constrain government payments to individual farmers. Limits increase costs of production which, in turn, impact the income and structure of agricultural operations. Most cotton farm operators find it financially beneficial to comply with farm program provisions and payment limits. However, the number of operations producing beyond the payment limits is rapidly escalating. Large operations often forego payments to avoid restrictions associated with program compliance. Reducing payment limit levels would force more operators outside the program. Thus, the program would become less effective in managing production, prices and incomes.

Conclusions

Cotton policy issues focus on fostering support for the agribusiness and rural community infrastructure, income stability, appropriate interaction of supply and demand and competitive prices. Cotton producers and the government fare best when market prices are fairly strong and stock levels reasonable relative to demand. The challenge to policymakers and the industry is to design and implement programs that result in stock levels and

market prices that support the stability of producer incomes yet effectively compete with synthetic fibers and foreign cotton production.

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Rice Policy

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Background

Current rice legislation has created a transition period where income support to rice producers continues to decline in real dollars, and payment limitations restrict efficient use of resources.

The income support level was effectively frozen under the 1990 farm bill at \$10.71 per cwt, which is \$1.19 below 1984. Political realities are such that no future increase in income support is expected. Rice producers, therefore, are facing a future in which they will likely continue to depend more on the market and less on government income support.

The 1985 farm bill increased emphasis on making U.S. agriculture more competitive in world markets through lower loan rates and implementation of the marketing loan program for rice. Target prices provided the basic income support mechanism for payments to eligible producers. The 1985 farm bill froze the 1986 minimum target price at the 1985 level of \$11.90 per cwt and set the minimum 1987 through 1990 target prices at declining levels. It also froze payment yields at the 1981-1985 level.

The 1990 farm bill, as amended by the Omnibus Budget

Reconciliation Act of 1990, continued the freeze on payment yields and further cut government program expenditures by reducing payment acreage by 15 percent of base through the normal flex acre program (NFA). Producers, however, were allowed to plant (flex) the NFA acreage and, if desired, an additional 10 percent of their base (OFA) to approved alternative crops without losing rice base.

Current Situation and Forces of Change

Rice is an important food staple in the world accounting for about one-fifth of the world's grain consumption. Due to its nutritional value and cost per serving, over one-third of the world's population depends on rice as their primary food staple.

Globally, rice ranks as the second most important food grain next to wheat. Rice is by far the most significant food grain throughout much of Asia and is an important source of food in Africa and the Middle East.

There are four major types of rice including indica, japonica,

aromatic and glutinous. Indica accounts for 80 percent of world production, japonica 16 percent, with aromatic and glutinous making up the remainder.

World rice production (paddy basis) in 1993 is estimated to be 11,275 million cwt up 137 percent over the 1961 rice production level of 4,756 million cwt. The largest world rice crop was produced in 1992/93 with a production of 11,440 million cwt.

Since 1991, world consumption of rice has exceeded the level of production. As a result, world stocks of rice have been reduced to pipeline levels. Any unforeseen natural disaster, such as a general failure of the monsoon, could result in acute shortages of rice and possible ensuing political unrest in some countries.

The U.S. produced its largest crop in 1992 with a total production of 179.1 million cwt compared to production in 1962 of 66 million cwt. U.S. rice production in 1993 was estimated to be 156.1 million cwt. The primary rice producing states are Arkansas, California, Louisiana, Missouri, Mississippi and Texas.

About one half of U.S. rice production is exported, but imports of specialty rices account for 7 percent of domestic consumption. The U.S. produces less than 2 percent of world production but accounts for over 20 percent of world rice exports.

During the past decade, rice producers and resource owners have increasingly become concerned about their economic future as well as the impact that the following situations will have on the profitability and economic viability of their farm business.

- A competitive situation where traditional and emerging exporting countries are dominated by government state traders. Moreover, competition from developing countries whose trading price is not reflective of returns that will be required to keep resources in rice production as these economies develop and population expands.
- A farm government program with declining real income support which provides only above average producers with a level of support needed to cover their financial cost of production. This declining level of real income support makes producers concerned about being able to increase yields and/or reduce costs at a pace which will abate the inflationary-induced erosion in gross farm income.
- An annual average price for rice which has consistently been below the target price of \$10.71/cwt and in many recent years, below the \$6.50/cwt loan rate.
- A farm program and an economic environment which restricts a producer's ability to expand and capture economies associated with size and diversification.

- An uncertain future for the rice program and other institutional legislation.

Table 1 indicates farm firm baseline data for seven panel rice farm firms. The farm firms represent four rice producing states including California, Texas, Missouri and Arkansas. Average annual return on assets was negative for two rice farms. The Texas 3900-acre farm had a negative 4.67 percent return and the Missouri 3150-acre farm had a negative 1.28 percent return. The highest rate of return was Missouri with 8.12 percent.

The North American Free Trade Agreement (NAFTA) was significant to the rice industry. With the agreement, the United States gained the attention of countries that enjoy trade surpluses with us and have protectionist

tendencies. If shut out for no reason other than protectionism the United States has taken the position of retaliation. This administrative position significantly enhances the rice industry's ability to trade in world markets.

The General Agreement on Tariffs and Trade (GATT) concluded on December 15, 1993, after seven years of negotiation in the Uruguay Round of trade talks. For rice, the major highlights of negotiations are market access, reduced export subsidies and reduced internal support. GATT will provide increased access in Japan, South Korea and Taiwan. The United States will decrease its rice tariffs by 36 percent over 6 years in equal installments. The European Community must cut its tariffs by at least 15 percent by the year 2000.

Table 1. AFPC 1994 Baseline on Representative Rice Farm Firms, Assuming Continuation of the 1990 Farm Bill Over the Period 1992-1998.

Item	California 420 Acres	California 1300 Acres	Texas 1500 Acres	Texas 3900 Acres	Missouri 1500 Acres	Missouri 3150 Acres	Arkansas 1260 Acres
Average Annual Cash Receipts (1,000)	315.00	952.00	407.00	1005.00	506.00	969.00	467.00
Average Annual Return to Assets (%)	5.26	3.74	0.12	-4.67	8.12	-1.28	1.32
Average Change in Real Net Worth (%)	10.30	-5.90	-56.71	-86.20	45.59	-18.85	4.95
Average Annual Ratio Expenses / Receipts (%)	74.82	90.65	92.62	100.88	59.75	87.65	78.01
Average Gov't Payments as % of Receipts (%)	37.21	36.25	34.34	34.74	23.74	26.35	26.68

"Implications of the 1990 Farm Bill and FAPRI January 1994 Baseline on Representative Farms," AFPC Working Paper 94-1, Agricultural and Food Policy Center, Texas A&M University.

Issues

Key issues which will likely merit public policy debate and impact resource conservation, environmental stewardship, resources use efficiency and rice farm firm profitability/economic viability include the following:

- **Real income support.** Reduced farm government program spending due to federal debt has resulted in a prolonged decline in real income support. Can this trend continue while maintaining economic viability of U.S. rice production?
- **Resource use efficiency.** What can be done about payment limitations and other targeting mechanisms which restrict resource use efficiency by limiting a producer's capacity to capture economies associated with size and diversification?
- **Conservation of natural resources.** How can incentives be provided to invest in natural resource conservation and promote environmental stewardship while continuing to produce rice?
- **Trade.** How can the movement toward opening more markets and/or leveling the playing field be continued?
- **Global food security.** The importance of food security is reinforced by the fact that one-fifth of the people in developing countries are chronically undernourished. How can national food security for

developing countries, Eastern Europe, and other countries be promoted?

Policy Alternatives and Consequences

Status Quo

A 1995 status quo farm bill simply continues the current transition farm bill. The transition is from an income support program that at one time provided producers their cost of production to one that will have limited income support.

The current program, coupled with the economic environment, encourages rice producers to structure operations within the \$50,000 payment limit guidelines without regard to how efficiently resources are being used.

The best operators and resource owners expect that future returns on investment and real net worth will continue to decline. Risk and uncertainty for many producers are becoming too great for the monetary rewards.

Despite the low rates of return indicated in Table 1, many rice farmers perceive that holding the current policy scenario may be the best they can hope to secure. Consumers are clearly better off than they would be with no program. There is little or no evidence of environmental harm. However, taxpayer costs are relatively high.

No Rice Program

Without a rice program, all farm program provisions for rice

would be eliminated. This includes the elimination of the nonrecourse loan, target prices, acreage reduction, 50/85 provisions, conservation compliance and the marketing loan. While the rice market price would rise, this increase would likely not be sufficient to offset the elimination of payments resulting from the target price and marketing loan elimination. Substantial downsizing and restructuring of the rice industry would occur in the absence of the rice farm program. While production declines would occur in all regions, they would be the most precipitous in Texas and Louisiana.

Those farms that have production alternatives would shift all but the most productive rice land to alternative crops. All farms would experience substantial declines in land values to reflect the lower level of returns from rice and/or alternative crops or livestock.

Production could decline sufficiently in some regions to jeopardize the rice production and marketing infrastructure of the region. Therefore, restructuring would extend beyond the farm level to the related agribusiness and rural economy. Consumers would pay higher prices for rice. Exports would decline as the United States became less competitive in the world market.

Fine-tuning Current Rice Program

Relatively high taxpayer cost and deficit reduction will likely provide the incentive for change in the 1995 farm bill. On the other hand, it is not likely that such draconian actions as the no program alternative will result. It is highly probable that the current

farm program will remain the basis for the 1995 farm bill with fine tuning likely in the following areas:

■ **Annual acreage reduction requirements (ARPs).** The 1990 farm bill instructed the Secretary of Agriculture to implement an ARP program that would achieve a stock-to-use balance between 16.5 and 20 percent. The program has been effective for rough rice in aggregate, but problems appear when examining rice by class. For example, the 1992/93 long-grain stocks-to-use ratio was approximately 17 percent while the same ratio for the medium and short grains was 32 percent. In 1993/94, the increased demand for medium grain as a result of purchases by Japan will likely result in both classes of rice approaching stocks-to-use of 12 percent. Is it feasible to set ARP requirements by class? The industry may want to look at this although it may require more fine tuning than Congress has in mind.

■ **50/92/85.** The 50/92/85 has been used heavily in Texas and, in recent years, in California and Mississippi. Questions abound. Is it paying producers for idling land that would not be planted under current circumstances? If program spending needs to be cut, should 50/85 be the prime candidate? Certainly, Texas and California producers may have problems with this alternative. The regional differences will likely fragment rice interest if action is taken in this area.

■ **Update farm program payment yields.** As with all target price supported commodities, rice farm program yields have been frozen since 1986 and thus reflect production technology dating back to 1976. If yields are brought current, they would better reflect current technology but would result in higher program expenditures unless offset by other mechanisms including increased NFA.

■ **Marketing loan.** The marketing loan will be measured against its stated objectives of international competitiveness and the release of stocks given program cost. If discontinued, producer income would likely fall, other agribusiness would be adversely impacted as less volume was moved through the system, and Commodity Credit Corporation (CCC) stocks would likely increase. Increased stocks and reduced producer income could encourage producer special interests to push for increasing loan rates and higher ARP levels, thus reducing the competitive position internationally.

Major Modifications of Current Farm Bill

A major restructuring of current program provisions could include the following:

- Increase target price to offset inflation when annual inflation rate is about 3 percent
- Freeze nonpayment acres at current levels.
- Eliminate annual acreage reduction requirements.

- Eliminate the payment limitation.
- Allow current base to relocate and simplify base building.
- Increase soil and water conservation assistance.

The above are several key modifications which would reduce the financial stress of rice producers and resource owners. They would likely offer the incentives to promote environmental soundness, increase resource use efficiency and allow a more orderly transition to a farm government program with limited income support. If inflation remains in check, it is unlikely that program cost would increase significantly.

Enhance Cost Sharing Assistance to Rice Producers for Improving Water Management

Cost sharing could provide the incentive to conserve soil and water resources, promote environmental stewardship and allow for resources to be used more efficiently, thus improving the economic viability of rice farms.

Land forming, straight levees and water control systems would allow for the following:

- More timely field operations.
- Improved machinery performance rates.
- Reduced irrigation water requirements.
- Enhanced producer's ability to manage a crop.

- Full genetic potential of plant material.

A field that is precision leveled will dry out faster and allow a producer more days suitable for field work in most crop years. Depending on the farm firm, this may reduce water requirements, reduce the amount and size of the machinery needed, improve machinery performance, increase the acreage farmed, enhance management, improve yields or some combination.

Reservoirs, water delivery and water recovery systems would promote the following:

- Storage of surface water which would normally be lost.
- Allow for more timely and efficient irrigation.
- Reduced labor.
- Improved management.

- Multiple water use.

- Conserve groundwater.

Government cost would depend on the extent of the cost share. Environmental and water quality improvement would be directly related to the attractiveness of the incentive.

Conclusion

For the rice industry, the 1995 farm bill debate has a sense of urgency. Rice is one of three or four commodities to which program cancellation has been threatened/recommended. In many respects, the policy decision involves a decision whether U.S. policymakers desire that the United States maintain its rice industry as a viable domestic and international market force.

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Oilseeds Policy

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Background

The 1990 farm bill established marketing loans and loan deficiency payments (LDP) for soybeans and minor oilseeds. The minor oilseeds include sunflowers (oil and non-oil types), safflower, canola, flaxseed, rapeseed and mustard seed. Canola is the name for a group of rapeseed varieties, and is the prevalent rapeseed grown in the United States and Canada. The minimum national average loan rates were set at \$5.02 per bushel for soybeans and \$8.90 per cwt for minor oilseeds. A 2 percent loan origination fee was charged by the Commodity Credit Corporation (CCC). For 1994, the loan origination fee was abandoned in the budget reconciliation process, and the minimum national loan rates have been adjusted to \$4.92 per bushel for soybeans and \$8.70 per cwt for minor oilseeds.

A CCC oilseed loan can be repaid at a level that is the lesser of the loan rate plus accrued interest or at the USDA announced repayment rate. The repayment rates are announced daily for soybeans and every Friday for the minor oilseeds. An LDP is available to producers if the announced repayment rate falls

below the county loan rate. The LDP is the difference between the loan rate and the announced repayment rate on the day the producer chooses. If the LDP is selected, the oilseed cannot be placed in the CCC loan program. For crops not planted on 0/92 acreage, the crop can be divided between the marketing loan and the LDP.

The 1990 farm bill allowed planting of minor oilseeds on 0/92 acreage for other crops when a set-aside is in effect. In such a case, the producer must decide at the time of acreage certification between the 0/92 deficiency payment for the program crop and the marketing loan or LDP for the oilseed crop.

The major crop commodity provisions of the 1990 farm bill, including the oilseed provisions, were designed to give producers more flexibility in responding to market signals. Accordingly, "flexible acres" or "triple base" acres were established for feedgrains, wheat, upland cotton and rice. This provision established normal flex acres (NFA) at 15 percent of the base acreage for the crop and optional flex acres (OFA) at 10 percent of the base acreage. Deficiency payments are not paid on the 15 percent NFA, and producers are eligible to plant soybeans or minor oilseeds on those acres. Producers are eligible

for deficiency payments on OFA if planted to the program crop, but they could choose to forego those payments and plant soybeans or minor oilseeds on the OFA.

Current Situation and Forces of Change

The current economic environment for the oilseed industry in the U.S. is more market oriented than anytime in the past 15 years although meal and oil exports continue to be subsidized and there are import duties on some oils. Oilseeds can compete freely for acreage with other crops based on actual or expected market prices. The CCC loan prices for oilseeds are generally below market price so that producers are encouraged to produce to meet market requirements and not for government purchases. Export credit guarantee programs (GSM-102 and GSM-103) as well as the PL-480 program, support U.S. vegetable oil and meal exports. In addition, soybean and sunflower oil exports have been subsidized under the Export Enhancement Program (EEP). About 200 thousand metric

tons of sunflower oil were exported under the Sunflower Oil Assistance Program (SOAP) in FY 1993. The recent North American Free Trade Agreement (NAFTA), as well as agreements under the Uruguay Round of the General Agreement on Trade and Tariffs (GATT), suggest that oilseed trade barriers will be reduced somewhat over the next 5 to 15 years including the U.S. import tariff on oil. Significant reforms have been made in the European Union Common Agricultural Policy (CAP). The impact of these reforms should be largely reflected in market prices by 1995.

Soybeans

Soybean production in the United States expanded during the 1970s, reaching a record 2.3 billion bushels on 71.4 million planted acres in 1979. The growth in acreage in the late 1970s was geographically widespread. The growth in production was fueled by rapidly expanding domestic and world demand for high protein animal feed and edible vegetable oil.

U.S. soybean production during the 1980s stagnated as declining acreage was offset by higher average yields. Between 1979 and 1990, planted acreage declined by 19 percent and remained between 59.2 and 59.5 million acres through 1993. The decline in acreage came entirely in southern growing areas as low yielding soybeans could not compete with other program crops with relatively high target prices or with the Conservation Reserve Program (CRP).

The stagnation in U.S. soybean production over the past 12 years was also associated with increased competition from

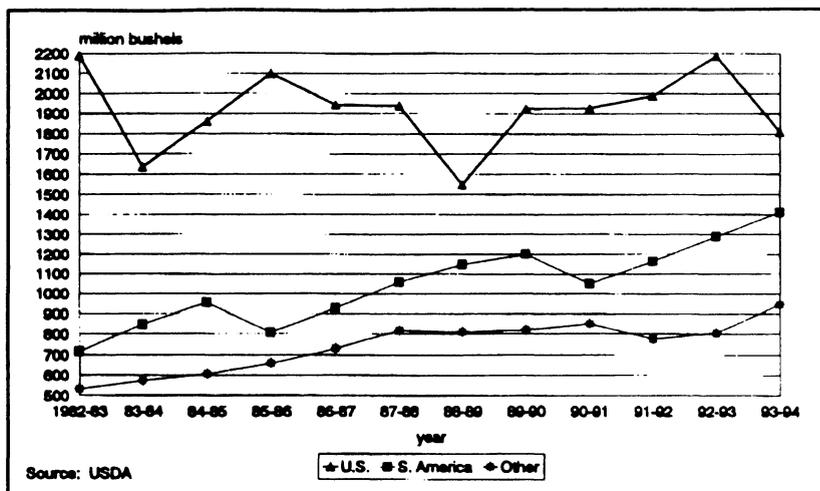


Figure 1. World Soybean Production.

soybean production in South America (Figure 1), with the expansion in world production of other oils, particularly palm and canola and with a slow down in the rate of growth in protein feed demand in the United States and Europe. U.S. exports of soybean protein peaked at 26.3 million metric tons in 1981-82 and totaled only 22.3 million tons in 1992-93. In contrast, exports of South American protein exports nearly doubled during the same time period and were nearly equal to U.S. exports by 1992-93.

The domestic crush of soybeans increased by about 14 percent from 1979-80 through 1992-93 with the majority of increase occurring in the past three years. Another round of expansion in livestock and poultry production pushed domestic soybean meal use to record levels in each of the past four years. Domestic soybean oil consumption increased by 47 percent from 1979-80 through 1992-93. Part of the increase was associated with population growth, and part of the increase was associated with substitution of soybean oil for tropical oils and animal fats.

Minor Oilseeds

Planted acreage of minor oilseeds has fluctuated significantly since 1987 but generally increased since 1990 (Figure 2). Planted acreage of sunflowers, canola and safflower demonstrated the greatest response to the incentives of the 1990 farm bill. Increased acreage of those crops resulted from the flexibility and 0/92 provisions. Thirty-seven percent of the minor oilseed acres were planted on flex and 0/92 acres in 1993. Acreage has generally responded to market conditions, thus suggesting that the flexibility provisions of the 1990 legislation have functioned successfully with respect to minor oilseed.

Imports of minor oilseeds were relatively stable from 1987-88 through 1992-93, with flax representing the largest share of the imports. That pattern, however, was altered during the 1993-94 marketing year, to include a sharp increase in canola imports. The small U.S. oilseed crops in 1993 and abundant canola production in Canada accounted for the large increase in imports of canola

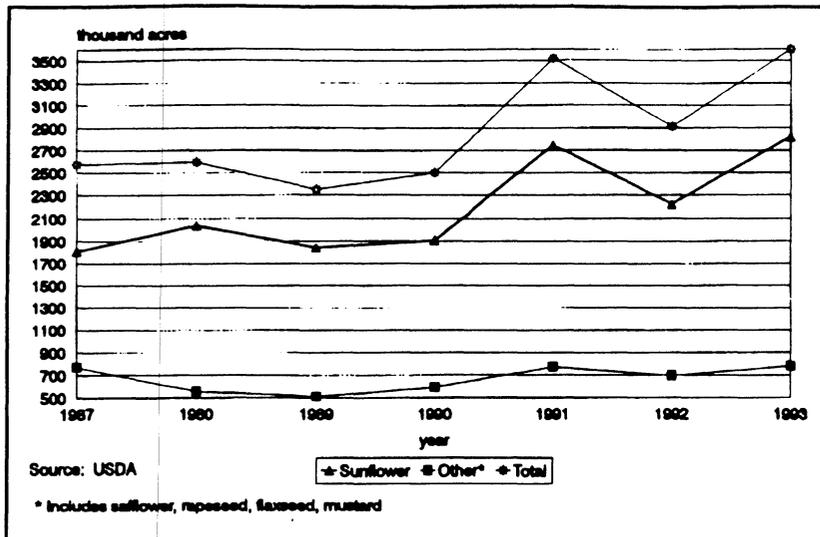


Figure 2. U.S. Acreage of Minor Oilseeds.

and canola oil. Imports of canola are expected to moderate as U.S. oilseed production rebounds.

Domestic consumption of safflower, rapeseed and mustard has been very stable since 1987-88. Consumption of sunflowers increased sharply in 1991-92 and was expected to remain high through 1993-94. Consumption of canola showed the most year-to-year variation.

Prices of minor oilseeds have generally remained above the marketing loan price, with the exception of flaxseed. However, the flaxseed price has increased from the lows during the 1991-92 marketing year.

Issues

For U.S. oilseeds, the challenge is to remain competitive in the world market. Forces over the last 10 years have led to increased oilseed production around the world, thus reducing the U.S. share of the world market. Domestically, policy changes have allowed

oilseeds to compete more freely with other crops for acreage. The flex provisions of the 1990 farm bill eased what appeared to be an unfair advantage to program crops with relatively high target prices. Key issues influencing 1995 oilseed policy decisions include the following:

- **Level of federal government spending for agricultural programs.** Reduced spending would have at least two major implications for oilseeds. First, reduced subsidies for other program crops would likely make oilseeds more competitive with those crops. Reduced target prices for feedgrains, wheat and cotton or reduced payment acres (increased NFA) would have similar impacts. Second, it appears that reduced spending might disproportionately impact the export subsidy programs for vegetable oils. Alternatively, credit guarantee programs are intended to be budget neutral — limits can be set on budget exposure but money is not budgeted for the

program. Credit programs have been successful in maintaining exports and increasing sales to countries that have difficulty purchasing without credit. The cost effectiveness of such programs is another issue.

- **World competition.** U.S. oilseeds, particularly soybeans, have lost market share over the past 15 years. Part of the loss can be attributed to domestic policy that favored the production of competing crops. Part was because policy decisions in other countries, for example European oilseed subsidies. Trade liberalization, as reflected in NAFTA and the recent GATT agreements should put U.S. oilseeds in a more competitive position over time. Competition from South American soybean production, however, will remain keen.

- **CRP policy.** Decisions on CRP will influence the amount of acreage available for crop production after 1995. A significant portion of acreage in this program in the Southeast and Delta states was in soybean production at one time. Decisions relative to CRP may influence annual acreage reduction programs and the magnitude of NFA acres.

- **Philosophy of commodity programs.** There is a growing interest in changing the approach to price and income policy. In particular, the concept of “decoupling” (separating income subsidies from production decisions) is regaining some popularity.

Secondly, there is discussion of integrating aspects of price support programs, crop insurance programs and disaster programs into a "risk management" program.

Policy Alternatives and Consequences

There are at least three policy alternatives for oilseeds that will likely be examined in the 1995 farm bill debate. Each of these alternatives is discussed and potential consequences examined.

Status Quo

This alternative would keep the major commodity provisions of the 1990 farm bill intact. These provisions would include the following:

- Target prices fixed for the duration of the 1995 act.
- Marketing loans for oilseeds and other program crops.
- The continuation of flex acreage provisions allowing oilseeds to be planted on base acreage of other program crops without loss of base history.
- Allowing CRP contracts to expire.

This alternative would retain several of the positive consequences for oilseeds of the 1990 farm bill by providing production flexibility, price and income

support, income stability and the ability to compete in the global economy. Producers would continue to benefit from the opportunity to respond to market signals in determining planted acreage of oilseeds. Taxpayers would benefit as the federal budget exposure for deficiency payments is reduced since production on flex acreage is not eligible for deficiency payments. For minor oilseeds, increased acreage and production might lead to the establishment of additional crush capacity and thereby generate additional economic activity in rural communities. To maintain competitiveness in world trade, increased use of credit programs might be an alternative if budget limitations or trade agreements necessitate a reduction in export subsidies.

Allowing a significant portion of the CRP acreage to come back into production as contracts expire would have numerous and diverse consequences. Initially, elimination of a large portion of CRP would reduce government expenditures and stimulate economic activity which would be positive for agribusinesses and some rural communities. Secondary impacts, however, would be mostly negative. All other conditions remaining the same, more planted acreage would generate surpluses and low prices for some crops. Given the location of the CRP acres, a large increase in oilseed plantings, particularly soybeans, on acres brought back into production would occur. Deficiency payments could be increased for some crops, and more fine tuning of annual acreage reduction programs might be required. In addition, overall conservation efforts might be hampered.

Extending the Conservation Reserve Program

The CRP encourages conservation of highly erodible land, supports grain and oilseed prices by taking land out of production and financially supports producers with less productive land. A continuation of CRP at the current level would maintain these benefits.

Some rural communities and agribusinesses have been negatively impacted by CRP due to reduced economic activity as land was taken out of production. A continuation of CRP would not likely have additional negative impacts on those communities or businesses. Taxpayers would probably be negatively impacted by the continuation of CRP. The direct cost of renting CRP acres, however, would be offset by the elimination of budget exposure in other areas. That is, allowing the majority of CRP acres back into production could lead to a higher frequency of surplus production which in turn could increase deficiency payments on crops with target prices and trigger marketing loan benefits.

Partial Decoupling

Under current provision of farm legislation, most direct payments to producers are commodity specific. Each farm has an established base acreage for individual crops and annual programs may require devoting a portion of that acreage to conserving uses in order for the producer to be eligible for target price protection. Decoupling would break the link between the producer's decision about crop

selection and the level of income protection. Target prices would be eliminated and replaced with a direct lump sum payment to individual producers.

Under this alternative, a total crop acreage base could be calculated for each farm and the annual payment calculated using the base acreage and yield history. The payment rate would likely remain fixed for the duration of the program. Producers would be free to choose the crop mix each year. If, in any year, acreage reduction is considered necessary, a percent of the base acreage would be required to be devoted to conserving use. Loan rates could be maintained and tied to a moving average of annual average prices.

This alternative would allow producers to respond to market conditions when making planting decisions. Government control over acreage of individual crops would be reduced, allowing production of oilseeds as well as other crops to adjust to market signals. To the extent that the market can direct resources more efficiently than program administrators, this alternative would lead to greater production efficiencies over time.

Replacing target prices and deficiency payments with a direct

lump sum payment would likely be budget neutral and would result in stable outlays from year to year. Producer incomes could be more volatile since payments would not be inversely related to commodity prices. The difficulty with this alternative is to fairly and accurately establish the base for payments.

The direct income payment to producers would provide a "safety net" and perhaps reduce the need for crop insurance and/or annual disaster programs.

Combinations of Alternatives

It is possible to design a policy alternative that combines aspects of the above alternatives. For example, annual acreage reduction programs in the decoupling alternative could be replaced by or combined with an extension of the CRP. Complete decoupling could be accomplished by offering producers a fixed annual payment without any acreage controls or price supporting mechanism.

Under the first alternative of maintaining the major elements of the current program, more choices could be offered under the flex acreage provisions. For example, under the current program,

producers can choose to plant minor oilseeds or other nonprogram crops, on an additional 10 percent of the base acres of a program crop (OFA). However, producers must forego the deficiency payment on those acres. Producers could be given the choice of deficiency payment for the program crop or the marketing loan for the minor oilseed crop.

Summary

Changes of commodity provisions in the 1985 and 1990 farm bills have moved the oilseed policy toward a market oriented policy. Producers have been offered a safety net for prices in the form of a marketing loan and have been given more flexibility in making production decisions. Direct acreage controls on oilseeds have been avoided. Most industry participants believe that the policy has been successful in keeping oilseed production competitive. The 1995 farm bill will likely push commodity policy further in the direction of market determination.

This publication edited by Ed Smith and Ron Knutson, Texas A&M University.

Peanut Policy

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Peanuts rank eighth among primary field crops produced in the United States with a 1990-93 average farm value of \$1.2 billion. Production is concentrated in nine states comprising three production regions: Georgia, Florida, Alabama and South Carolina (the Southeast — 60 percent); Texas, Oklahoma and New Mexico (the Southwest — 20-25 percent); and Virginia and North Carolina (the Virginia-Carolina region — 15-20 percent). The United States accounts for 8-10 percent of the world peanut production and roughly 30 percent of world trade. Approximately 20 percent of U.S. production is exported annually.

In 1991, there were 28,867 U.S. peanut producers. One half harvest less than 50 acres, two-thirds harvested less than 100 acres and only 14 percent harvest 200 acres or more according to the 1987 Census of agriculture. Eighty-five percent are classified as sole proprietorship operations. The average peanut enterprise is 92 acres per farm.

Background

The 1990 farm bill amended previous legislation to continue the program through the 1995 crop.

The current program is a result of several modifications by previous farm bills designed to meet changing supply/demand conditions and minimize government cost.

In addition to supply, control and price support provisions provided by the 1990 farm bill, peanuts are protected from imports by Section 22 of the Agricultural Adjustment Act of 1933. Loan provisions are administered by three regional grower associations, which act as marketing agents for the Commodity Credit Corporation. Handling, processing and quality are controlled under Marketing Agreement 146 and coordinated by the Peanut Administrative Committee

The major provisions of the current program are as follows:

- Supply is controlled through poundage quotas set annually by the USDA at a level determined necessary to meet U.S. edible, seed and related use needs. For 1991-95, the minimum quota is 1.35 million tons. Quota is allocated among farms based on production history. Peanuts can be grown for the U.S. edible and seed markets only by farms with a quota. If, due to weather or other uncontrollable factors, farmers are unable to produce their quota,

unproduced quota (undermarketing) may be carried forward to future years, but no more than 10 percent of the national quota can be used in a single year. The quota plus undermarketings is referred to as the "effective quota."

- Peanuts produced in excess of the farm's poundage quota or on farms without a quota are referred to as "additional." These peanuts are produced and sold primarily for export and crushing, but may also be used for the U.S. edible market through the "buyback" provision or CCC resale when quota supply is short of demand.
- There is a two-tier price support. Quota peanuts are supported at a higher rate and adjusted a maximum of 5 percent annually for any increase in the cost of production. The support price for additional is set by the Secretary of Agriculture to ensure no losses to the CCC. The 1994 average support price is \$678/ton for quota and \$132/ton for additional.
- Under new provisions set forth by the 1990 farm bill, farms with no quota but with a

history of producing additional will earn a share of any quota increase. Tenant and quota owners must also share equally any increase in quota earned due to the tenants production of additional.

- Quota may be sold or leased within the same county. Fall lease and transfer provisions also allow farms with "considered produced" underproduction to lease unused quota to another farm rather than carry undermarketings forward. Quota, however, may only be transferred to another farm in a contiguous county if owned by the same farmer.
- Quota will be reduced if not produced or "considered produced" in two of the three previous years. New provisions in the 1990 farm bill, however, allowed unproduced quota to be reallocated to farms in certain counties in Texas.
- The 1990 budget act initiated a 1 percent marketing assessment (shared equally by producer and first handler) beginning with the 1991 crop. The budget reconciliation of 1993 extended the assessment through the 1997 crop with the producer share to increase to 0.65 percent by 1997.
- CCC outlays only involve peanuts placed in loan (usually less than 10 percent of total production). Regulations on minimum resale prices and cross-compliance between the regional associations minimizes government cost exposure.

Current Situation and Forces of Change

Quality

Peanuts are sold by the farmer in-shell and referred to as "farmers' stock". Farmers' stock peanuts are visually inspected for indicators of aflatoxin and other damage, and classified as Segregation 1, 2, or 3. Segregation 1 peanuts are visually free of aflatoxin and have less than 2 percent damage. Only Seg 1 peanuts may be marketed as quota or for edible export.

Seg 1 peanuts are later shelled, chemically tested and then blanched if above tolerance in aflatoxin. Blanched peanuts are retested and allowed for edible use if below tolerance.

Segregation 3 peanuts show visual evidence of aflatoxin and crushed for oil and meal. Seg 2 peanuts have greater than 2 percent damage. Typically, less than 3-5 percent of a crop will be graded as Seg 2 and Seg 3.

CCC Loan Activities and Cost

Most peanuts are contracted or sold by the producer directly to a handler. There is no quota contract deadline, but additional must be contracted by September 15 of the year harvested or placed in CCC loan. Quota may be contracted, priced and sold at delivery or placed in CCC loan.

Quota peanuts placed in loan must be purchased by handlers at a minimum of 105 percent of the support price if purchased prior to December 31 and 107 percent thereafter. Provided the quota does not exceed expected domestic use, the resale provisions on quota minimize government cost exposure.

Additional purchased for export must be sold at a minimum resale price set annually by the USDA (\$400/ton for the 1994 crop). Additional, although not expressly produced for that purpose, once in loan are also available if needed to cushion the U.S. market from quota shortage. Such sales, however, must meet quota price minimums, as discussed previously unless purchased under "immediate buybacks" at 100 percent of the quota support price.

CCC will typically realize losses on quota peanuts placed in loan unless quota supplies are short or there are substantial profits made from the resale of additional. CCC losses in 1991-92 resulted from the quota being set higher than market demand, thus reducing buyer interest and forcing quota into CCC. Net outlays for the program averaged \$17 million annually for fiscal years 1986-93.

Cost of Production

A 1993 U.S. General Accounting Office (GAO) study concluded that support prices were high relative to production cost. USDA production cost survey results show the U.S. average total cost of production was \$611 per ton in 1991 and averaged \$573 per ton for 1987-91. These cost are for both quota and additional, all peanut types, both irrigated and

non-irrigated production, and exclude income loss or non-income years in rotational crops.

These cost include the capitalized value of land and quota. The value of quota and lease rate for quota are largely determined by the level of price support. Lower price support would lower farmland values. Excluding quota and management, the U.S. average cost of production was \$507 per ton in 1991.

U.S. Edible Peanut Consumption

Peanuts are consumed in candy, snacks, peanut butter and in-shell. Peanut butter accounts for about 50 percent of total use. Total use trended upward during the 1980s but use was down 8 percent during the 1992-93 marketing year compared with 1989-90. Use in peanut butter declined 11 percent. During the first 9 months of the 1993-94 marketing year, total use was down 3 percent compared to 1992-93 with use in peanut butter down 10 percent.

Imports of Peanut Paste

Section 22 does not apply to peanut butter/paste. Imports of peanut butter/paste, originating mostly from Canada and Argentina, have increased 7-fold since 1989. Peanut paste is made primarily from China and Argentina peanuts. During calendar year 1993, imports totaled 18,149 metric tons-- equivalent to 38,000 farmer's stock tons of U.S. quota. Twenty seven percent of the reduction in the use of U.S. peanuts in peanut butter during the 1992-93 crop year may be attributed to displacement by imports.

NAFTA and GATT

These trade agreements will affect various sectors of the U.S. peanut industry. Section 22 protection was eliminated and replaced with minimum import access levels and tariffs for edible peanuts and peanut butter. Under the Uruguay Round GATT Agreement (URA), the minimum access for edible peanuts is 33,770 metric tons (mt) the first year, increasing to 56,283 mt the sixth year. Under NAFTA, Mexico is given duty-free access of 3,377 mt, 10 percent of the URA minimum access level. For peanut butter, the first year minimum access is 19,150 mt increasing to 20,000 mt in the sixth year. The combined edible peanut butter minimum access levels are approximately 96,000 tons in-shell equivalent the first year, growing to 135,000 tons the sixth year.

An ad valorem tariff will be levied on amounts above the minimum access levels for shelled edible peanuts, peanut products and in-shell imports. Tariffication may not immediately affect the price support program but could over time. The URA is only for six years after which there could be pressure to further reduce tariffs and move towards free trade. In contrast, NAFTA does eliminate all tariffs over a 15-year period. While Mexico is presently not a significant peanut-producing country, economics may change this. Furthermore, the "docking" provision could allow other Latin American countries to join NAFTA.

Effect of the Peanut Program on Consumers

The 1993 GAO study concluded that the peanut program

added \$314-\$513 million annually to consumer (first buyer) cost. The study still leaves in question the effects of the program at the retail level.

The USDA estimates that the use of peanuts for domestic food in marketing year 1994-95 will be 1.019 million tons in-shell equivalent. If support price were reduced from the 1994 level of \$678 per ton to \$500 per ton, the savings would be \$180 million dollars or about 70 cents per person if all savings were passed on to the consumer. The price reduction in an 18 ounce jar of peanut butter would be 15 cents. Because the peanut manufacturing industry is oligopolistic (only a few firms), it is unlikely that all savings would be passed on.

Issues

Due, in part, to the process of change previously discussed, the industry at the present time faces several program-related major issues, including the following:

■ **Declining demand.** Peanut butter consumption has declined and the future trend is unknown. The 1994 quota is 1.35 million tons, a 9.8 percent reduction from 1993 and the minimum allowed, but still above the USDA estimated quota need of 1.333 million tons.

■ **Effective quota leads to oversupply.** The formula for determining the quota does not consider undermarketings and carryover. Effective quota in recent years has been large relative to demand.

■ **CCC program cost.** The program represents a very small portion of farm program expenditures but government cost in the program has been increasing in recent years.

■ **GATT and NAFTA.** Current minimum quota, price support levels and price adjustment mechanisms do not consider the changing economic environment caused by replacing Section 22 with import market access and tariffication.

■ **Aflatoxin testing.** Peanuts graded Seg 1 visually may, after chemical testing, contain above tolerance levels of aflatoxin. Conversely, Seg 3 peanuts may contain acceptable levels.

■ **Yields and technology.** Adoption of newer varieties and approval of new chemicals could result in higher yields in the future and reduce the cost per ton. Loss of chemicals due to environmental or food safety regulations could impact the three peanut-producing regions differently.

Policy Alternatives and Consequences

Status Quo

Maintaining present price support levels and adjustment mechanisms and the minimum quota at 1.35 million tons will likely result in continuing government costs. Without adjustments in the minimum quota, the uncertain direction of demand for peanut products and the minimum

access of peanuts and peanut butter provided by GATT will likely result in excess quota peanuts. These would be placed in CCC and crushed, resulting in increased government outlays.

If price supports increase as a result of cost of production adjustments, the difference between the support price and crushing value would likely increase, meaning additional government costs.

Fine Tuning Existing Programs

Several modifications of the present peanut program could be considered, including the following:

■ **Eliminate the minimum quota limit and provide flexibility in factors used to estimate domestic edible use.**

The minimum quota provision could be eliminated and replaced with a maximum that quota may be reduced in any one year; for example, no more than 5 percent. Flexibility could be included to allow inventory, undermarketings and imports to be considered when establishing the quota level. Modifications of this type could reduce the amount of quota available to producers and/or could be utilized to manage government cost.

■ **Limit the number of years that undermarketings can be carried forward or eliminate the provision.**

A time limit could be established on the number of years that undermarketings may be carried over, such as a

maximum of two or three years. Quota produced could be counted against a producer's basic quota first and then their undermarketings. If not produced, undermarketings would be lost and the quota adjusted accordingly. These provisions would decrease the tendency for excess quota. Government costs would be reduced. This provision may alter lease arrangements and regulations on quota, i.e., should the tenant pay for quota not produced?

■ **Eliminate undermarketings if a producer receives crop insurance payments.**

Currently, producers can receive crop insurance payments and still carry that lost production forward as undermarketings. A provision could be developed that poundage receiving any type of payment for lost production be subtracted from the farm's calculation of undermarketing. The result could reduce effective quota and government costs.

■ **Include producer cross compliance in calculating area pool profit and losses.**

A producer cross compliance would discourage placing quota peanuts in CCC loan. The profit from an individual producer's additional in the loan would be first used to offset any quota losses of that producer. This provision would be used before the current pool and area cross compliance provisions are applied. By discouraging

placing quota peanuts in the CCC loan, the potential for government loss is reduced.

■ **Change the method for determining price support level.**

Currently, support prices can only be adjusted upward for changes in production costs based on the previous two crop years. A moving average would remove any sudden one year input price spikes. Limits on the changes in either direction could be limited to 5 percent annually. Longer term, downward adjustments in the quota support price may also be necessary to meet the competitive level of import prices.

■ **Adopt a no-net cost provision.**

With program modifications that would tend to limit government losses, farmers could initiate a no-net cost provision. A producer assessment equal to 2-3 percent of the market value could be initiated for each grower association and used to pay for any CCC losses within the association.

■ **Provide quality incentives and disincentives.**

To encourage production of high quality, aflatoxin-free peanuts, adjustments could be made in the support price structure. Producers could receive a higher price for peanuts meeting specified quality standards or receive a discount for poorer quality. The current mechanism

adjusts price primarily for kernel size and condition, moisture and foreign material. Chemical testing for aflatoxin has been tried at a limited number of peanut buying points. If chemical testing were used rather than visual inspection, price support premiums and discounts could be applied to various levels of aflatoxin.

■ **Adjust provisions for additional peanuts.**

For those who want to produce additional peanuts, several modifications may improve the conditions for marketing them. Allowing the CCC to sell additional for edible export at world prices instead of the minimum resale price would increase market orientation. A second possible modification would be not to include seed peanuts in the quota but to allow seed to be produced from additional. This would reduce grower income due to the quota decrease but also lower production cost. Another modification would allow additional to be purchased for government food programs. This would reduce quota demand but also reduce government cost for food programs. If these changes were made, the current "act of God" clause could be removed from contracts and growers required to deliver additional contracted. This is similar to contracts on other crops and would improve market information for buyers.

■ **Allow quotas to be rented or sold across county lines within area associations.**

This would provide an opportunity for quota to be produced by the more efficient farmers and/or in higher yielding locations. It would provide a means for quota owners who no longer farm or are inefficient to sell their quota at a possible higher price and provide the opportunity for farmers who want to produce quota peanuts to obtain it. Moving quota could, however, mean more concentration of peanut production by larger farm operations. It could also impact the infrastructure of agribusiness suppliers and peanut buying locations and sheller operations by reducing the quantity of peanuts produced and available in their area of operations.

No Program

In absence of a price support and quota program, farm prices for peanuts, although difficult to estimate, would decrease. Quota would have no value. Some geographical shifts would occur as production adjusts to it's highest comparative advantage. Lower prices resulting in reduced income and land values, as well as locational shifts, would cause financial distress among farmers, related agribusiness and the rural infrastructure in some locations. Quota rental income would be eliminated.

Without a government program that establishes the minimum price for quota peanuts, peanut farmers would face a different marketing environment

and price determined under different market conditions. Forward contracting would become essential to control risk. Prices may become quite variable. Peanut farmers may be interested in forming marketing cooperatives. Futures markets may become a viable marketing tool. More vertical integration could occur with direct grower/processor pricing or contracting.

Although farmer prices would decrease, the result would not likely be significant changes in the retail price level of peanut products.

Conclusion

Peanuts are an economically important crop in many southern rural areas. Changes in the program could have considerable impact on producers, related agribusiness and rural areas dependent on this economic activity. Geographical shifts could also occur. Farm income and land values would decline causing

economic hardship to growers and rural communities.

Eliminating the program would result in lower farmer prices but cost savings would not likely be fully realized by retail consumers. The present program, however, has some components that if modified may improve production efficiency, market orientation and reduce government cost exposure.

The major factors impacting the industry at present include GATT and NAFTA market access, imports of peanut butter/paste and uncertain U.S. consumer demand. These and other forces will likely need to be considered in any program modification.

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Tobacco Policy

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Background

There are two major types of tobacco produced in the United States — flue-cured and burley. Flue-cured tobacco is produced in North Carolina, Virginia, South Carolina, Georgia and Florida, with North Carolina being the largest producer. Burley tobacco is produced in Kentucky, Tennessee, Virginia, North Carolina, Ohio, Indiana, West Virginia and Missouri, with Kentucky being the largest producer. In addition to flue-cured and burley tobacco, several other types of tobacco are produced in the United States. These include dark air-cured, dark fire-cured, Maryland and cigar filler, binder and wrapper types. Tobacco is an important income crop in the southeastern United States with 1993 farm sales of about \$2.8 billion. According to the USDA, there are approximately 380,000 quota holders and over 100,000 growers in 21 states. This paper concentrates on the flue-cured and burley tobacco programs because production of these types comprise around 95 percent of total U.S. tobacco production.

The U.S. tobacco program originated under the Agricultural Adjustment Act of 1933, with the 1938 bill authorizing marketing

quotas and the 1949 act authorizing price supports. While the program has been amended many times over the years, the basic components of the tobacco program remain. Specifically, U.S. tobacco growers are guaranteed minimum prices through price supports in exchange for limiting production via allotments and quotas. The program effectively raises the farm-level price of tobacco which tends to modestly increase the price of tobacco products to consumers and thus slightly lower the consumption of tobacco products. The costs of operating the U.S. tobacco program are paid by producers and purchasers through marketing assessments. Relatively small administrative costs are borne by taxpayers.

The tobacco program operates under continuing legislation and is normally not considered part of the periodic farm bill. Since the legislative guidelines are on-going and rather precise, program adjustments usually require new legislative activity, and a referendum is held every three years for flue-cured and burley to determine whether producers support the continuation of the programs. Past votes have overwhelmingly supported the programs.

Under the current tobacco program national marketing quotas are set each year. These quotas

determine the maximum amount of burley and flue-cured tobacco that producers can sell that year. Restricting the supply of U.S. tobacco via national quotas has been successful in garnering a higher price for U.S. tobacco on both the U.S. and world markets. Support prices are set for various grades of tobacco. If a sale lot of tobacco does not bring more than the support price, it is acquired at the support price by grower-owned and grower/buyer financed cooperatives. In the face of expanding world production and declining U.S. market share, the supply restrictions over the past 50 years have gradually become less effective in extracting prices for U.S. tobacco that are above world prices.

The national quotas are allocated among individual allotment holders. This allotment grants each holder the right to market a given amount of tobacco. Allotment holders who are not active producers of tobacco may lease (rent) or sell their quota to active producers within the same county. Cross-county leasing of quota is allowed only under specified disaster conditions and in Tennessee. The current lease rate for quota in some counties averages 30 to 35 percent of the market price. Thus, the return to quota is a significant source of income for many farmers and non-farmers in tobacco producing areas. Con-

versely, the cost of leasing is also a significant cash expense for producers who lease-in quota.

Since 1980, the U.S. tobacco program has been revised several times in response to economic, political and international pressures. A major change occurred with the Tobacco Improvement Act of 1985. Price supports for tobacco were reduced by this legislation and domestic tobacco manufacturers were required to purchase existing loan stocks. In addition, the price support and quota formulas were revised in an effort to generate more market-oriented price and production levels (see below for more details).

Expanding international markets during the late 1980s resulted in rapidly rising marketing quotas. However, the demand for U.S. tobacco was reduced sharply in 1992 and 1993 in response to a world excess supply of less expensive foreign tobacco and to a changing manufacturing blending practices to accommodate increasing domestic sales of generic cigarettes. U.S. cigarette manufacturers responded by importing record levels of tobacco into the United States.

Faced with declining domestic sales and marketing quotas, the U.S. tobacco program was modified in 1993 to effectively limit the volume of imported tobacco. Under this domestic content legislation, individual domestic cigarette manufacturers would be subject to monetary penalties and loan stock purchase requirements if they use more than 25 percent foreign tobacco in U.S. cigarettes during a given calendar year. However, an international panel has recently ruled this legislation violates GATT. As a result, Congressional members from tobacco producing states are presently attempting to provide

import protection while remaining GATT-legal.

Current Situation and Forces of Change

Tobacco production has escalated worldwide since 1991, resulting in a significant surplus of tobacco in international markets and depressed world prices. However, the U.S. price support structure has generally prevented U.S. tobacco prices from falling during this period of excess world supplies. In recent years, U.S. tobacco prices have averaged two to three times the average price of foreign tobacco. U.S. tobacco still demands a quality price premium in the world market, but this premium is reportedly declining in response to improving foreign tobacco quality and abundant world supplies. World tobacco production is expected to decline in 1994, but it will likely take several years to work-off record world stock levels.

Worldwide tobacco consumption continues to increase to record levels annually. But growth is generally not occurring in traditional U.S. markets. Besides being confronted with stagnant/declining consumption, the U.S. tobacco producers are also faced with a greater substitution of less expensive foreign leaf for U.S. tobacco in these markets.

Demand for U.S. tobacco in the domestic market has also been adversely affected by increases in the number of smoking restrictions/bans, wholesale cigarette

prices and taxes. As a result, demand for U.S. tobacco has declined considerably from the record levels established during the early 1990s causing loan stocks to approach critical levels.

U.S. tobacco growers are hopeful that a modified domestic content law will eventually boost U.S. tobacco demand. This legislation will undoubtedly reduce U.S. tobacco imports, but at the probable expense of also reducing U.S. leaf and cigarette exports. Thus, the long-term effects of this legislation on the U.S. tobacco industry are uncertain.

In addition to increasing international competition, the U.S. tobacco industry is also being threatened in the domestic market by proposals for significantly higher excise taxes on tobacco products as well as heightened government regulation on tobacco products. In response to these conditions, the marketing quota formulas for flue-cured and burley tobacco called for an over 40 percent reduction in 1994 farm quotas. However, provisions under the domestic content legislation limited the 1994 downward adjustment in flue-cured and burley quotas to 10 percent. Unless market conditions improve immensely, larger 1995 quota reductions may result.

In summary, the U.S. tobacco industry faces much uncertainty as it enters the mid-1990s. Increasing international competition, proposed higher excise taxes, uncertainty regarding the import restrictions and additional smoking restrictions/bans and other government regulations are major issues confronting the industry. Current market forces indicate that U.S. tobacco quotas/production and world market share will likely continue to decline unless the tobacco program is modified to

improve the price competitiveness of U.S. tobacco.

Issues

U.S. policymakers face the choice of either substantially lowering quotas under the current program, pursuing legislation to lower price supports for tobacco or a combination of adjusting both quota and price supports downward. How long policymakers can wait before making such difficult choices will depend to some extent on how effective import restrictions are at increasing domestic tobacco use without causing a decrease in unmanufactured and manufactured exports. Non-producing quota owners and growers who own most of their quota may favor maintaining current price levels with lower production levels (implying higher lease rates), while large scale growers who rent a large portion of their quota may favor lower price supports and higher production levels (implying lower lease rates).

■ **Price Support.** Should the price support formula be revised to directly account for changes in world tobacco prices? Annual changes in the average price support for flue-cured and burley tobacco are determined by changes in both a moving average of market prices and a cost of production index. The moving average of market prices reflects past supply/demand conditions that may not accurately reflect current market conditions. In years of excess world supplies and falling export prices, U.S. price supports tend to stabilize U.S. market prices, which coupled with increasing production costs tends

to increase future price supports. As a result, the price support formula is not very responsive to lower export demand.

■ **Quota.** Should policymakers continue to intervene in minimizing quota reductions or should they allow the formula to actually set the quota? The flue-cured and burley marketing quotas are determined annually by a formula that takes into account the U.S. cigarette manufacturers' domestic purchase intentions for the upcoming marketing season, a previous three-year average of leaf exports and an adjustment for the reserve-stock level. This three-part total yields the basic quota with the effective quota being adjusted by the previous year's under/over marketings. Manufacturers are required to purchase 90 percent of their stated intentions to avoid penalties (requirements may be decreased proportionally if marketings are less than the effective quota). In recent years, the quota formula has called for large quota reductions, but legislative actions have prevented large cuts.

■ **Leasing.** Should the leasing program be modified? Increasing lease rates in response to declining quotas are causing some farm groups to again evaluate policy options with respect to leasing. Currently (except under disaster conditions or in Tennessee) burley tobacco producers may lease quota only within county boundaries. Lease and transfer of flue-cured tobacco quotas is not allowed. Flue-cured producers can only rent quota by cash rent on the farm of the quota owner or cash rent by farm combinations through USDA-ASCS.

■ **Excise Taxes.** Should tobacco farmers receive a portion of tobacco excise tax revenues? Currently, excise taxes collected on the sale of tobacco products exceed \$13 billion — more than four times the entire farm value of U.S. tobacco production. Proposed higher excise taxes on tobacco products would have a significant adverse effect on many tobacco producers and rural communities. Farm groups and policymakers are debating whether the federal government should provide economic assistance to tobacco farmers and/or their rural communities that are adversely affected by higher excise taxes designed to reduce tobacco consumption.

■ **Program Cost.** How will policy changes affect the cost of the program? Currently the tobacco program requires producers and purchasers to share equally in the government's cost of operating the program. The cost of the assessment is projected to significantly increase without program modifications. Since the U.S. supply of tobacco is essentially fixed at marketing, the buyer assessment decreases the price the purchaser is willing to pay for tobacco. Thus, the market price to the grower is reduced by the sum of the buyer and producer assessments. If policymakers try to preserve both price support and quota levels, stocks held by the producer cooperatives will increase (which in turn increases assessments, thereby decreasing the effective price received by the grower).

■ **Program Change Risk.** If opened, will the program be lost? Another key issue that policymakers must consider in evaluating tobacco policy alterna-

tives is the current political environment for any type of tobacco legislation in Washington, D.C. Exposing the tobacco program in today's Congress brings about the potential for completely losing the program. Thus, the congressional delegation from tobacco-producing states will likely be very hesitant to make many (if any) changes in the program. Given that this type of political environment will likely continue in the future, policymakers may consider adding more administrative flexibility in the tobacco program to avoid future legislative action. For example, the Secretary of Agriculture could be given the authority to adjust the average price support or quota administratively when loan stocks exceed a specified level.

Policy Options and Consequences

Price Support

Policy options regarding price support include the following alternatives:

(1) Leaving the price support formula as is and continuing with a similar price support structure for individual grades will continue to generate U.S. tobacco prices similar to prices received in recent years. However, U.S. tobacco producers will likely face significantly lower quotas and higher lease prices, loan stocks and marketing assessments under this policy option. Restructuring price supports for individual grades

(without changing the average price support) to more accurately reflect current buyer preferences could modestly improve demand for U.S. tobacco.

(2) Lowering the average price support has been an option used in the past to improve the price competitiveness of U.S. leaf. Research by Johnson and Norton in 1983 indicates that during the previous 40 to 50 years, a 1 percent drop in U.S. tobacco prices (adjusted for inflation) led to a 1 percent increase in domestic purchases and a 2 to 2.5 percent increase in unmanufactured exports. Given the decline in the U.S. share of the world market and the improved quality of tobacco from competing countries, a given reduction in U.S. tobacco prices would, over time, likely lead to larger increases in sales than in previous decades. This policy option would tend to increase the concentration of quota as some high-cost producers would likely sell or lease their quota. Input suppliers in high-cost of production counties would likely suffer economic losses, and land values in tobacco producing areas could fall.

(3) Include a more direct measure of world prices in the price support formula. World prices are only reflected in the formula through their effect on past U.S. tobacco prices. Direct inclusion of an index of prices from competing exporters (e.g., Brazil, Zimbabwe, Malawi) would make price more responsive to changing world demand and supply. This approach would increase the variability in prices, but it also would tend to reduce the variability in quotas.

(4) Eliminate price supports, but keep the quota system. Many of the same consequences outlined above for lowering price supports would likely evolve (e.g., increased exports, lower imports, larger quotas, more concentration of quota, reduction in agribusiness sales in certain areas and lower land values) — but perhaps by a greater magnitude than simply reducing price supports. Price and income variability would also likely increase.

(5) Establish a two-tiered price support system with a different price support structure for quantities destined for domestic markets relative to the export market. In order to be successful, a two-price plan must effectively segment the domestic and export markets. Effective market segmentation would require control over movement of tobacco between the domestic and export markets, as well as control over imports of tobacco. The peanut program operates such a program, and the necessary regulation and control is accomplished by banning almost all imports and requiring exports to be contracted ahead of the marketing season. Gaining this level of control for tobacco appears unlikely given the movement toward free trade between the U.S. and other countries.

Quota

The structure of the quota formula is generally viewed positively by most industry officials and farm groups. One major concern of the present formula is that it does cause a considerable amount of quota instability from one year to the next. In order to fine-tune the present formula to provide for more quota stability,

some farm groups are currently debating the following options:

(1) Requiring manufacturers to purchase a greater percentage of their stated intentions may provide the industry with a better indication of current demand conditions for U.S. tobacco in the domestic market. However, it also may lead to manufacturers submitting lower intention levels to hedge themselves against unexpected demand changes.

(2) Requiring a carry-forward quota has been cited by some farm groups within the burley belt as one of the main factors contributing to large increases in burley loan stocks in recent years. While attempting to minimize quota instability and loan-stock intake, reducing or eliminating the volume of carry-forward quota could have significant adverse effects on farmers/communities who lose carry-forward quota.

(3) The current combination of relatively large loan stocks and relatively low reserve-supply levels is resulting in a large, negative reserve-stock adjustment within the quota formulas. Larger reserve-stock levels used in calculating the quota would temporarily increase the volume of quota U.S. tobacco producers could market. However, larger loan-stock inventories evolving from this policy option would result in larger no-net-cost assessments for U.S. producers and purchasers.

(4) Maintaining the quota formula could be more responsive to these changing conditions if it included current or projected exports. Currently export demand is accounted in the quota formula by a previous three-year average of unmanufactured leaf exports. In

recent years, U.S. leaf exports have been very volatile in response to rapidly changing world market conditions.

(5) Allowing separate quota formulas for the domestic and export markets. This alternative could be coupled with a two-tiered price support structure outlined previously.

Leasing

Some leasing policy options would include the following:

(1) Maintaining the current lease program will likely result in lease prices remaining relatively high compared to market prices. Holding all other factors constant, projected quota reductions would also reduce the supply of quota available in each county market, thus increasing lease prices. With higher lease prices and lower quotas, producers leasing tobacco quota will be adversely affected via higher production costs. The net income effect of higher lease prices and reduced quotas on farmers leasing-out quota is uncertain as lease income gains from higher lease prices may or may not offset the negative income effect of lower quotas.

(2) Allowing cross-county leasing of quota is a fiercely debated policy option, especially when lease prices are increasing and growers perceive large lease-price differentials across counties. In recent years, the burley lease-price differential between high- and low-lease-price counties (within a given state) has diminished greatly, thus reducing the potential benefits of cross-county leasing (within a given state) to producers currently leasing-in quota in high-lease-price counties.

The county lease-price differential has remained fairly constant in flue-cured growing areas. Cross-county leasing within state boundaries would tend to lower lease price differences among counties in a given state. While reducing the cost of production for some growers, it is not clear that this option would have a significant effect on the overall average cost of production.

(3) Opening leasing markets belt-wide would significantly reduce lease prices in some traditionally high-lease-price counties. Quotas would likely move to the lower production cost areas. For burley, this move would be to the central and Bluegrass regions of Kentucky. For flue-cured, quota would move toward eastern North Carolina. In the short-run, burley belt-wide cross-county leasing would likely increase production relative to the quota, and thus further increasing the current excess supply of U.S. burley tobacco. Improved national yields would reduce the overall cost of production, thus limiting future increases in price supports. Quota would concentrate as the number of growers declined, further reducing the industry's political base.

Cross-county leasing would tend to increase agribusiness sales and demand for services in high-lease-price-counties to which quota is being transferred, while reducing the demand for goods and services in low-lease-price counties. Alternatively, lease income in high-lease-price counties would fall while improving in counties that are currently experiencing low-lease prices.

(4) Eliminating the lease-and-transfer program for burley tobacco as flue-cured did in 1987 would

provide both benefits and added cost to producers relative to quota owners. In order to prevent the forfeiture of tobacco quota, those quota owners opting to not produce their quota would be faced with the decision of selling their quota, developing a crop-share arrangement with a producer or renting their farm (instead of their quota) to an active producer. Initially this policy option would tend to reduce quota sale-prices, improve the producer share in a crop-share arrangement or reduce the rent of tobacco farms. Following quota redistribution, producer benefits made available by eliminating leasing would tend to diminish in the long run as the economic rent of tobacco quota would be bid into the rental value of the land. In addition, eliminating the lease and transfer of quota would greatly increase transaction cost of obtaining quota.

Excise Taxes

A proposed \$0.75 per pack increase in the federal excise tax on cigarettes is projected to cause U.S. cigarette consumption to fall around 15 percent and U.S. tobacco demand to decline by 7 to 9 percent. Additional consumption declines would likely evolve in response to states increasing tobacco taxes to sustain state tobacco-tax revenues amidst falling cigarette sales.

Some involved in the policy process have suggested that part of the revenue from the proposed cigarette tax increase be used to purchase quota from owners. Under such a plan, quota owners would be compensated for the loss in quota income. Although there are numerous options, one dis-

cussed alternative is that the quota buy-out would permanently retire quota from willing sellers. At issue is what (if any) restrictions would an individual seller of quota in a "buy-out scheme" have on the money he/she received from the government. Should the individual be required to reinvest the proceeds in agriculture or in the local community? Those who choose not to sell quota would still produce tobacco under the tobacco program which would tend to minimize their quota reductions following the tax increase. As a result, the concentration of quota would be increased toward the areas with the lowest cost of production.

This policy action could be detrimental to groups such as tenants, growers who lease quota, tax bases/rural development in areas that lose production and supporting businesses such as banks, tobacco warehouses and input suppliers. With this policy, land values could also be significantly lower. Besides a quota buy-out, other policy options being considered include annual payments to quota owners for quota reductions or a reinvestment fund for tobacco-producing regions to finance the infrastructure and training of tobacco growers to produce alternative crops.

Eliminating the Tobacco Program

An extreme policy option available to policymakers is to completely eliminate the price support/production control program. Grise indicates that under this policy alternative, "Some U.S. growers would go out of business. U.S. production would

likely expand. Land prices (except perhaps in very low cost of production areas) would decline because quota values would be lost. Leaf costs would decline and cigarette and other tobacco product prices would likely be slightly lower. Imports would fall and exports would rise. Consumer prices might decrease and consumption of tobacco products would increase."

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Sugar and Honey Policy

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Background

The United States imports sugar to supplement domestic production from an industry historically protected through government programs. The U.S. Sugar Act starting in 1934 supported and regulated the industry until it was allowed to expire in 1974 when world sugar prices were high. Regulations and support were reinstated for 1977-79 and again in the 1981 farm bill. The current sugar program includes a combination of nonrecourse loans, tariff-rate quota and, when necessary, marketing control to support the domestic market. A loan rate of 18 cents a pound for raw cane sugar was provided in the 1985 and 1990 farm bills. The 1993 budget reconciliation process extended the sugar price support program through the 1997 crop.

Since sugar production is concentrated in certain geographic regions near processing plants, the sugar industry impacts specific rural communities not only for producers' incomes but also for the employment and economic activity of the processing industry. The sugar industry provides 361,000 jobs in 42 states and adds \$18.5 billion annually to the economy.

Current Situation

U.S. sugarbeet and sugar cane producers provide about 85 percent of domestic sugar needs. Just over half of the U.S. production is from sugarbeets. Before the early 1980s when most soft drink companies replaced sugar with high fructose corn syrup (HFCS), imports accounted for as much as 50 percent of domestic consumption. U.S. beet and cane sugar production and net imports since 1979 are shown in Figure 1.

U.S. sugar production is concentrated in a few areas. Half the sugar cane is produced in southeastern Florida and another 25 percent in southern Louisiana. A declining portion is produced in Hawaii (20 percent) and a small amount in southern Texas (4 percent). Sugar cane tends to be produced on large, specialized farms. Most Florida and Hawaii cane is grown directly by the milling companies rather than through contracts with independent farmers.

Non-irrigated sugarbeets are produced in the Red River Valley of eastern North Dakota and western Minnesota (33 percent) and Michigan-Ohio (12 percent).

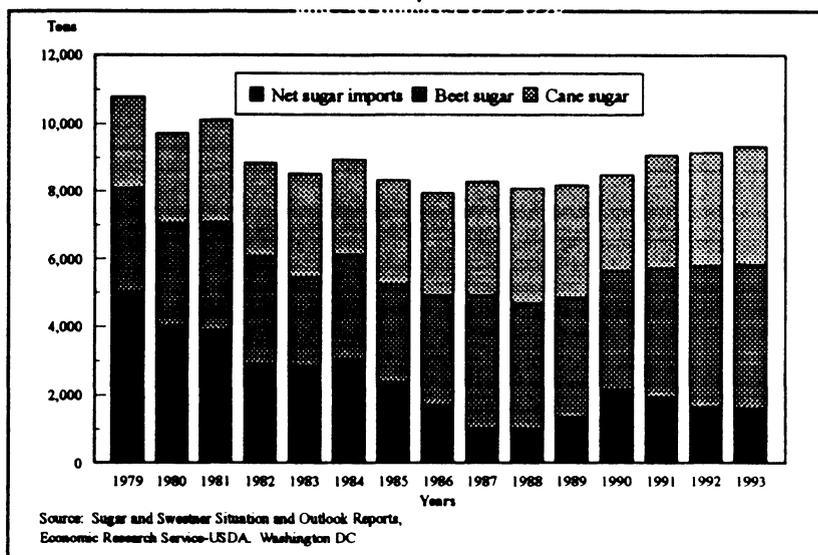


Figure 1. United States Raw Beet and Cane Sugar Production and Net Imports, 1979-1993.

Irrigated production in the western Great Plains (22 percent), the Northwest (19 percent) and California (14 percent) account for the remaining production. Sugarbeets are generally produced on diversified, moderate-scale farms.

Sugar is a part of a broader caloric sweetener industry that includes corn sweetener, honey and edible syrups. Only 45 percent of caloric sweetener consumption is from sugar; 54 percent is from corn sweetener; and 1 percent is from honey and edible syrups. Corn sweetener producers have a direct interest in continuing sugar price supports because their prices are positively impacted by sugar prices. Honey is a higher priced, special-use product and has had price and income support under the recently terminated honey program.

Price support for raw cane sugar has been constant at 18 cents per pound since 1985. The refined beet sugar loan rate, which was 23.6 cents in 1993, has increased slightly based on an increasing ratio of the returns to beet growers to the returns to cane growers. Price support is achieved through the Commodity Credit Corporation (CCC) nonrecourse loans available to sugar processors. Current legislation specifies that the loan program be operated at no cost to the federal government. To ensure no forfeitures of sugar to the CCC, sugar imports are restricted through a tariff-rate quota (TRQ) to comply with the Uruguay Round of GATT. The quota is set to ensure that domestic prices remain above the loan price plus interest. The TRQ replaced an absolute quota which regulated the entry of sugar into the United States from 1982 to 1990.

The TRQ is a two-tiered duty. The lower tier of imports is subject to a nominal or zero duty for quantities that balance domestic supply with projected sugar use at the supported price. This amount is allocated on a country-by-country basis. The allocation of import quotas among countries is based on historical imports, but quotas have occasionally been changed to achieve foreign policy objectives. Sugar imported above the low duty quantities is subject to a second-tier duty of 16 cents a pound, raw basis. The high tariff duty will be reduced under the Uruguay Round agreement to 14.45 cents a pound by the end of the century. This lowered duty will still price U.S. sugar imports above the 18 cents a pound raw sugar loan rate.

The 1990 farm bill established provisions for marketing allotments to processors of domestic sugar whenever imports were estimated to fall below 1.25 million short tons. On June 30, 1993, the USDA announced sugar marketing allotments for fiscal 1993. The allotments limited domestic processor sugar marketings based on their sales history. Marketing allotments have not been needed for fiscal year 1994, but sugar imports are so close to the 1.25 million ton minimum that marketing allotments remain a probability in future years.

The North American Free Trade Agreement (NAFTA) gives Mexico duty-free access to the U.S. sugar market beyond the present quota if Mexico has "net surplus production." A side agreement defines net surplus production such that Mexican production must exceed consumption of both sugar and HFCS for Mexico to be considered a net surplus producer.

The chances of Mexico's becoming a net surplus producer using this definition is unlikely.

Domestic sugar prices are supported substantially above world market trading levels. For example, world raw sugar prices in fiscal 1991 and 1992 averaged 9.24 cents per pound (f.o.b. Caribbean port), while U.S. raw sugar prices averaged 21.64 cents per pound (duty-free paid, New York). The legitimacy of the world price is critical to evaluating sugar policy. Sugar producers argue that the world price is a dumping price, which does not represent prices that would prevail without producing countries' price-distorting policies. Nearly all sugar-producing countries have market intervention policies to stabilize their domestic sugar prices and/or subsidize their domestic sugar industry.

What the world price would be without these price-distorting government policies is not known. However, a competitive market price would tend to equal opportunity cost of production. A recent study indicated a world free market equilibrium price between 14 and 17 cents per pound of raw cane sugar. This is somewhat higher than the world market price but lower than the U.S. supported price.

Issues

Sugar policy affects producers, processors and rural communities in sugar-producing areas and the economies of less developed countries which export sugar. Current policies also impact consumers and taxpayers.

Effects of present sugar policy include the following: (1) higher but more stable sugar prices, (2) reduced U.S. sugar consumption, (3) increased corn sweetener consumption and (4) a lower "world trading" price than would prevail under a more market-oriented sugar policy. Current policies also result in the use of more U.S. sugar and corn production and processing resources than would be needed if more imported sugar were allowed into the U.S. market. Some important issues include the following:

- What should be the level of sugar industry support, if any, and how should support be implemented?
- Should producers receive direct payments if price supports are reduced? If direct payments are initiated, how should they be paid to integrated producer-processors in light of the current \$50,000 payment limitation for deficiency payments on other crops?
- Should the government provide adjustment assistance to agribusiness firms and rural communities negatively impacted by changes in sugar policies?
- How should market allocations be adjusted if Mexico increases sugar exports to the United States under NAFTA?
- Should further economic assistance be provided to less developed countries being closed out of the U.S. sugar market? If Communism falls in Cuba, should this country be granted a sugar quota?

- How would the sugar industry be supported if the United States becomes self-sufficient in sugar?
- Should domestic market allotments be used to control supply?

Policy Alternatives and Consequences

Status Quo

Continuation of the present price support involves no federal budget exposure. However, domestic sugar marketings may have to be limited in some years to maintain the current price. Stable sugar prices under the present policy mainly benefit the production side of the industry as prices are stabilized above the world trading price. Producer net income per acre is often higher than from alternative crops, particularly for sugarbeets. This tends to bid up land rental rates and land values and/or processor share owner prices in production areas where sugar production is most profitable.

Rural economies in sugar production areas, which include sugar processors, farm input industries, marketing services and main street businesses, benefit from a stable, price-supported sugar industry. Supported sugar prices have enabled corn sweeteners to take the soft drink market away from sugar. Corn producers and processors of corn sweeteners have benefited from an expanded market with approximately 600

million bushels of corn used annually in the corn sweetener industry. Increased corn prices from sweetener demands have also reduced federal expenditures on corn deficiency payments.

Consumers in sugar-importing countries outside the U.S. benefit from lower world prices that result from increased U.S. production and reduced imports. Producers in exporting countries with a U.S. sugar quota receive double or more the world trading price for quota sugar. However, quotas have been sharply reduced since 1981, so gross earnings from sugar sales to the United States have declined. Those countries not holding U.S. quotas are particularly adversely affected.

U.S. consumers pay higher prices for sugar and sugar-containing products with a support program than without. How much higher depends on what increase in world trading prices would occur without the U.S. sugar price support program. About three-fourths of U.S. sugar consumption is in sugar-containing products. Considerable debate exists over price responsiveness of sugar-containing products to changes in sugar prices. Some sugar users and consumers may prefer the more stable sugar and HFCS prices from the present policy over lower but fluctuating world market prices.

U.S. producers of sugar-containing products that compete with imports currently lose part of their market due to higher prices of domestic sugar. The domestic cane sugar refining industry, which also processes imported raw cane sugar, has been downsized about 20 percent due to declining imports.

Substitute income support for price support

An alternative to the current sugar policy is to increase import quotas and reduce price supports to a level closer to projected world trading prices. Producers could be compensated for the price support reduction through deficiency payments based on target prices as used in other program crops. The program either could be structured with a low price support floor or with a marketing loan and no price floor.

With this income support oriented program, the current price of sugar would fall to either the price support floor or the world market price, whichever is higher. Lower sugar prices would encourage increased sugar consumption particularly by recapturing markets lost to corn sweeteners. As a result, the wet corn milling industry and related sweetener use of corn would decline. World market prices would tend to move upward because of increased consumption in the United States.

If target prices were maintained at the current loan level, producer returns would not decline except when the payment limit was effective. Integrated sugar producers, such as those predominant in Florida and Hawaii, would be particularly vulnerable to payment limit restrictions. For example, five of the six milling companies in Florida own approximately two-thirds of Florida's total cane acreage.

Current quota-holding countries would lose the benefits of higher U.S. sugar prices. They would only be able to sell to U.S. refiners at the world price. However, improvement in world prices

would partly compensate for lost, high-priced U.S. quota sales.

Under current budget constraints, increased expenditures on the sugar program would require reduced expenditures on other commodities. In other words, the agriculture committees would need to decide where to cut expenditures in order to increase sugar subsidies.

Reduced price support with transitory income payments

This alternative would use target prices only for transition to a freer sugar market. For example, the Sugar Program Improvements Act of 1987, proposed during the Reagan administration, would have reduced loan rates from 18 cents to 12 cents per pound of raw sugar over four years. Producers' income would have been supported by direct payments starting at 6 cents the first year and declining to 1.5 cents by the fourth year. Also, the payment rate would have declined progressively as the quantity of sugar produced on each farm increased. USDA estimated government costs for the four-year period would be \$1.1 billion. Once again, considering current budget constraints, these increases in government costs would have to come from some other source.

This alternative would have an adverse impact on the U.S. sugar production industry and associated rural economies. The extent of the decline in the sugar industry would depend on the level of world trading prices that might be sustained as U.S. production declined and consumption increased.

Producers would experience declining income over the four-year transition period, and produc-

tion in high-cost areas would disappear as producers shifted to other commodities. Low-cost producers might continue but would receive sharply lower economic returns and the cost to purchase or lease production contracts would decline. Dryland sugarbeet producers generally have lower production costs, so the production decline would be moderated in these areas.

The sugar processing industry would go out of business along with producers in high production cost areas and could be downsized in lower-cost areas. Thus, rural economies in these areas would experience declines in employment and economic activity, and processors of corn sweeteners would experience lower prices and reduced demand. Consumers would gain from lower-cost sugar, but they might experience less stable sugar prices in food stores.

Sugar-exporting countries would gain from a gradually expanding sugar market at somewhat higher world trading prices; however, prices for U.S. imports under quota would decline with lower support prices.

Free market policies

Free agricultural trade will move the world trading price for sugar toward the average production cost of the majority of efficient producers. This price would be above the current world trading price but possibly below the current U.S. support price. This may mean lower sugar prices for U.S. producers and consumers, downsizing U.S. sugar production, increasing U.S. sugar imports, reducing HFCS production and prices and reducing the price received by quota-holding countries for sugar sold in the United

States. Communities located in regions with high sugar-producing and -processing costs would be adversely impacted.

Honey Policies

The 1987 Census of Agriculture indicated 40,000 beekeepers while trade publications claimed as many as 125,000 beekeepers, counting hobbyists. The 4,000 beekeepers who participated in the honey program accounted for 95 percent of U.S. honey production. Although beekeepers in 47 states used the honey program, the largest concentration of honeybee colonies were located in California, North Dakota, South Dakota and Florida.

Domestically produced honey has had a price or income support program since 1950. The objectives of the honey program have been to provide price stability to beekeepers and to ensure sufficient bee population to provide pollination to certain food and fiber crops.

Although nonrecourse loans were available to honey producers since 1950, the market price generally exceeded the loan rate until 1981. Beginning in 1981, the loan price exceeded the world market price, thus increasing imports. Domestic producers forfeited their honey to the CCC to realize the higher price. The large forfeitures led to large stocks and increased CCC expenditures which peaked at \$100 million in 1988. To control expenditures and allow domestic producers to compete with imports, honey producers were allowed to repay CCC loans at market prices beginning with 1986 production. Honey producers were also given the option of a

loan deficiency payment in lieu of the marketing loan. To further reduce program costs, loan rates were reduced from a high of 65.8 cents per pound in 1984 to 53.8 cents by 1990. These changes brought program costs down to \$16.9 million in 1993.

In October 1993, Congress eliminated the honey support program beginning in fiscal year 1994. Congress eliminated the program because they believed it was too costly, was used primarily by large commercial honey producers and was not needed to ensure crop pollination as crop producers could own or rent bee colonies. A problem with owning bees for pollination is how to get paid for bees pollinating the neighbors' crops.

The major policy decisions concern price supports and imports. Should Congress reinstate a revised honey program, perhaps with lower support levels and more restrictive payment limits? Also, should honey imports, particularly from China, be curbed or subjected to higher tariffs?

Conclusion

The sugar program has provided the environment for a stable and generally profitable U.S. industry. Producers, processors and rural communities in sugar-producing areas have benefited. Control on imports has been the mechanism to support prices above world trading levels. The cost of the program has been borne by U.S. consumers and producers in sugar-exporting countries that have little or no access to the U.S. market. The sugar industry has

been able to maintain its protection from imports under both the NAFTA and GATT agreements. World market trading prices are lower than they would be in the absence of protective measures in the United States and other industrialized countries. Therefore, evaluation of freer sugar trade policies must take into account the resulting increase in world sugar prices.

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Livestock and Poultry Policy

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Background

The 1995 farm bill and other legislation in the food arena could have a large on the United States livestock sector. Feed costs constitute a major portion of total costs of livestock and poultry production. Instability of feed ingredient prices contributes to the instability of livestock production, prices, returns to producers and prices to consumers. Thus, feed grain program provisions affect livestock producers and consumers. Relatively high loan levels, coupled with significant government stocks that can be used to offset short crops or export surges, tend to stabilize feed and livestock prices. Whereas, low loan levels and/or marketing loans with stocks held only in private hands are likely to result in greater price variation.

Issues

There are many issues of concern to the livestock sector which will be debated in the legislative arena. In addition to the feed grain program, which is covered elsewhere in this series of

papers, issues that will be of significant concern to livestock interests during the upcoming debate on the farm bill and related legislation include the following:

- The declining quantity and quality of publicly reported livestock price information.
- The desirability of allowing animal patents.
- The impact of rising animal welfare concerns on livestock production.
- The future status of land enrolled in the Conservation Reserve Program.
- The future of industry financed promotion and research programs.
- The structure of the swine industry.
- The food inspection and meat safety issues.

This paper will provide a brief overview of the current situation in each of these areas as well as discuss several public policy alternatives along with their probable consequences.

Policy Alternatives and Consequences

Public Price Reporting

The reliability of public price reports is becoming an issue because of concentration in the red meat slaughtering industries. The four largest beef packers in the U.S. have 73 percent of steer and heifer slaughter, and the four largest pork packers control 42 percent of the nation's hog slaughter. Nearly eighty percent of the nation's sheep and lamb slaughter is in the hands of four firms.

Increased packer branding, an increased sale of products on contracts priced on the basis of market quotes and an increased share of production sold as further processed products are leading to thinner public markets where benchmark values are established. The trend towards the use of non-market coordination of production and processing will lead to further reductions in price information available to the public and make it more difficult to compare prices across firms as product descriptions vary from one firm to another. Present voluntary price

reporting systems will be faced with even thinner commodity markets and perhaps even reduced cooperation from integrated operations. The loss of reliable price reports and consistent product definitions on which price quotes are based could lead to economic inefficiency if prices fail to reflect changing supply and demand conditions.

The price reporting policy alternatives include the following:

- **Mandatory uniform descriptions to measure and describe live or animal carcasses to facilitate comparison of bids and offers.** Objective definitions of descriptions would increase the information content of the price message and more effectively communicate consumer demand to producers. The difficulty of arriving at a set of objective measures that can reflect clearly the unique needs of individual processors must be appreciated. To a degree, however, the standardization of descriptions and measurements conflicts with the need to meet specific demands and to change the product to fit the more rapidly changing demands of consumers.
- **Mandatory price reporting combined with objective description at wholesale for major meat and poultry products could facilitate coordination and increase effective competition in the livestock and poultry sectors.** With modern computer and telecommunication methods, mandatory transaction reporting would not create a heavy burden for processors. Price reports used most frequently for

formula pricing are provided by private firms. However, if reporting were mandatory, eligibility for access to the firm level reports would have to be established and controlled to maintain confidentiality. Reporting and interpretation of more complex data will present some new challenges, and some processors may object on privacy grounds.

Animal Patents

Biotechnology holds the potential for much more rapid change in food animals, both in efficiency of conversion of feed to protein foods and in variation of other attributes to satisfy consumer demand. Recent innovations in biotechnology suggest that major changes in livestock breeding programs should be available in the near future. The potential for rapid change in animal characteristics creates concern about property rights associated with genetic developments. On the one hand, protection of the discoverer's rights encourage activity to improve animals, but such rights also convey market power that may not be used in society's best interest if access to improved technology is severely limited.

The animal patent policy alternatives include the following:

- **Allow animal patents.** Patenting has been considered an accepted mechanism to protect intellectual property, thus providing the incentive to develop new products by increasing the chances of obtaining an economic return on research investments. Biotechnology has moved rapidly from basic academic research to commercial applica-

tion. Today's research and product development is heavily dependent upon venture capital for small biotechnology companies and investment by large corporations. Availability of patent rights has perpetuated such ventures and investments in research.

In the livestock industry, however, there is a strong feeling that patenting and regulation of genetically altered animals must be developed in a manner that is compatible with traditional commercial agriculture. For example, will the potential technology reduce the dependence on traditional land-based systems in beef production in favor of confinement production as is seen in poultry and pork? Will the granting of animal patents accelerate vertical integration in beef and pork production?

- **Disallow animal patents.** The alternative of not allowing animal patenting would likely foster a much greater reliance on publicly funded research for animal improvement. The greatest concern related to animal patenting is the possibility of monopoly control of economically valuable animals and the potential negative impact on animal producers and consumers from such market control. The concern is not unique to patenting. Such concerns, however, have been more directly addressed by antitrust laws and regulation rather than patent restriction. Prohibiting patenting could force biotechnology companies into competitive-production agriculture based upon franchise arrangements or contract production that would allow

control of novel animals. This could affect the market structure of the livestock and meat industries.

Animal Welfare

There is little question that most Americans believe that animals, whether companion animals, work animals, or food animals, should be treated humanely and should not suffer unnecessarily. Humane slaughter has been defined and required by law for many years. Animal welfare advocates have been concerned about practices in intensive livestock production that limit space for and movement of animals, such as veal calves in crates and laying hens in cages. Furthermore, a small segment of the U.S. population questions whether humans have the right to view and use animals as resources to the point of excluding use of animals as food (for more background on this topic, see the *Animal Rights and Animal Welfare* paper included in this series).

Much of the concern about animal treatment appears to be based on anthropomorphism, the attribution of human motivation, characteristics or behavior to animals, rather than research based knowledge of animal welfare. Most animal producers contend that animal comfort is related to productivity and is already in the producer's economic interest. In many cases, the trade-off is between animal production with greater space versus the efficiency and consequently lower consumer prices attributable to confined production systems.

The animal welfare policy alternatives include the following:

■ **Set minimum space requirements for livestock and poultry produced in confinement.** Setting minimum standards for livestock and poultry raised or maintained in confinement would increase production costs and, eventually, consumer food costs. Impact on animal welfare would be a matter of conjecture, unless objective measures of animal welfare can be reliably established.

■ **Establish standards and verification for production under alternative conditions.** Measures to establish names and standards for alternative animal production systems and to verify that claims for products are valid could be put in place at the national level. A board of interested producers, processors and consumers might be established to set standards and to establish systems to verify claims. Thus, a market solution would be facilitated. Those for whom the production system is of great concern could voluntarily pay the price while others would continue to benefit from more cost efficient production systems.

Conservation Reserve Program (CRP)

Following a major liquidation that began in the mid-1970s and continued through much of the 1980s, profitability returned to the cow-calf sector in the late 1980s. The return to profitability helped stabilize the size of the U.S. cattle herd and, more recently, it has led to a modest expansion in the cattle inventory. Per capita beef supplies will start increasing in the mid-

1990s. The beef supply increase will ultimately push both beef and cattle prices lower by the mid to late 1990s. Hog supplies are also increasing cyclically, and rising pork production is expected to drive hog prices below the cost of production for many hog producers in the mid-1990s. Against this backdrop of increasing meat supplies, the disposition of land enrolled in the CRP program upon contract expiration is of great concern to the livestock sector.

The CRP was originally introduced in the 1985 Food Security Act. The program's objective was to take highly erodible cropland out of crop production and provide ten years of rental payments to cushion the transition to non-cropland uses. Approximately 36.5 million acres are currently enrolled in the CRP with almost 60 percent of the acreage located in the 10 Great Plains states. Nearly all of the ten year rental contracts on land enrolled in the program expire by 2001, and the first contracts expire in late 1995.

The CRP policy alternatives include the following:

■ **Status quo.** If the CRP program is simply allowed to expire when existing contracts terminate, the livestock sector will be impacted in two ways. First, the return of a significant portion of the CRP land to crop production will increase grain supplies and push feed costs lower. A recent study (for more details see *The Conservation Reserve Program: Present and Future* paper in this series) indicates that if 50 percent of the land enrolled in the CRP returns to crop production, wheat and corn prices will decline 5 to 6 percent. The

decline in feed costs will result in an increase in livestock profitability for several years but will ultimately lead to a greater expansion of livestock production than would otherwise have occurred. Second, most of the land that does not return to crop production will be suitable for use as livestock pasture. The increase in pasture availability will result in lower pasture rental rates and hay prices which, in addition to the aforementioned decline in grain prices, could provide further impetus to the expansion of the U.S. cattle herd currently underway. This will ultimately help in pushing cattle prices lower than they would otherwise go. Thus, in the short run, releasing the CRP land will increase livestock profitability because of a feed cost reduction. The long term effect on livestock profitability would likely be negative as supply increases result in lower livestock prices.

- Offer a CRP program extension that will be attractive enough to keep most land currently enrolled in the CRP out of either crop or livestock production for another 5 to 10 years. Offering a CRP program extension will help maintain the original CRP program's objective of keeping highly erodible land out of crop production. It will also limit the likelihood that a large increase in pasture availability of as much as 10 to 12 million acres will occur in the late 1990s. Restricting the increase in pasture availability removes an ancillary incentive to expand the U.S. cattle herd in a time frame when cattle numbers are approaching a cyclical peak.

However, keeping land in the CRP could prove expensive to the taxpayer. Current contracts have an average rental rate near \$50 per acre which means that maintaining the program could have an annual cost of approximately \$1.8 billion. Maintaining a large CRP enrollment also limits short run U.S. crop production flexibility in the event that grain stocks are drawn down sharply because of crop production problems although it does provide a long term acreage reserve.

- Offer a new CRP program designed to keep CRP land from returning to crop production, but allowing it to be used for haying and grazing. This program offers many of the environmental benefits associated with a continuation of the current CRP program, but it could be executed at a somewhat lower cost since landowners would reap some of the benefits associated with haying and grazing. Adoption of this policy option would lead to a larger portion of the current CRP in pasture and hay production than under the status quo policy option. As a result, this policy option could encourage the greatest expansion of livestock production, especially cattle, of the three alternatives. The long term result would be lower livestock prices, particularly cattle, than would otherwise occur, ultimately benefiting the consumer.

Industry Financed Promotion and Research Programs

Current legislation authorizes checkoff programs in dairy, beef

and pork which are funded through assessments on producers based on their sales volume. The underlying purpose of these programs is to increase producer returns by funding various marketing efforts that will lead to an increase in demand for the commodity in question. Consequently, most expenditures from these programs go to advertising and promotion with a relatively small proportion of the total dollars collected devoted to funding research. In some cases, the authorizing legislation actually restricts the types of research that can be funded by checkoff dollars to research that is not oriented toward farm level production practices (for more detail on advertising and promotion programs see the *Commodity Advertising and Promotion Programs* paper in this series). The value of these programs to producers are difficult to document, but research on both dairy and beef promotion efforts suggests the programs have been successful in increasing demand for their respective commodities and that the returns to dollars invested in the programs are positive and significant. However, other research suggests that the rate of return on farm level production research might exceed the rate of return on commodity promotion programs.

The checkoff policy alternatives include the following:

- Status quo. Current legislation authorizing checkoff programs will remain in force including prohibitions on spending checkoff dollars on farm level production research. Promotion programs appear to have a positive impact on the demand for their respective commodities which means producers will

receive somewhat higher prices for the products than they would without the programs in place.

- **Continue to authorize check-off programs but remove restrictions prohibiting the boards overseeing program expenditures from spending money on farm level production research.** The programs would operate much as they do now; however, they would have the flexibility of allocating checkoff dollars where the rate of return is highest. If this policy is adopted, it is likely that some of the dollars currently being allocated to promotion programs will be reallocated to research that reduces farmers production costs. In the long run, consumers would benefit because a reduction in production costs would ultimately lead to lower retail prices.

Swine Industry Structure

The U.S. hog industry structure is changing rapidly from an industry with a relatively large number of small producers to an industry with a small number of large operations. Although this trend has been in effect for a number of years, the pace of change has accelerated recently. The trend toward increasing concentration is being augmented by increasing vertical coordination within the industry.

The pace of changes occurring in size, ownership and contractual relationships of swine production have led some industry observers to question whether policy prescriptions designed to slow the industry's consolidation would be

appropriate. In 1980, no swine operations marketed more than 50,000 head of hogs per year. By 1992, 41 operations were known to market more than 50,000 head of hogs per year. Similarly, Rhodes and Grimes estimate that 15-16 percent of all U.S. hogs produced in 1991 were produced under some form of contract. This represents an increase of 4 percent since a similar survey in 1988. Typical contract relationships involve separation of the farrowing and finishing stages of production. Thus, the owner of feeder pigs may contract a grower to take custody of the pigs and feed them to slaughter weight with feed, medication and management programs provided by the owner. The grower may own the facilities or the facilities may be owned by the owner of the pigs.

Two policy issues arise from the structural changes. First, large swine producers may have access to more sources of capital. That is, their size makes it easier to acquire capital as well as to acquire capital at lower rates. Second, there are environmental concerns raised by these large scale production facilities. The environmental concerns include, but are not limited to, surface and groundwater contamination, odor nuisances, and waste management. The swine structure policy alternatives include the following:

- **Status quo.** It may be argued that these are natural economic changes which occur with the growth and maturing of an industry. Competitive forces may be the most efficient allocator of scarce resources for swine production. This default policy option will likely result in a continuation of recent trends currently observed.

Operation size will continue to increase, contract production arrangements will likely increase, and smaller swine operations will find it more difficult to compete. Under this scenario, environmental concerns arising from the operation of large units will be dealt with at the state and local level.

- **Include provisions for national environmental guidelines.** Currently, nearly all environmental standards which apply to swine production are at the state, county or community level. However, knowing that application of stricter or looser environmental guidelines and restrictions may affect a community or region's competitive position (those with less restrictive ordinances will likely attract production facilities) there is some incentive to abuse environmental regulations as a form of business expansion or alternatively as a tariff against large production unit expansion in certain areas. Federal legislation could be imposed to provide a minimum set of environmental standards. This would eliminate some of the uncertainty surrounding environmental regulation compliance and could promote environmentally conscious development of the swine industry. Additional local regulations could still be used to protect particularly fragile regional ecosystems. Concerns exist regarding the imposition of environmental guidelines at the federal level. In particular, it's not clear whether a one size fits all approach to regulating livestock waste management and disposal

is workable. Good waste management practices vary with changing geography and weather patterns. It might prove difficult to allow for the necessary flexibility in federal legislation to promote good waste management practices.

- **Include provisions for improved capital access.** There may be increased economic efficiency with larger size swine facilities. If this is the case, it may be necessary for small producers to become larger if they wish to compete. However, a significant barrier to entry is the large capital requirement for large scale confinement production facilities. To foster this growth it may be beneficial to develop a financing mechanism within the current farm finance structure to provide expansion loans to smaller swine producers which will assist them in expanding their operations. This could improve the competitive nature of the swine industry by reducing the barriers of entry to swine production faced by smaller operators.

Meat Inspection and Food Safety Issues

The wholesomeness and safety of food products is of key importance to consumers. Failure to ensure the safety of the meat supply has direct and indirect consequences. Direct consequences include the potential for illness and death resulting from a contaminated meat supply. Indirect consequences include the costs of lower meat consumption

because of reduced consumer confidence. However, improvements in technology may make it possible to better ensure the safety of the meat supply at a reasonable cost. Currently, the USDA is developing a two track proposal to improve meat inspection. Track 1 is to maximize the performance of the current inspection system. Track 2 is to develop a revamped regulatory program for the future and calls for more revolutionary changes.

The meat inspection policy alternatives include the following:

- **Improve performance of the current inspection system.** USDA has recently taken steps to improve the current inspection system in both red meat and more recently, poultry plants. This approach essentially applies higher quality control standards to the meat production process using technology already in place. More careful inspection of meat in packing plants will slow production line speeds and raise costs. The actual impact on food safety will be modest and will still be heavily dependent on consumers proper handling and cooking prior to consumption.
- **Implement legislation designed to encourage the use of advanced technologies such as antimicrobial chemical sprays and irradiation to ensure meat safety.** Increased use of these techniques would ensure improvement in the safety of meat products. However, consumer attitudes toward the safety of meats may be unchanged, particularly if they

have concerns about the treatment methods. The trade-off seems to be that use of these methods would almost assuredly improve the safety of meat products with respect to microbial contamination and thus greatly reduce the incidence of illness associated with meat contamination. If consumers still have concerns about the treatments' safety, the negative impact on consumer demand associated with health and safety concerns may persist.

- **Implement improved quality control measures throughout the meat production process.** While antimicrobial chemicals and irradiation offer methods of "fail safe" protection, improving the overall quality control of meat products is another long term alternative. This would include using advanced detection methods, improved packaging, and close monitoring of on-farm production practices, processing practices and safe food handling procedures. It would also improve the image and safety of meat without the compromise of employing treatments to which some consumers are averse. An improved total quality control system could relieve many of the health and safety concerns associated with the meat supply, but the total cost of implementation may be greater than for the other alternatives.

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Fruit and Vegetable Policy

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For the U.S. fruit and vegetable industry, the 1990 farm bill represented landmark legislation. For the first time, a fruit and vegetable title was included as part of the farm bill. In contrast to the commodity programs usually addressed in the farm legislation, fruit and vegetable producers and marketers operate, for the most part, in an environment where producers competing among themselves. However, marketing orders provide group market discipline for some fruit and vegetable markets.

A unique feature of fruit and vegetable agriculture is that growers usually make production and marketing decisions independent of each other with decisions based on market-oriented judgments as to individual expected costs of production, anticipated prices and probable volume of perishable product that will be available over a specific time period. This decision process can be contrasted with regulated commodities through which decision-making is facilitated by government policy considerations such as price support and/or subsidy considerations.

In the fruit and vegetable industry, success is heavily dependent on information acquisition. Effective producer decision-making involves acquisition of

detailed knowledge about buyer demand and improved understanding about their own production costs as well as the competitive cost structure of the industry.

In general terms, the fruit and vegetable title of the 1990 farm bill addressed the need for greater public information about industry practices and policies. Fruit and vegetable consumption has expanded in recent years primarily because of health and nutrition considerations. The desire to obtain factual data was why the 1990 title received widespread support from the industry. Many sectors recognized that while existing legislation did provide for selected facilitating functions (for example, marketing orders and agreements), industry-wide data were often inadequate and incomplete to ensure efficient and effective responses to industry problems and issues.

Because comprehensive baseline industry information is poor or nonexistent, impacts from recent policy changes such as enactment of nutrition labeling requirements, passage of the North American Free Trade Agreement (NAFTA) and/or advances in biotechnology leave industry participants uncertain about the future and concerned about how their competitiveness will be affected.

Current Status and Forces of Change

The fruit and vegetable title of the 1990 farm bill recognized the economic importance of the fruit and vegetable industry and its associated problems by stating:

"fruits, vegetables, and specialty crops are a vital and important source of nutrition for the general health and welfare of the people of the United States; and that fruits and vegetables are recommended as an essential part of a healthy, nutritious diet . . . improving U.S. dietary and nutritional standards by promoting domestically produced wholesome and nutritious fruits and vegetable products; increasing public awareness as to the difficulties domestic producers experience regarding the production, harvesting, and marketing of those products; and aid in the development of new technology and techniques that will assist domestic producers in meeting the challenges of increased demands for fruit and vegetable products in the future."

In support of the congressional declaration that the domestic production of fruits and vegetables is an integral part of U.S. farm policy, the Secretary of Agriculture was directed to conduct a study to determine the state of the U.S. fruit and vegetable industry. The contents of the study were to include the following objectives:

- A review of the availability of an adequate labor supply for maintaining and harvesting fruits and vegetables.
- A review of the availability of crop insurance or disaster assistance for fruit and vegetable producers.
- A review of scientific and technological advances in the areas of genetics, biotechnology, integrated pest management, post-harvest protection and other scientific developments related to the production and marketing of fruits and vegetables.
- An examination of the availability of safe and effective chemicals for use in the production of fruits and vegetables, and an evaluation of the value of national uniformity to both consumers and producers.
- A review of the requirements and cost of labeling fruits and vegetables in the industry, and the benefits that would result from the labeling of such products.
- A review of Federal education programs that teach the importance of fruits and vegetables to a proper diet.

Although mandated, such a study has still not been released by the Secretary of Agriculture.

Issues

Although some fall outside the jurisdiction of the 1995 farm bill, several issues of significant importance to the fruit and vegetable industry include the following:

- What will be the impact of rules and regulations designed to implement legislation to protect the environment and agricultural workers on the economic and biologic viability of fruit and vegetable production in the United States? Included in the issue are the deliberations over Delaney and the Federal, Insecticide, Fungicide, and Rodenticide Act (FIFRA). In addition, there are questions regarding the implications of sustainability provisions of the 1990 farm bill for the future of the fruit and vegetable industry if they receive greater emphasis in the 1995 farm bill.
- National nutrition and dietary goals suggest significant increases in the consumption of fruits, vegetables and grains. While this concept is supported by the medical and nutrition professions, consumer groups and the fruit and vegetable industry, successful implementation faces many hurdles. For example, the livestock, poultry and dairy industries, as well as the fast-food industry, have an incen-

tive to maintain the status quo. Furthermore, many government programs, including nutrition programs such as the school feeding program, tend to discourage the consumption of fruits and vegetables.

- Marketing orders which have historically been supported by federal legislation have come under attack from both consumer-advocacy groups and environmental groups. Given the widespread use of and general support for these activities by the fruit and vegetable industry, it is not clear that these facilitating functions should be eliminated without benefit of definitive impact analysis.
- The Perishable Agricultural Commodities Act (PACA) administers the law regulating the buying and selling of produce, and it is running out of money. Congressional support is currently being sought to authorize raising the license fees which are now set per company. Produce retailers and wholesalers claim that they pay an unfair share of the cost of the program, while receiving few benefits, and they would like to see the law eliminated. Proponents of PACA claim that it ensures "fair" buying and paying practices, that it is less expensive than lawyers and courts for settling disputes and that buyers, both wholesale and retail, benefit from the rules covering contracts, origin, grade, count, labeling, and other terms and practices.
- The linkage between federal grading standards and other

regulations governing cosmetic appearance and pesticide use remains a significant concern. The 1990 legislation called for research to produce the following outcomes: (1) determine perishable commodity pesticide application levels; (2) determine the extent to which Federal grade standards affect pesticide use; (3) determine the effect of reduced emphasis on cosmetic appearance on application of pesticides, adoption of reduced-pesticide agricultural practices and production and marketing costs; (4) determine the extent to which grade standards reflect consumer preferences; and (5) develop options for removing obstacles to pesticide use reduction. Field market research studies were also requested to demonstrate and evaluate programs designed to offer consumers choices of products with different production practices, to provide consumers with information regarding agricultural practices used in perishable crop production and to educate the public regarding the relationship between cosmetic appearance and pesticide use.

A study conducted by Powers and Heifner concluded that there is little evidence regarding the effects of grades on pesticide use. There is evidence that pesticides reduce quality degradation for some items. However, many pesticides increase yield as well as quality, and the effects are not easily separated. Reducing the use of pesticides would increase the share of produce with blemishes and other appearance defects and

decrease per acre yields. Several studies suggest that some but not all consumers are willing to accept some types of surface defects. Additionally, higher production costs due to lower yields would elevate consumer food expenditures.

- The threatened loss and reduction of minor-use crop pesticides impact all sectors of the fruit and vegetable industry. In October 1988, Congress amended the Federal Insecticide, Fungicide and Rodenticide Act, commonly known as FIFRA. As amended, FIFRA requires that all pesticides registered before November 1984 be reregistered to comply with present standards by the end of 1997. This legislation has serious implications for the so-called minor crops such as vegetables, fruits, nuts, herbs, spices, ornamentals, flowers, trees, turfgrass and even for some major agronomic crops requiring minor-uses of pesticides.

Policy Alternatives and Consequences

As with the issues, many fruit and vegetable policy alternatives likely will be debated and legislated outside the 1995 farm bill. This does not mean, however, that the 1995 farm bill has no place in the process.

Status quo

As mentioned in the Issue section of this leaflet, the mandated study to determine the state of the U.S. fruit and vegetable industry has not been released. From a policy perspective, it is difficult to understand the nature and problems of the fruit and vegetable industry without completion of this base study. The issues that were important in 1990 continue to be of critical importance in the mid-1990s. Furthermore, it is impossible to accurately assess policy impacts on the fruit and vegetable industry without this benchmark information. Factual information and detailed analysis of problems remain inadequate to help the industry solve its own problems because federal and state agencies have under-invested in information collection. Information is needed so that industry leaders and participants can make factually-based business decisions while also providing consumers with desired products.

In addition, this benchmark information is required before the economic, environmental and social impacts of changes in environmental regulation, water safety regulation, marketing orders and food safety regulation can be assessed.

PACA

One alternative would be to allow status quo although this would mean the eventual depletion of PACA reserves, thus eliminating the program by default. Another alternative could include an appropriation of additional funds for the PACA program or passing legislation that would allow PACA licensing fees to be raised. Thus far retailer opposition has been

effective because no one in Congress has been willing to sponsor such a bill. Another alternative, which would involve no Congressional intervention, would have the Secretary of Agriculture to appoint representatives from all parties concerned (growers, wholesalers, retailers and the USDA) to resolve the issue through a task force.

Grades and standards

Leaving fruit and vegetable grades and standards as they are will continue to fuel the concern relative to the linkage between cosmetic standards and pesticide use. Lowering the standards, however, might make it difficult for consumers to obtain produce with appearance attributes they desire. Marketers might develop alternative mechanisms to ensure availability of produce with the desired appearance attributes and further encourage pesticide use for limited appearance defects. Thus, net pesticide usage might not change significantly.

Other alternatives could include modifying the standards to include information regarding pesticide use during growing and packing stages or to develop a stand-alone pesticide testing and monitoring program. The extent to which these alternatives would alter consumer fresh produce purchases depends on consumer sensitivity to health and environmental risks, price differences and product quality differences. Unfortunately, much of the information necessary for considering any modification or addition to existing grades and standards is unavailable at this time. Thus, the field market research mentioned in the Issue section that was mandated in the 1990 Farm Law would

likely contribute to a more informed policy decision process.

Minor-Use Crop Pesticides

The Clinton administration has already sent its legislative proposal to Congress to revamp pesticide laws and replace the zero-risk Delaney clause. This bill, "The Pesticide Reform Act of 1994" would dramatically change the manner in which pesticides are regulated. The zero-risk Delaney clause would be replaced by a new safety standard defined as "reasonable certainty that no harm will result from all anticipated consumer exposures to the residue". The bill also sets stricter safety standards for children, which is in line with the National Academy of Sciences recommendations. Other key provisions call for the following:

- (1) all pesticides to be reregistered every 15 years,
- (2) strengthened authority for FDA enforcement against companies that ship food with illegal levels of residues,
- (3) restrictions on the export of pesticides not permitted in the U.S.,
- (4) speedier cancellation of problem pesticides and
- (5) incentives for registering pesticides on minor crops.

The bill is prompting considerable debate, mainly because it eliminates consideration of the benefits of pesticides unless food groups can prove that the loss of a pesticide would seriously disrupt the food supply.

USDA could be instructed to implement means to improve coordination of federal programs relating to pest management on

minor crops. This federal coordination with state programs could help develop and integrate new technology into practical pest management programs. Requiring an emphasis in integrated pest management (IPM) practices is a start in that direction. Additional multiyear funding would likely be needed to achieve the goals of the IR-4 Project to register new minor-use pesticides and support needed re-registrations. Increased funding could be directed toward establishing and staffing field research centers, upgrading existing analytical facilities, establishing additional satellite laboratories and expanding the existing program for registering biologicals. Renewed emphasis on fundamental and applied research for agricultural pest control could be encouraged through the availability of additional funding grants.

The Environmental Protection Agency (EPA) could consider allowing the maximum amount of time consistent with re-registration time frames for the submission of residue data in support of minor-uses while fully utilizing existing policy for minor-use data waivers. Additional options could be explored for the use of surrogate data from related commodities in support of minor-use registration and re-registration. Additional measures involve delaying cancellations of unsupported minor-uses at the request of the registrant, until the Agency is prepared to make a decision on the re-registration of the pesticide active ingredient. This will be possible provided the EPA is not aware of any unreasonable risks associated with the unsupported uses. This would provide a transitional period to allow IR-4 and other interested parties additional time to develop

data for unsupported uses or to develop alternative pest controls.

Legislation could be enacted to facilitate and expedite the registration of biological and microbial pest control agents. For example, testing guideline requirements for biologically-based pesticides to develop clear guidance for potential registrants could be reassessed. This would also compliment the administration's emphasis on IPM practices. Adequate staffing is needed to coordinate the review of minor-use petitions from all sources and to assist in expediting approvals for biological control agents. Funds to support minor-use activity should be earmarked specifically for this purpose.

Appropriate incentives could be developed to encourage private sector registration of minor-use pest control products. Among those incentives that are frequently cited are extended patent protection, extended periods of exclusive use of data and "fast tracking" registrations that include one or more minor uses.

Summary

While all of the issues discussed in this paper are important to the fruit and vegetable industry, the combined synergistic effects of these issues should not be overlooked. The industry has and will continue to resolve many of the issues that surface without government intervention. However, the operating environment, as characterized by increasing pressure from the political arena, has become one in which it is difficult for fruit and vegetable firms to function.

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Natural Disaster Protection Policy

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Background and Current Situation

Multiple Peril Crop Insurance (MPCI) is not a new idea. Several private insurance companies offered policies in the early part of this century. However, those companies dropped the program within a very short time because losses caused by widespread drought wiped out their reserves. The current government interest in crop insurance is not a new phenomenon. As early as 1922, the Senate called for hearings on federal crop insurance. Later, the Agricultural Adjustment Act of 1938 established the Federal Crop Insurance Corporation (FCIC). The program was expanded until 1947 when Congress reduced it to an "experimental" program.

A more recent program is the agricultural disaster assistance policy that provides financial protection against drought, excess moisture, hurricanes and other weather caused perils. Disaster policy has also been applied to nonagricultural disasters caused by hurricanes, floods and earthquakes. Most of these policy's were

initiated in the late 1960s and in the 1970s.

The Crop Insurance Act of 1980 was an attempt to make crop insurance the federal government's means for dealing with natural disasters at the individual farm level. Objectives included making multiple peril crop insurance more broadly available and giving farmers the opportunity to make yield risk reduction a cost of doing business. This action was expected to reduce the political and economic incentive to provide "free" disaster assistance programs to farmers.

However, even the most ardent supporters of crop insurance will not argue that the program has worked as expected. The initial goal of the 1980 Act for crop insurance was to have 50 percent participation by 1989. Recent national participation rates are estimated in the 31-45 percent range. The greatest participation rates are in the Great Plains and the western corn belt. In the northern Great Plains, current participation exceeds 80 percent. However, recent General Accounting Office estimates indicate that participation in excess of 50 percent nationwide is needed before the pressure on Congress to provide disaster payments will subside.

For the period of 1980 to 1990, the cost of underwriting

losses and subsidies on crop insurance averaged \$396 million per year, disaster payments averaged \$784 million per year, and the net cost of low interest rate loans average \$1.3 billion per year. Furthermore, the loan cost estimates are probably understated because additional loans will likely be written down in the future. Given that background, the primary issue to be addressed is, "How best to provide natural disaster protection for agricultural producers."

Alternatives and Consequences

Status Quo

This option would simply continue the current MPCI program, private supplemental MPCI insurance, private hail insurance, low interest FmHA emergency loans, zero/92 after a crop failure and weather-induced ad hoc disaster programs. While still an option, it is the one choice that is under attack from both budgetary and efficacy standpoints. Many in Congress are saying either fix the FCIC program so it works or eliminate it. The problem is, however, that it is

extremely difficult to judge FCIC in isolation. Many other USDA programs such as disaster aid, 0/92/85 and low interest loans discourage farmer participation, thus reducing efficiency and the fulfillment of program objectives.

“Free” Disaster Payments

The alternatives are of two types. One type is permanent legislation that would specifically identify when disaster payments are to be paid and ad hoc programs developed by Congress as each disaster occurs. The latter is what has occurred since 1980. Congress has provided disaster payments on selective disasters because political support was wide spread. This may be effective for growers fortunate enough to draw their disaster in the right year. However, some would also view it as inherently unfair to those growers that were unfortunate enough to experience their disaster in a year when there was not wide spread public support for a full payment disaster program. An example would be those corn growers in Nebraska that suffered huge hail losses in 1987 and were denied any federal assistance including low interest FmHA disaster loans. Even in years when disaster programs are provided they tend not to be of similar design. For example, the 1988 disaster program included both commodity program crops and non-program crops. The legislation also broke the linkage with ASCS participation and provided “limited” assistance to program crop growers not participating in government programs. This was a distinct departure from past disaster programs. Also, Congress often

attaches special interest legislation to disaster bills, which increases the costs. The major gainers with a disaster program policy would be those states that have much higher production risks than the country as a whole. In addition, disasters could be substantially over estimated without the accompanying legislation to force growers to prove yields.

Multiple peril crop insurance based on individual farm yields

Allowing FCIC greater flexibility in the design of crop insurance products was a major change in the 1990 farm bill. Recent examples include the development of the Group Risk Plan (GRP) based on county losses only, and the reinsurance of privately developed replacement coverage. These products were developed for specific niche markets to increase participation.

Recent MPCl changes. Many have suggested, MPCl rates are too high for high yielding producers while too low for low yielding producers. Because participation has been low among producers with high yields, the FCIC began using actual production history (APH) in 1985 that bases yield guarantees on each individual farm’s past production history. An APH yield is based on a 4 year average, building to a 10 year average yield. APH rules prevent the “average” yield from being reduced by more than 10 percent or increased by more than 15 percent as each new yield record is added to the production history.

The standard MPCl policy provides guaranteed yields at 35%,

50%, 65% or 75% of the individual farm unit’s APH (sub-farm level’s average yield). It is common for large farmers to have more than 10 units and as a result, more than 10 APH’s. Since each unit is insured separately, a yield that is below the guarantee on an individual unit will trigger an indemnity payment. Each lost bushel or pound is then paid based on a forecasted price assuming farmers select the highest price election.

Replacement MPCl. A private replacement coverage endorsement was recently approved by FCIC for catastrophic reinsurance. This policy change should encourage more private companies to provide this coverage and in more states. It is likely to be a niche market that would appeal to growers who are currently using forward pricing tools.

While the standard MPCl contract is often discussed in terms of bushels guaranteed, in fact it only guarantees bushels if the market price equals the price election. For example, for each 6,500 bushels of guaranteed corn production, the grower will receive enough indemnity dollars to purchase 6,500 bushels only if the market price equals \$2.40, which was the 1994 FCIC forecasted corn price. If market prices were to increase to \$3.00 this same grower would only receive enough indemnity dollars to replace 5,200 bushels of corn per 6,500 bushels guaranteed under the MPCl contract (Figure 1). However, growers who forward contracted those 6,500 bushels must either produce the 6,500 bushels or buy those 6,500 bushels at current market value to fill the contract. Therefore, the remaining 1,300 bushels must be purchased from

growers' equity or from borrowed funds.

Replacement coverage guarantees all 6,500 bushels at their market value (Figure 2). For example, during the 1993 floods corn prices increased. Those growers who forward priced their corn had to replace any lost production at current market

prices. The standard MPCCI contract replaced each lost bushel at \$2.30. Replacement coverage MPCCI paid \$2.60 per lost bushel, which was the cost of replacing bushels at harvest time when farmers were required to make delivery on their forward contracted bushels.

The first 50% of crop insurance coverage provided "free". The administration is proposing this alternative to "reform" crop insurance disaster aid policy. Under this method, farmers would be given an MPCCI contract based on 50% of their proven yield at 60% of the top price election when they sign-up for commodity programs. Growers would then be able to purchase (higher) levels of yield coverage and with higher price elections. Farmers would also receive a higher subsidy for the 65% purchased MPCCI coverage.

The administration is currently asking for an additional one billion dollars to implement this alternative. They argue that savings will result because included in the legislation is a requirement that future ad hoc disaster programs be funded "on budget". That requirement is expected to make it more difficult for Congress to pass future ad hoc disaster programs.

Cross compliance. It has been suggested that farmers be required to participate in the MPCCI program as a condition for participation in government commodity programs. Conservation compliance is already a requirement and this could work the same way.

There would be very few producers that the cross compliance requirement would force out of the commodity program because of economic reasons. For example, purchase of an MPCCI contract at the minimum level of 35% coverage at 30% of the top price election would cost about a \$1.75 per acre while deficiency payments may be \$60-\$70 per acre or more for the typical Delta cotton producer.

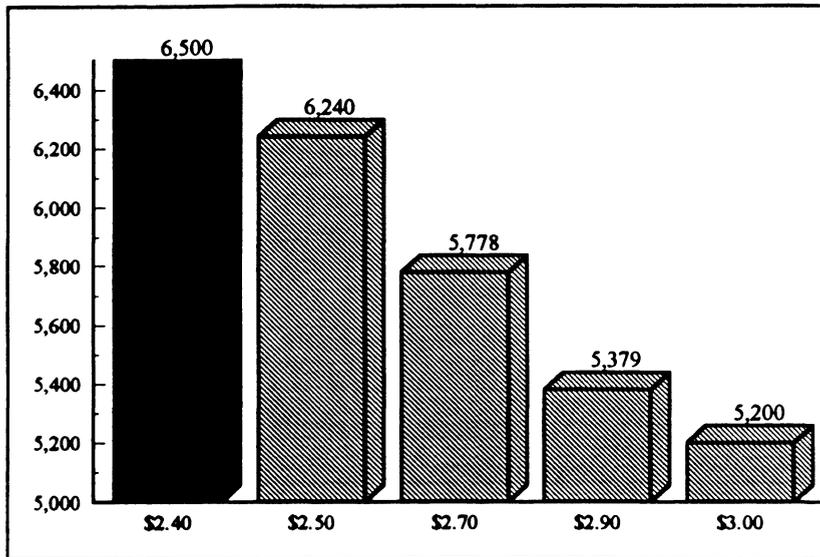


Figure 1. Replacement Bushels Using 65% MPCCI with a Corn Price Increase.

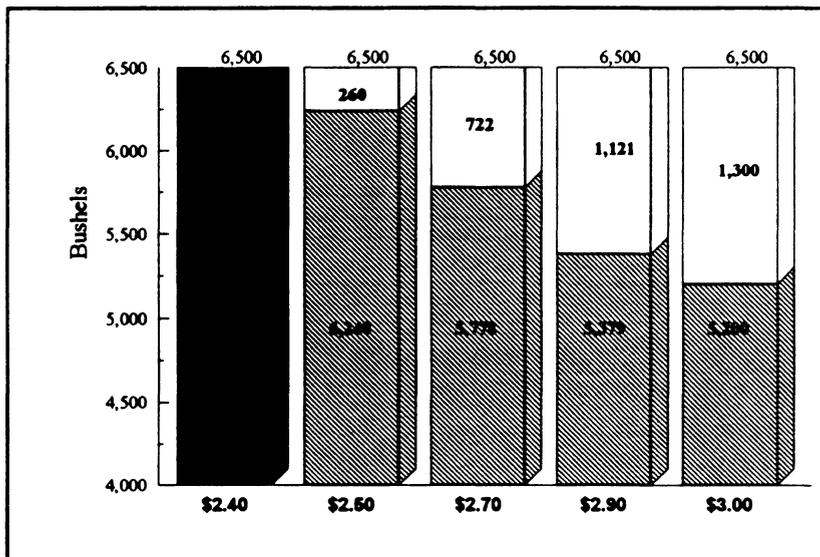


Figure 2. Replacement Bushels Using 65% MPCCI with a Corn Price Increase

This is probably the least costly alternative for significantly expanding participation rates. The administration proposal has limited cross compliance because all program participating growers would be required to have the "free" catastrophic coverage, which requires a \$50 processing fee.

Area wide crop insurance based on county yields only. More than 40 years ago, Halcrow proposed basing crop insurance payments on an area or county basis. The Commission for the Improvement of Crop Insurance suggested this approach be tested. It is now being pilot tested by FCIC under the name Group Risk Plan (GRP). GRP is based on county losses. The group is the county, and everyone in that group will pay the same premium rates for a selected coverage level.

GRP is being offered to farmers in selected test counties on corn, soybeans, milo, wheat and forages. GRP is currently an alternative offer to the MPCCI contract. Farmers in the test counties will choose between MPCCI, GRP or self insure.

GRP payments and rates by county. Farmers will be able to select dollars of protection (liability) and the percent county trigger. The trigger ranges from 90% down to 65% of the expected county yield. Maximum dollars of liability that farmers may select are set by county and crop. FCIC uses the established price multiplied by the expected county yield multiplied by 150 percent in order to set the maximum liability. Higher coverages are permitted under GRP than MPCCI because an individual farmer through management

cannot trigger an indemnity payment.

Farmers who are considering the purchase of a GRP contract should be aware of the following items:

- The premium rates and the indemnity payments are based only on the county. It is possible for a farmer to have a complete crop failure and receive no crop insurance payment under GRP. It is also possible for a farmer to produce a normal yield and receive a crop insurance payment. *GRP provides no individual farm level yield guarantees.*
- If the county has a 50 percent yield loss below the expected county yield then every GRP insured farmer will be paid from 23.1% up to 44.4% of their liability depending on percent coverage level selected by the farmer.
- GRP will provide the best protection against wide spread drought and county wide freezes. However, hail, flood, excessive spot rain, quality losses, local winds or tornados could generate large amounts of damage on an individual farm, but the farmer would likely receive a smaller than expected indemnity payment and in some situations no payment. GRP will provide almost no coverage for any peril that tends to be site specific. Furthermore, some counties may experience enough variation in weather events and growing conditions that result in GRP being suitable only for catastrophic coverage.

- The final indemnity payment will occur 4-6 months after harvest, while the premium is due at harvest.

The GRP market. Farmers that expect their yields to track with county yields are the ones who would most likely purchase GRP. Farmers with higher average yields than the county average yield are not penalized because losses are measured in percentages. For example, if the expected county yield is 30 bushels and the actual bushels produced are 15 then the county suffered a 50 percent loss. If the high yielding farmer has an expected yield of 40 bushels but only produced 20 bushels, he/she has also suffered a 50 percent loss, and GRP would cover that loss.

The GRP approach would likely reduce the cost of providing disaster protection to farmers. For that reason, many Washington policy makers have suggested the use of GRP. However, some farmers have opposed the concept because they fear a local loss that does not trigger a county payment.

It may be possible to reduce the area from a county down to a township or a zone. This would reduce the chance of a farmer suffering a loss when the GRP is not triggered. However, the cost and presumably the premium would increase. Also, the use of remote sensing may make it possible to provide an earlier estimated indemnity payment similar to the advanced deficiency payment.

Revenue Insurance

If one insures both price and yield by definition one has insured revenue. Public policy could either insure revenue through USDA or

utilize private market risk tools.

There are two government provided revenue insurance, or assurance — depending on who is footing the bill — programs being suggested. Under the Iowa Farm Bill Study Team approach, all cost would be paid by the government, and the Harrington and Doering approach assumes farmers would pay part of the cost.

An alternative revenue insurance approach would utilize private put options and private replacement coverage crop insurance endorsement combined with MPCCI. In the pilot target price put option counties, farmers can voluntarily insure their revenue by combining the two programs. The expansion of private revenue insurance would only require the Secretary of Agriculture to expand the pilot put program. (The paper titled, *New Farm Policy Approaches*, included in this series, discusses the issues, alternatives and consequences relative to revenue assurance.)

Private Insurance

Another option is for the public sector to simply do nothing and leave it up to the private sector to provide natural disaster protection. The private sector has been successful in writing single peril insurance policies on hail. Many of those private companies view multiple peril crop insurance sponsored by the government as a major competitor. Hail insurance certainly has the advantage of being much simpler to write and administer than does the more cumbersome MPCCI insurance. However, as any producer can explain, a lot of things can happen to a crop besides hail. A good example were the freezes in 1981 and 1992 in the Great Plains that

caused wide spread damage to the wheat crop. While that could have been covered under an MPCCI policy it was not covered under a hail policy.

Private hail insurance has some advantages for the grower over government sponsored insurance programs, for example, it covers spot loss. Growers with only a small part of a single field hailed out would receive indemnity payments from their private hail insurance policy. However, under an MPCCI policy they may or may not collect indemnity payments for a hail loss that covers only a small part of their farm. It will depend on how the undamaged crop acres yield. If the rest of their farm has a bumper crop, it will more than offset the hail loss, thus resulting in an average yield greater than the minimum bushels guaranteed under the MPCCI policy provisions.

The potential liability is large enough that it is questionable whether the private insurance industry would be able and willing to assume the MPCCI liability. Also, if a similar MPCCI program were offered by private insurance companies without any subsidies, farmer paid premium rates would likely double and some growing areas would be uninsurable. This result could mean even less participation than under current rates.

Private insurance companies have not been successful insuring crops for perils other than hail because of the potential catastrophic losses, and losses are not independent among the insured. One alternative would be for government to be the re-insurer of last resort. The government would re-insure private multiple peril crop insurance contracts for the part of risk that could not be sold in the world re-insurance market.

There is also the possibility that the catastrophic crop insurance risk could be covered using a new futures contract. The Chicago Board of Trade currently trades a catastrophic property-casualty insurance contract. It may be possible to apply those same principles to a catastrophic crop insurance contract.

Summary

Because of major droughts, the farm financial crisis of the 1980s and the 1993 flood, the suggestion of how to provide natural disaster protection for agricultural producers is developing into a controversial public policy issue. Agriculture is a capital intensive thin margin industry. It is certainly questionable whether the farmer and his lender can carry all the risk. Therefore, the options for natural disaster protection just discussed will be given consideration in the policy dialogue during the current legislative year and in the 1995 Farm Bill debate.

The policy debate on disaster aid is currently before Congress. The administration is proposing “free” catastrophic coverage and allowing farmers to buy additional subsidized MPCCI coverage. The Republican staff of the Senate Committee on Agriculture, Nutrition and Forestry is proposing additional farmer purchased coverage be limited to GRP. The proposal would allow private companies to write MPCCI type products, but the private company would assume all of the risk and administrative cost.

It is possible that crop insurance reform legislation will be passed this year. If this happens,

then the new Law will become the
"status quo."

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*This publication edited by Ed
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Targeting Farm Program Benefits

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Background

Historically, commodity programs have targeted benefits to grains and cotton, commercial farms, middle and upper class households, the Midwest and South and landlords. Some believe *retargeting* programs may better serve policy objectives and selected groups. Retargeting, however, requires a reexamination and perhaps redefining of appropriate objectives and target groups for commodity programs.

Current Situation and Forces of Change

The uneven distribution of benefits from commodity programs has been a major public concern since payment limitations were introduced in the 1970 farm bill. Rules have been changed frequently to retarget benefits of commodity programs. Over time, payment limitations and eligibility rules have directed a greater share

of program benefits to small and midsize farms.

Operationally, targeting has been implemented by placing eligibility conditions on who can receive government payments while at the same time limiting the amount of payments that individuals can receive. Some recent changes are discussed below.

Eligibility Rules

The Omnibus Budget Reconciliation Act of 1987 addressed eligibility criteria. Nonresident aliens were excluded from receiving direct payments from agricultural programs. Direct payments could go only to persons engaged in farming, defined as persons bearing risk or providing labor or management to the farming activity. Under the 1987 act, an individual could receive government payments from a maximum of three farming corporations, partnerships or other entities of which he was a member.

Payments normally have been proportional to eligible crops produced or diverted but limited per crop or per person. An exception is the Disaster Assistance Act of 1988 that conditioned eligibility on gross income. Producers with \$2 million (\$2.5 million for livestock producers) in gross revenue from all business enterprises were ineligible for

disaster payments. If producers earned a majority of their income from farming, only gross farm revenue would be counted in the \$2.5 and \$2.0 million limits for livestock and other producers, respectively.

Payment Limitations

The limit on deficiency and diversion payments that a person may receive under one or more of the commodity programs remained at \$50,000 in both the 1985 and 1990 acts. However, the limit of Findley payments (wheat and feed grain "emergency" compensation for reductions in loan rates), loan deficiency payments and gains from repaying marketing loans at a lower level than the original loan was dropped from \$250,000 to \$75,000. The total amount for all the above programs was initially limited to \$500,000 in the 1985 act. However, the 1986 appropriations bill dropped this limit on all programs to \$250,000. The \$250,000 limit on all programs was maintained in the 1990 act. Thus an operator and spouse together could receive \$500,000 of payments under the 1990 farm bill. (Separate limitations were set for honey, wool, mohair and conservation programs, but the former three programs are being phased out.)

Distribution of Payments in 1991

The distribution of government payments by farm size for 1987 and 1991 is reported in Table 1. The data reflect important differences between the 1985 and 1990 farm bills. First, a larger percentage of government payments was received by smaller farms under more recent legislation. Farms with less than \$100,000 in sales received 36.0 percent of all government payments in 1987 and 42.4 percent in 1991. This result is even more striking given that the proportion of all sales accounted for by these

smaller farms declined from 26.4 percent in 1987 to only 22.6 percent of all sales in 1991.

Second, the relative importance of government payments declined between 1987 and 1991. With only one exception for small farms among farm classes in Table 1, government payments as a percentage of gross cash income were cut approximately in half between 1987 and 1991. Farms with less than \$20,000 in annual sales received essentially the same benefits per dollar of sales in 1991 as in 1987.

The data in Table 1 are likely biased toward less concentration of payments on large farms than

actually occurred between 1987 and 1991 because some large farms were divided only "on paper" to remain eligible for full payments. However, the extent of that bias is unknown.

When classifying farms by the commodity accounting for 50 percent or more of the value of their total production, government payments as a percentage of gross cash income in 1991 were 6.7 percent for crop farms and 2.4 percent for livestock farms. Of all farm types, cash grain farms had the highest percentage of income from government payments (11.1 percent), followed by cotton farms (8.3 percent), cattle and hog farms

Table 1. Distribution of Government Payment and Gross Cash Income by Farm Size, 1987 and 1991.

Annual Gross Sales (\$1,000)	Government Payments				Percentage Distribution among Farm Sizes			
	Per Farm		As a Percentage of Gross Farm Income		Government Payments		Gross Cash Income	
	1987	1991	1987	1991	1987	1991	1987	1991
	----Dollars----		-----Percent-----					
Less than 20	593	650	8.5	8.6	4.8	9.7	5.8	5.1
20 to 40	5,336	2,567	14.8	7.4	7.5	7.5	5.1	4.5
40 to 100	12,348	6,699	15.5	8.7	23.7	25.2	15.5	13.0
100 to 250	28,778	10,740	15.2	6.2	36.4	28.1	24.3	20.3
250 to 500	48,729	17,275	11.9	4.6	17.2	14.5	14.7	14.1
500 to 1,000	58,947	30,231	7.4	4.1	6.7	9.6	9.2	10.6
1,000 and over	63,000	27,688	1.5	0.8	3.8	5.4	25.4	32.3
					100.0a	100.0	100.0	100.0a

*Sums not exact due to rounding.

(4.7 percent) and dairy farms (1.4 percent).

Payments by size of operation were nearly proportional to wheat production on wheat farms, to feed grain production on feed grain farms and to cotton production on cotton farms. An exception was on very large farms where payment limitations helped to hold payment proportions below production proportions. However, the major reason why payments were lower per dollar of all receipts from all commodities on larger farms in aggregate is because such farms *do not emphasize production of program commodities* but instead emphasize fruits, vegetables, poultry and livestock. We do not know to what extent payment limitations drove them from program commodities. Whether driven by payment limits or not, large farms on the whole appear not to have suffered. Rates of return on resources are at least as great on large farms constrained by payment limits as on small and medium size farms.

The fifteen leading states in terms of government payments as a percentage of gross farm income are tightly clustered in mid-America. North Dakota (15.8 percent), followed closely by Montana (14.4 percent) had the highest percentage of farm income from government payments in 1991. Other states with more than 5 percent of income from government payments ranked in order were Kansas (8.8 percent), Louisiana (8.1 percent), South Dakota (7.2 percent), Arkansas (6.9 percent), Oklahoma (6.6 percent), Mississippi (5.9 percent), Iowa (5.8 percent), Missouri (5.8 percent), Minnesota (5.5 percent), Texas (5.5 percent), Illinois (5.5 percent), Nebraska (5.0 percent) and Colorado (5.0 percent). In contrast, payments per dollar of

gross farm income averaged less than 1 percent in the Northeastern states in 1991.

Agriculture has made notable economic progress in recent decades, lessening the imperative to transfer income from taxpayers to commercial and part-time farmers. At the same time, programs have shifted emphasis from supply control to direct payments. While such a shift recognizes the importance of being price-competitive in a global economy, it also poses difficulties in a federal government troubled by budget deficits and pressures to fund new initiatives such as universal health care. The public continues to have objectives for agriculture that the market alone cannot fulfill. But the above forces for change call for targeting to achieve those objectives more cost-effectively than in the past.

Issues

Whether payments are fairly distributed depends on how fairness is defined. If fairness means equal government payment per dollar of gross farm income, large farms are treated unfairly. Large farms received less than one cent of payment per dollar of gross income while small farms received eight cents of payment per dollar of income in 1991 (Table 1). If fairness means equal payments per farm, small farms are treated unfairly. Farms with sales of over \$1,000,000 received \$27,688 of payment per farm while farms with sales of less than \$20,000 averaged only \$650 of payment per farm in 1991.

In principle, direct (deficiency) payments are easier to target to specific groups and

objectives than are benefits from other types of commodity programs such as supply controls and price supports providing rewards proportional to output and resources. However, the shift to direct payments has not markedly altered the incidence of program beneficiaries.

Revisions in programs to more effectively target payments to preferred groups have not been effective. Efforts to target operators rather than landowners are circumvented by switching from share rent to cash rent and then raising the rent to capture payments to operators. Payment limitations to individuals can be circumvented by dividing ownership among family members. Instead of merely continuing to tinker with payment limitations, a broader evaluation of targeting is appropriate for the political process. It is necessary to ask the following questions:

- What are appropriate objectives for public policy in agriculture?
- How can commodity and other programs effectively target those objectives?

Policy Alternatives and Consequences

Some Principles of Effective Targeting

One reason why commodity programs cannot serve their intended purposes is because the objectives of farm policy exceed the number of instruments (land

set aside, price supports, etc.). This reduces the efficiency of programs in serving any one objective. For example, commodity programs designed to raise farm prices by reducing production do not preserve family farms and the environment, alleviate poverty or maintain international competitiveness. *Policy goal attainment requires at least as many policy instruments as there are policy objectives.*

Another principle is that successful use of *payments to reduce production must include larger farms* because they account for most output. Combining tight payment limitations with production controls could require idling all cropland on small farms — hardly a way to preserve such farms. Foregoing production controls could allow payments to be targeted to special needs such as financially vulnerable farms, poverty or environmental hazards. However, total decoupling of payments from production and economic incentives is impossible. Another principle is that *the government cost of meeting a given target is likely to be underestimated if no account is taken of slippage.* An effort to target payments to small- and medium-size family farms rather than large farms causes large farms to break into smaller farms (at least on paper) to be eligible for full payments. An effort to restrict payments on any one commodity loses effectiveness when farm operators diversify among commodities. Some payments to reduce soil erosion will go to farms that would have taken conservation measures without special incentives.

Another form of slippage occurs when program benefits are bid into land values, thus rewarding landowners. Benefits are lost

to renters, new landowners and farm laborers. Intended benefits of commodity programs to operators are also lost to consumers and to inefficiency. For that reason, *the ultimate beneficiaries of farm programs are often different from the initial beneficiaries.*

Matching Objectives with Instruments

Seven policy objectives for commodity programs along with potential policy instruments to achieve them are listed in Table 2. To achieve each objective, some public action may be needed to supplement the private market. Farm commodity programs currently attempt to serve each of these objectives, but each objective could be served more cost-effectively by commodity program *unbundling* or by other programs. Unbundling means separate programs for the environment, poverty and stability rather than combining all in a commodity program.

Family farm preservation would be served more cost-effectively by a direct payment program or credit program targeted to farms at risk. Food security would be served by a modest public buffer stock policy for wheat alone. The environment would be served cost effectively by conservation easements featuring government purchases of cropping rights (but allowing farmers to hay or graze land under “best management” practices). Easements, provided but never funded in the 1990 farm bill, focusing on the environmentally sensitive land could reduce program costs while targeting environmental problems. Environmental objectives are also served through programs of technical assistance by the Soil Conservation Service (SCS), chemical screening

by the Environmental Protection Agency (EPA), food safety by the Food and Drug Administration (FDA) and numerous other programs and agencies.

While commodity programs target food and family farm security and the environment, other objectives would be better addressed by other programs. An income-maintenance “workfare” program along with human resource development programs would better utilize public funds to alleviate poverty. Rural development would be targeted by human resource programs such as improved schooling, skill training and extension programs rather than by commodity programs. Economic efficiency, enhanced national income, low food plus farm budget costs and international competitiveness also are most effectively targeted, not by commodity programs, but by research and human resource development programs to improve farming technology and management.

Space limitation precludes full discussion of the consequences of each objective as — exhibited by the instrument pair in Table 2, but let us briefly examine only the first objective — family farm preservation. If the objective is to preserve family farms, a way to minimize production and capitalization distortions is to confine payments to the small segment of the farm population at risk of leaving the farm in mid-career. Confining payments to a few, financially vulnerable mid-sized family farms would improve their economic chances without threatening the economic vitality of efficient large farms receiving few payments and small farms depending mainly on off-farm income. Formidable problems are encountered in identifying that vulnerable segment, however. Treasury outlays

for payments are difficult to sustain in an era of budget stringency. Confining payments to a narrower base of farmers diminishes the votes to support transfers, and the effort could be criticized for preserving poorly-managed farms. These and other considerations condition any discussion of programs appropriate for specific objectives of policy.

Impact

How would targeting of funds more narrowly to financially vulnerable farms, the environment, and food security influence major participants in agriculture?

- **Farmers and Ranchers.** Targeting payments narrowly to financially vulnerable farms would require adjustments for

the many farms that would no longer receive payments. Removing federal funds for commodity price supports and supply management would reduce land prices until rates of return on land would return to levels before adjustments. A transition program could ease adjustment problems from depreciation of land values.

Table 2. Objectives and Instruments for Targeting Farm Policy.

Objective or Problem	Current Instruments	Public Instruments for Cost-Effective Targeting
Maintain family farms	Commodity program price and income supports, credit programs; disaster payments	Direct payments and other financial assistance targeted to farms vulnerable to failure
Food security (assured, adequate food supply)	Commodity program price supports, stocks, diverted acres; research and education; information systems; crop insurance	Wheat buffer stocks, research and extension, futures market education, information systems
Alleviate poverty	Commodity program price and income supports, welfare, schooling and training	Income maintenance (workfare) programs, schooling and training
Protect environment (soil conservation, protection of water and food from chemical contamination)	Commodity programs, including Conservation Compliance and Conservation Reserve Program; Soil Conservation Service (SCS); Environmental Protection Agency (EPA); Food and Drug Administration (FDA)	Conservation easements, SCS, EPA, FDA
Maintain rural communities	Commodity programs, rural development programs, schooling and training	Rural development programs of schooling and training, job development
Low food prices	Commodity programs, research and education, conservation	Research and education, conservation
International competitiveness	Commodity programs, including Export Enhancement Program (EEP), Market Promotion Program (MPP), research and education	Research and education

- **Agribusiness.** Agribusinesses that supply farm inputs and process, transport, store and sell food and fiber thrive on volume. A crop and livestock sector freed of production restraints would raise agribusiness employment and earnings.
- **Nonfarm Rural Population and Communities.** Targeting funds formerly used for commodity programs to support rural general schooling, vocational-technical training and other human resource development programs would raise living standards of rural people — whether they remain in their community or go elsewhere.
- **Consumers.** Targeting of funds now used for commodity programs to higher payoff uses depicted in Table 2 would increase farming efficiency. Additional productivity from greater investment in human resources, science, and an end to production restraints would hold down production costs to enable farmers to be more competitive in international markets. Consumer prices and food outlays also would be restrained.
- **Environment.** Targeting likely would shift government spending from transfer payments to environmental payments. Targeting would extend conservation compliance to all farmland from the half currently enrolled in commodity programs. Administrative and other public funds currently used to support commodity programs could be used to buy permanent easements on land with environmental hazards. Significant environmental gains are possible.
- **Taxpayers.** Lower outlays for commodity programs could be used to reduce the national debt or to fund high payoff investments. Devoting funds formerly for commodity programs to other programs listed in Table 2 would likely raise real national income.
- **Public at Large.** The public includes producers, consumers and taxpayers. From the public standpoint, the most efficient and equitable outcome may be to promote efficiency with markets and publicly supported research and education coupled with selected additional interventions to protect the environment and provide a safety net for the poor — a combination of targeted instruments in Table 2.

Conclusions

In conclusion, targeting can help public resources devoted to agriculture go further to meet objectives of farm policy. This may require *unbundling* of commodity programs. That is, commodity programs to address simultaneously the environment, poverty and instability in agriculture may need to be separated into specific programs uniquely targeting these concerns.

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Income Assurance and Green Payments Policy

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As indicated by the introduction to this series of papers, there are two main directions that the 1995 farm bill may go. These include the following:

- A continued evolution of policies and programs that retain the current commodity approach and date back to the 1930s.
- A major watershed revolution in policy that drops the commodity approach in favor of functional objectives.

Most farm bills, as with legislation in general, follow the evolutionary approach with incremental policy and program changes. This approach reduces the chances that a policy change will have a major destabilizing impact on the agricultural production sector, the associated agribusiness sector and the rural community infrastructure.

Periodically, however, new policy approaches surface that merit analysis as part of the policy-making process. The purpose of this paper is to describe and set forth what is known about the consequences of two policy options that represent substantially new farm policy approaches which includes either or both of the following:

- Revenue assurance
- Green payments

The consequences of new policy approaches are not always well understood and depend heavily on how they are implemented. Moreover, past experience indicates that while many claims are made about the merits of new approaches, their consequences are not always accurately predicted. It is possible, however, to at least surface the major issues regarding each option. There are also some general consequences that would appear to hold regardless of implementation strategy. Neither of these approaches need be a complete substitute for current programs. Elements of either or both could be incorporated into a farm bill in combination with modifications of the present program.

Revenue Assurance

Background

Revenue assurance programs would guarantee a certain level of gross income to participating

producers. Therefore, while crop insurance places an emphasis on yield and target price programs emphasize price, revenue assurance provides coverage for the multiple of price and yield (price x yield). It is referred to as revenue assurance (as opposed to insurance) because the implementation plan may or may not include charges for actuarially-determined program cost.

There are several different means of implementing revenue assurance — by commodity, for the whole farm, for current program commodities, with or without yield insurance and with or without the utilization of the options market. Contemporary revenue assurance proposals are not sufficiently specific to allow complete evaluation of their consequences without making assumptions regarding implementation.

Current Situation and Forces of Change

Revenue assurance is not new. Canada and its provinces have experience with both gross revenue

and net income assurance. In the 1985 farm bill debate, revenue assurance briefly surfaced as an alternative for discussion and analysis. In a contemporary context, the interest in revenue assurance has resulted from dissatisfaction with the operation of crop insurance and disaster payment programs (see *Natural Disaster Protection Policy*). Some advocates see revenue assurance as a way to reduce the complexity of farm programs, decrease the amount of regulation implied in programs, move further toward more market-driven production decision policies and reduce program costs. Like all policy proposals, careful study is required to determine if they can deliver what is being promised.

Issues

As discussed here, revenue assurance is treated in a generic context and not tied to any particular plan or proposal. As such, it is designed to address some of the major decisions that would need to be made in framing a revenue assurance program.

What combination of crops and/or livestock are to be covered by revenue assurance?

Commodity programs are not inclusive of all crops and livestock. Instead, Congress limited the coverage of price and/or income support programs to certain commodities which were designated as "basic" or "strategic." These program commodities currently include wheat, rice, feed

grains, cotton, milk, soybeans and peanuts. Federal crop insurance has been expanded over time to include a broader set of commodities including the price supported crops, various fruits and vegetables. Disaster coverage, from time to time and with increasing regularity, has been extended to an ever broader set of commodities from virtually all farm products to include those covered by crop insurance in addition to various nursery products, livestock and poultry. Because of the ever expanding scope of coverage by crop insurance and disaster payments, the question logically arises as to whether revenue assurance programs should be designed to protect revenue for the whole farm or only for certain crop and/or livestock enterprises. Three major commodity coverage options exist and are discussed in some detail below.

■ At the one extreme, income from all agricultural sources could be covered by a revenue assurance program. Payment decisions could be made based on average gross revenue from all commodities in a representative base period or on a moving average of past revenues. The effects of such a change in program concept are complex and difficult to analyze. For example, an incentive for diversification of enterprises is to spread risk. Thus, the incentive may be reduced by gross revenue assurance. In other words, specialization in the production of risky crops or livestock operations exhibiting economies of size may be encouraged. Moreover, more costly cultural practices that reduce risk may be discouraged. The

incentive to specialize or take on risky practices and, therefore, the magnitude of effect, depends on the level of revenue assurance provided. However, use of a moving average revenue base period could reduce these distortions since a producer's actions would affect future returns.

- At the other extreme, individual commodity coverage implies that decisions on eligibility for payments would be handled on an individual commodity basis. Individual commodity coverage would appear to hold little potential for simplifying farm programs although it would allow program provisions to be tailored to commodity uniquenesses. Such tailoring could scale level of income assurance coverage to the magnitude of risk involved in production thereby providing disincentives for farmers getting into risky situations.
- Revenue assurance could be provided only for a selected group of commodities such as all price and/or income supported commodities. This approach would tend to favor the production of the covered commodities relative to those not covered. The issue of whether commodities not covered by income assurance should have access to federal crop insurance or disaster assistance would remain.

At what level should income be assured?

The current price support program effectively guarantees producers the support price on a

portion of the farm's production potential as dictated by set-aside requirements and historical payment yields. The target price is paid only on the participating farmer's eligible acreage and on a yield per acre that has been frozen since the 1985 farm bill which is a form of decoupling. While revenue assurance is a new policy concept, the following options indicate similarities to issues surrounding current farm programs.

- Revenue could be assured at some fixed percentage (such as 70 percent) of a base period revenue for the farm. Provisions would need to be made for changes in enterprise mix, inflation, yield, productivity and new producers. For example, without adjustments for changes in enterprise mix, producer flexibility would be reduced as it is with the current base acre concept. In addition, for those commodities currently subject to price and income supports, adjustment would likely be necessary to account for revenue impacting implementation of those programs.

- Revenue could be assured based on a cost of production index or some percentage of the cost of production and a fixed or moving average yield. For example, the price for revenue assurance could be based on the U.S. average variable or cash cost resulting from USDA's cost of production survey. This level could be set on the theory that farmers should be assured of at least their out-of-pocket expenses. Yield coverage could then be based on the

average of their actual yield experience in the past five years, dropping the high and the low. Since cost of production varies regionally, by producer and is itself dependent on the level of yield, USDA's cost of production estimate would invariably be the subject of significant controversy and criticism.

- Revenue could be assured based on a specified price and a fixed or moving average yield. For example, the assured price could be some percentage of the expected market price at harvest and a moving average yield. USDA would estimate the expected harvest-time market price prior to planting. Substantial political pressure could be expected on the process by which the price is determined. The problem of establishing a yield for new producers would still exist although the price could be the same for everyone.

How should revenue assurance be paid for?

Many claim that revenue assurance would cost less than the current program. This is not necessarily true. Reducing cost implies either a lower level of protection or shifting costs from the government to the producer. Many proposals for revenue assurance provide little insight into either expected level of program costs, which are exceedingly difficult to estimate or the distribution of costs. The following options are designed to cover the spectrum of possibilities.

- Plans that explicitly separate yield and price protection appear to assume that the producer would pay for the cost of yield insurance. For example, it could be mandated that all producers who desire price protection purchase yield replacement insurance from the private sector and bear the cost of that insurance. The government could then bear the cost of price assurance as is done with the current target price program. If lower levels of government costs are to be achieved, lower levels of price and income support than currently exist are implied.

- Plans that assure gross revenue without explicitly separating price and income appear to assume that the government would cover the full cost of such protection. Savings attributed to some such plans appear to be based on the presumption of an offsetting effect of price and yield. That is, when yields are low, prices are high. While such reasoning may hold true in the aggregate, it does not necessarily hold for individual producers. That is, an individual's yield and price received are not necessarily inversely correlated. Moreover, with U.S. market prices being increasingly determined by world market conditions, U.S. production has less impact on market prices. Therefore, the positive price response to low yield and vice versa may not be as great as historically suggested.

Consequences

While very much influenced by the specifics of an income assurance program and how it is implemented, some general consequences can be specified.

- All income assurance plans appear to employ a concept of full production. Total production would expand as land is released from the conservation reserve program (CRP) and as set-aside programs are discontinued. Incentives for expanded production would be offset, somewhat, by the effects of budget-driven reduced levels of support.
- Income assurance programs are often credited for their positive environmental impacts compared with the current program. The basis for such statements appear to involve reduced incentives for maximum production, less use of purchased inputs such as fertilizer and pesticides and greater flexibility to plant alternative crops. The degree of flexibility could depend on whether income assurance is provided on an individual commodity, on an aggregate (gross income) basis or for a specified set of crops. The impacts on the use of purchased inputs depends on the combination of the level of income assurance and the total acreage farmed. If total acreage is expanded sufficiently, purchased input use could increase even though the level of support is reduced.

- Income assurance could increase the production of higher risk crops and production systems relative to lower risk crops. Therefore, dryland production could be increased relative to irrigated production and vegetable production could be increased relative to lower risk field crops.

Green Payments

Background

Green payments or stewardship payments could replace contemporary government expenditures on price and income support programs with payments to farmers for engaging in specific best management and cultural practices that conserve soil, enhance water quality, promote wildlife and/or protect endangered species. Some environmental and sustainable agriculture interest groups have proposed that a significant portion of traditional commodity program funds be shifted to address environmental and food safety concerns in agriculture. Others might suggest that this is currently being done through the combination of conservation compliance provisions tied to program benefits and through CRP.

Green payment proposals more closely approximate subsidies provided producers under the Agriculture Conservation Program (ACP) designed to establish soil conserving practices, increase fertility and improve productivity. However, green payments would likely be available for a broader set

of specific practices that protect or improve the environment, worker safety and/or food safety. Specific practices for which payments could be available might include the following:

- Fencing off riparian zones (streams) from livestock.
- Restoring and retiring wetlands from production.
- Purchasing permanent easements on environmentally sensitive cropland or pastureland.
- Developing and implementing nutrient management plans.
- Constructing terraces and related conserving practices.
- Constructing animal waste containment and utilization systems.
- Farming without the use of pesticides or following integrated pest management programs.
- Implementing crop rotations and planting conservation cover crops.

Issues

Such a major shift in the objectives of domestic farm programs from a focus on stable, affordable, abundant food and fiber to more environmental objectives raises additional issues including the following concerns:

- What level of incentive payments are required to

induce farmers to adopt environmentally sound yet nonincome enhancing practices?

- How would these sets of practices be derived and what level of monitoring would be required to verify their use?
- Would payment limitations apply to stewardship payments? Would farm size restrictions be imposed?
- Would acceptance of this type program be linked to current debate over private property rights and the "takings" issue with respect to environmental regulation?
- How would the geographic distribution of contemporary farm program payments change with stewardship payments?

Consequences

Green payments compensate farmers for the higher costs of production embodied in specified environmentally friendly practices. Many of the practices embodied in green payments could ultimately end up being required under law. If there is a likelihood that these practices will be required, why might farmers resist these subsidies? Part of the answer lies in the impacts of green payments on farm price and income stability as well as on the geographic distribution of payments. By eliminating traditional price and income programs, instability would increase.

The distribution of program benefits would move to those

regions perceived to have the greatest environmental problems. These regions are not necessarily the areas that produce most of the program crops, which currently receive most of the direct benefits from deficiency payments and the nonrecourse loan program. Regions receiving the direct benefits of current programs will resist giving them up.

Livestock producers could be direct beneficiaries of green payments since many of the environmental concerns relating to clean water are related to control of animal wastes. Waste management control costs will likely be incurred either directly through regulatory procedures or indirectly through litigation so that livestock producers may initially appear to be better off under a green payment program.

Green payments may be one alternative for maintaining international competitiveness in the absence of price and income supports while, at the same time, dealing with environmental issues. By offsetting higher unit costs with environmentally targeted subsidies, international market competitiveness would be less likely to suffer although the quantity of crops available for export could decline because of current program subsidies being discontinued. At the same time, green payments probably would be less vulnerable to challenges under the provisions of GATT.

Subjecting green payments to the payment limitations rule could undermine achievement of highly desirable environmental goals. Large green payments to large-scale farmers would probably be no more politically viable than large commodity program payments. However, payment limits for environmental practices would

likely increase the pressure for stringent regulation approaches to environmental problems associated with production on large-scale farms.

If the purpose of green payments is to compensate farmers for the resulting higher unit costs of production, more study is needed of the relationship between the benefits of specific practices, yields and costs. Without this knowledge, it would be impossible to develop an equitable system of green payments. At the same time, it is obvious that environmental regulation of farming and farming practices continues to increase and similar studies are needed to determine the impacts of these regulations on yields, costs and prices.

Concluding Comments

While major changes in policy seldom occur, it is important to acknowledge the potential for change and its consequences. Pressures for new program approaches arise from those who are interested in lowering program costs or in making agriculture more environmentally friendly.

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The Conservation Reserve Policy

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The Conservation Reserve Program (CRP) was instituted by the 1985 farm bill. The CRP is a voluntary land retirement program wherein croplands considered highly erodible or otherwise environmentally sensitive plus, have appropriate cropping history may be enrolled. Most contract holders receive annual payments for a ten-year period for planting cropland to a conserving use and maintaining these lands in a conserving use. Farm operators have bid nearly 36.5 million acres of cropland into the CRP. In addition, CRP contract holders receive \$1.8 billion in payments annually.

The ten-year CRP contracts will begin expiring in late 1995, and policymakers' interest is now focused on the future uses of these CRP lands.

Background

The primary objective of CRP under the 1985 farm bill was the reduction of erosion on cropland. Secondary objectives include the following: 1) protect the long-term capacity to produce food and fiber; 2) reduce sedimentation; 3) im-

prove water quality; 4) create fish and wildlife habitat; 5) curb production of surplus commodities; and 6) provide farm income support.

Land owners and operators submitted per-acre bids to county Agricultural Stabilization and Conservation Service offices. Bids less than or equal to the maximum acceptable rental rates set for the county were accepted. Most successful bidders realized returns to fixed resources from CRP payments which were equal to or more than those returns that would have been realized from continued crop production.

However, the 1990 farm bill changed the focus and the management of CRP. New land eligibility criteria, beyond just highly erodible cropland, were specified. Now, eligible were croplands devoted to filter strips and other easement practices in state water quality areas, in established conservation priority areas, within established wellhead protection areas and within areas subject to scour erosion. To implement this new policy, the bid acceptance process was changed. The new CRP bid acceptance process was designed to select lands offering the highest conservation and environmental benefits based on an

Environmental Benefits Index (EBI), relative to the government costs of enrollment. The conservation and environmental goals embodied in the EBI were surface water quality improvement, potential ground water quality improvement, preservation of soil productivity, assistance to farmers impacted by conservation compliance, tree planting, enrollment in hydrologic unit areas and enrollment in established conservation priority areas. CRP bids were subjected to a two-phase acceptance process as follows:

1. The first phase established a bid maximum for each tract of cropland bid.
2. If a bid did not exceed the bid maximum specified for the particular tract and if the total acres to be enrolled in the bidding period were less than the acres in the eligible tracts, then CRP bids with the highest EBI relative to contract cost were accepted.

Acres limits set for each CRP bidding period determined the lowest benefit index to cost ratios accepted.

Current Situation and Forces for Change

Signals about the future of CRP are unclear. No appropriations have been provided for new enrollments since the 1992 bidding period. Various interest groups have come forth with resolutions supporting the extension of CRP contracts under existing legislation and for the continuation of CRP in some form under new legislation. In contrast, others have stressed the high government cost of CRP and have argued that other programs such as the agricultural conservation program (ACP) are more cost effective. For the CRP payments entered into under authority of the 1985 farm bill during the 1986 through 1990 period the average annual per acre payment is nearly \$49 per acre for the nearly 34 million acres enrolled. Under the 1990 farm bill, the average annual per acre payment was nearly \$60 for the 2.5 million acres enrolled in the 1991

and 1992 bidding periods. Of the 23.3 million acres of crop acreage base in escrow, 10.8 million are wheat base, 4.3 million acres are corn base, 2.8 million acres are barley base, 2.5 million acres are grain sorghum base, 1.4 million acres are upland cotton base and 1.8 million acres are oat crop acreage base.

The Northern Plains, Southern Plains and the Mountain Regions account for 60 percent of the CRP acreage. However, as anticipated by the architects of the revised program specified in the 1990 farm bill, its emphasis on water quality shifted CRP participation away from the Plains and Mountain regions to the Corn Belt and Lake States.

Most CRP contract holders were given a choice of the conserving use that was established on the CRP lands. Grass cover is the predominant conserving use (Table 1).

Practices such as filter strips, wildlife habitat improvements, field windbreaks, shelterbelts and living snow fences have been used sparingly but do provide significant environmental benefits. However, even wildlife habitat under the 1985 farm bill was primarily grass in many states. Only under the 1990 farm bill were

trees and shrubs required wildlife habitat plantings. The likelihood of tree, shrub and wildlife plantings being kept out of annual crop production after the expiration of CRP contracts may be greater than the likelihood of retaining CRP acres in grass cover. Based on the Soil Bank program experiences of the 1950s and 1960s, the tree plantings which are concentrated in the Southeast and the Delta may be expected to remain at least until the tree stands mature.

The 1990 farm bill provides authority to extend CRP contracts for a period up to 10 years. Currently, a USDA Interagency Task Force is working to identify those CRP lands that need to remain in conserving use. CRP contracts which are extended could be carefully targeted. As a consequence, payments could cease on many CRP contracts at the end of their original 10-year contract periods. Under current law, contract holders would no longer be obligated to maintain a conserving use on their CRP acres upon expiration. The USDA has identified the lands leaving CRP upon contract expiration by specifying the number of CRP acres no longer under contract after the tenth annual payment is received in that year. These estimates are listed in Table 2.

Table 1. Conserving Uses on Conservation Reserve Program Lands

Type of Conserving Use	Acres of CRP (Millions)	Percent of Acres
Grass	31.83	87.4
Trees	2.37	6.5
Wildlife Habitat	1.97	5.4
All Other	0.25	0.7
TOTAL	36.42	100.0

Table 2. Acreages Leaving CRP, by year

1995	.....	2,043,000 acres
1996	.....	13,670,000 acres
1997	.....	8,756,000 acres
1998	.....	5,355,000 acres
1999	.....	4,098,000 acres
2000	.....	475,000 acres
2001	.....	998,000 acres
2002	.....	1,027,000 acres

Without additional legislation, most contract holders will have the option to return CRP lands to annual crop production (under an alternative conservation system if the lands are potentially highly erodible) and to retain the lands in a conserving use. Appropriations have been provided for one provision of the 1990 farm bill so that CRP contracts in place prior to the 1990 farm bill with grass and legume cover can be converted to hardwood trees, windbreaks, shelterbelts or wildlife corridors, and contracts extended from 10 to 15 years with up to five additional CRP payments. To date, this program has only attracted 12,000 acres nationally. Also authorized under the 1990 farm bill was an option for cropland base and allotment protection without additional CRP payments. Preliminary implementation rules indicate base protection may be available for up to five additional years. A final option authorized contract extensions up to 10 years and/or the purchase of long-term or permanent easements during the 1996 through 2000 calendar years on those CRP lands that need to remain in conserving uses according to USDA determinations. Determinations relative to the last option are evidently in process. However, appropriations authority would be needed to make this option a reality.

Issues

CRP issues reflect the diversity of interests in CRP which could, in turn, affect the nature of coalitions required in the Congress to extend, modify or terminate CRP.

- **What options will the CRP contract holders have at contract expiration?** Under current statutory authority the meaningful options for most contract holders is to return these lands to uses which offer positive net returns to the land resource and other factors of production fixed to the farm. Of course, this limited set of choices does not necessarily coincide with the wishes of all who desire to continue the environmental improvements or the reductions in supplies of agricultural commodities achieved under the current CRP program.
- **What are the environmental effects of terminating CRP?** Soil erosion reductions were estimated to be an average of 19 tons per acre per year on the acres enrolled in CRP. In addition, wildlife benefits are often evident on CRP lands. Likewise, municipalities in certain areas have benefited because of less sedimentation in their domestic water supplies.
- **What would the effects be on rural communities?** Although the net adverse economic impact of CRP on rural economies was negligible when viewed at the national and state levels, certain sectors of the rural economy experienced reduced economic activity subsequent to CRP enrollment. Firms most impacted were input suppliers and the handlers of agricultural commodities. Such firms may not support policy alternatives which would compensate producers who maintain their cropland in a

conserving use. Additionally, all policy options will be thoroughly evaluated for their federal budget exposure by interest groups concerned with reductions in government expenditures.

- **What impacts would retaining CRP have on stocks of agricultural commodities?** Some believe that grain stocks are already too low while some may view CRP as holding stocks in the form of standby production capacity. Of course, this acreage conservation reserves (ACR) are set-aside acres. ACR allows for annual adjustment in stock levels. Some producers advocate low stocks as a means of raising prices while others suggest that CRP had no impact on stocks because it simply lowered ACR and, therefore, substituted for CRP.

Policy Alternatives and Consequences

No CRP Extension

Without an extension of the CRP contracts, the post-contract land use alternatives include the following: 1) to return the land to annual crop production, 2) to leave the grass or grass/legume cover for haying and grazing and 3) to leave land in a conserving use such as a windbreak, wildlife planting or trees or to convert grass/legume cover to hardwood trees, windbreaks, etc.

The key to evaluating the economic consequences of not extending the CRP contracts are the intentions of the CRP contract holders. A host of surveys have addressed contract holders' intentions. Two sets of estimates of the intentions of CRP contract holders crop production have been made at the national-level by USDA production regions. Both sets of estimates were developed in 1990, one by participants in an American Agricultural Economics Association (AAEA) symposium and another through a producer survey conducted by the Soil and Water Conservation Society (SWCS). These estimates are reported along with regional CRP enrollments (Table 3). Especially in the latter set of estimates, the demographic characteristics of the contract holders were found to be correlated with the post-contract intentions for CRP lands.

Based on the SWCS-estimated contract holder intentions and the scheduled CRP contract expirations, the economic consequences of these lands returning to those uses identified by contract holders were estimated. Crucial to such

estimation are the assumptions relative to economic conditions and government commodity policy. Inflation was assumed to continue at the current annual rate of approximately 3 percent. It was assumed that commodity target prices will be held constant in the 1995 farm bill. Therefore, real target prices would fall substantially during the five-year period of the bill.

The major impact of not extending CRP will be that at least 50 percent of the CRP lands will return to annual crop production. In comparison to the current situation with nearly 36.5 million acres in CRP, the following impacts will be experienced:

- An increase of 15.2 million acres in major crops; 1 million more acres in ACR, and 2.0 million more acres in summer fallow.
- Somewhat lower crop and livestock prices compared to what they would be if all CRP land remained in conserving use; wheat and feed grain prices might decline by 5 to

6 percent in the 1997 to 2000 period.

- Lower food costs with a family of four spending about \$1 a week less for food.
- An increase in deficiency payments of about \$1 billion per year in the 1997 through 2000 period due to lower market prices for commodities; with time and market adjustments, a decline in deficiency payments to about \$0.3 billion above current levels.

The overall impacts of allowing the CRP contracts to expire without any extension are not as severe as some interest groups might anticipate. However, impacts on regions such as the Great Plains, where much CRP land is concentrated, could be substantial. There would be adverse impacts on agricultural commodity prices especially if set-aside or acreage reduction program requirements were not increased above current levels. Wheat and corn prices would be most adversely affected. These impacts would tend to diminish with longer term market adjustments. However, input suppliers, first handlers and consumers would benefit. The federal budget exposure would be reduced by the termination of CRP payments but not by a full \$1.8 billion annually as deficiency payments would initially increase by \$1 billion and then decline to lesser levels. Of course, there would be environmental costs such as the loss in wildlife habitat and an increase in soil erosion. However, the degree of which will depend on post-contract land uses and the management practices employed.

Table 3. CRP Enrollment and Estimates of Contract Holders' Intentions to Return Lands to Annual Crop Production, Under a No-Contract Policy.

Region	CRP Acres (millions)	Percent to Crops (AAEA)	Percent to Crops (SWCS)
Northeast	0.23	26	36
Appalachian	1.16	51	49
Southeast	1.69	16	17
Delta	1.25	28	14
Corn Belt	5.60	64	59
Lake States	3.01	70	73
N. Plains	9.66	64	51
S. Plains	5.34	66	50
Mountain	6.69	47	50
Pacific	1.79	59	85
U.S.	36.42	53	52

Extend CRP

The other major alternative is to extend CRP. A USDA Inter-agency Task Force is evaluating the economic and environmental impacts of extending the CRP contracts another 10 years and/or the purchase of easements on CRP lands. Either of these two methods of extension would require appropriations authority.

A major emphasis of the analyses related to CRP extension has been on the identification of an appropriate selection criterion to identify contracts to be extended. ERS/USDA examined the benefits and costs of retaining five million acres in CRP using four different choice criteria. The choices included the following objectives: 1) minimize rental costs; 2) maximize erosion reduction per dollar of government costs; 3) maximize the current EBI per dollar of government costs; and 4) maximize a revised EBI per dollar of government costs.

The current EBI incorporates surface water quality improvement, potential ground water improvement, preservation of soil productivity, assistance to farmers impacted by conservation compliance, tree planting, enrollment in hydrologic unit areas and enrollment in established conservation priority areas. The revised EBI expands on the current index by adding variables to capture the impacts of reducing the offsite cost of wind erosion, retaining wildlife habitat and reducing commodity program deficiency payment exposure.

The criterion to minimize cost would create a budget exposure of \$107 million per year in 1993 nominal dollars (Table 4). In increasing order of budget exposure, the three remaining criteria

Table 4. Economic and Environmental Estimates for Alternative Selection Criteria to Retain Five Million Acres.

Economic/Environmental	Selection		Criteria	
	Minimize Cost	Maximize Erosion Reduction	Current EBI	Revised EBI
Total Rental Cost (million \$/year)	106.6	142.5	234.7	187.1
Average Rental Cost (\$/acre/year)	21	29	47	38
Average Erosion Reduction (tons/acre/year)	24	53	36	32
Average Erodibility Index	33	33	65	60

are minimizing erosion dollar cost, the current EBI, and the revised EBI. Erosion reduction is greatest under the criterion to maximize erosion reduction per dollar of government cost (Table 4).

The criterion used to select CRP acres for retention makes a difference in the environmental benefits realized and in the costs of the program. The tradeoffs between the two elements of each criterion will be weighed in the political process.

Another consideration in the selection of a criterion for CRP contract extension would be the geographic distribution of the acres retained in CRP under alternative criteria. Under most criteria, the ten-state Great Plains area would be the major benefactor. Some 94 percent of the first five million acres retained under the minimum cost criterion would be in the Great Plains. Likewise 93 percent of the first five million acres of CRP retained under the maximum erosion reduction criterion, 62 percent under the revised EBI and 34 percent under the current EBI would be in the Great Plains.

The debate on the future uses of CRP is becoming more intense. All interested parties are advised to acquire and study analyses of policy alternatives as these become available. As with all policy changes, specific interests would be served better by some alternatives than by others.

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Conservation Compliance Policy

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Background

Conservation compliance, as part of the highly erodible land (HEL) conservation subtitle of the 1985 farm bill, requires that all HEL be cropped according to a USDA-approved conservation plan for operators to retain eligibility for USDA commodity programs and benefits. The 1985 law required that conservation plans be developed for all highly erodible land by 1990, with all plans fully implemented by January 1, 1995. The 1990 farm bill added provisions for graduated penalties assessed for "good faith" violations of conservation compliance and added land that is set-aside to the acreage that must be protected under a conservation plan.

While the conservation reserve program (CRP) received widespread support, conservation compliance was not a popular concept among lawmakers or other interest groups. According to the Senate agriculture committee, conservation compliance was included in the conservation title of the 1985 law as a mechanism to hold down the cost of implementing the CRP program. It was believed that the costs of erosion control requirements for highly erodible land would cause such

acres to be bid into the reserve program at a lower per acre price.

After considerable debate about the definition of highly erodible land and with resolution of definitional inconsistencies between the CRP and HEL provisions in the title, HEL subject to compliance was defined as any cropland acres with an erodibility index of eight or greater (EI8+ cropland). The erodibility index is a ratio of the inherent erodibility of a soil unprotected by any ground cover or conservation practice to the soil's erosion tolerance level (T value or the maximum level of erosion that can be sustained without adversely affecting productivity). The 1982 national resources inventory (NRI) indicated approximately 118 million acres of EI8+ cropland. A cropland field was defined as HEL and subject to compliance if at least one third of that field was HEL, or if the field contained 50 or more acres of HEL.

The requirements for acceptable conservation plans have changed since implementation of conservation compliance began. Originally, the plans were to require practices which would reduce soil erosion to the soil's T value. This is the requirement of the sodbuster provision. As implemented, however, conservation compliance plans are acceptable if they include practices that

will result in a significant reduction of erosion without placing undue financial burdens on the producer. Plan approval is decided by the Natural Resource Conservation Service (NRCS) field offices.

Current Situation and Forces of Change

Approximately 27 million acres of EI8+ cropland have been enrolled in the CRP. The remaining 91 million acres have required the development and full implementation of a conservation plan by January 1, 1995. The 1982 NRI showed that approximately 35 million acres of EI8+ cropland were being managed so that erosion was at or below T value. While these acres require a conservation plan and if erosion control has continued, additional conservation practices should not be required. The remaining 56 million acres have required a conservation plan as well as the application of conservation practices.

Acreage figures used by NRCS¹ to report conservation planning efforts include total field

acres treated. For example, NRCS has reported all of a 100 acre field which contains only 40 acres of E18+ soil. Based on this procedure, NRCS estimates that 98 million acres are being adequately protected under fully-implemented conservation compliance plans. Plans are expected to be fully implemented on an additional 40 million acres by the end of 1994. NRCS estimates that erosion on affected acres has declined by 50 percent relative to pre-1986 rates.

The Farm Service Agency (FSA) has indicated that a limited number of landowners have decided to forgo farm program benefits (participation) to avoid compliance requirements. Eligibility for disaster assistance, as well as other program benefits, has likely been a critical factor in farmers' decisions to satisfy conservation compliance requirements. From 1986 through 1993, USDA payments to farmers from all sources have averaged \$11.5 billion per year. Given current estimates of commodity prices and production, government payments to farmers are expected to average \$8 to \$10 billion per year over the next several years. Although it is possible that higher commodity prices or reduced government support of agricultural incomes could result in a larger number of landowners abandoning program participation and conservation compliance, studies indicate that incentives for program participation are still strong.

Crop residue management has been an important component of conservation systems. As much as 75 percent of the acreage requiring conservation plans is being protected using some form of residue management, including cultural or rotational modifications to cropping practices. Where plans

have not been fully implemented, farmers may be delaying required structural practices due to costs involved. As noncomplying producers seek technical and financial assistance for implementation of structural practices, resources will be strained and farmer dissatisfaction are likely to grow. Along with this, the number of violation reports will also increase.

Based on a 1991 audit, the USDA Office of Inspector General concluded that 10 percent of the tracts in their audited sample were not yet in compliance with requirements in their conservation plans. According to a more recent report from the Center for Resource Economics (CRE), 1991 Soil Conservation Service (SCS) status reviews found only 1.6 percent of tracts not actively applying their plans, and in 1992 2.5 percent of tracts were not in compliance. Additionally, the report concluded that, since 1986, 42.9 percent of all benefits denied farmers as a result of HEL violations (sodbuster and conservation compliance) were reinstated upon appeal. The CRE conclusion was that USDA has not been adequately enforcing conservation compliance. CRE and other critics question USDA's resolve to implement the policy, the effectiveness of its monitoring and enforcement and the veracity of its claims that only a tiny fraction of farmers failed to actively apply conservation compliance plans.

CRP contracts begin expiring in October 1995 unless the federal government chooses to extend some or all of the contracts. A conservation plan will be required for CRP acres that come back into production with an EI of eight or higher. The plans must be fully implemented prior to planting a commodity crop unless structural

practices are required. Producers farming land requiring structural practices would have up to 2 years following CRP contract expiration to fully implement the plan.

With its current emphasis on developing conservation compliance plans and assisting with implementation of plans, NRCS has been unable, in most counties, to continue its overall resource management program responsibilities. NRCS has become a cropland management agency in most counties and rangeland, pasture, urban and wildlife programs have suffered.

There is growing interest in total resource management (TRM) planning as reflected in the English Bill (HR 1440, 103rd Congress), which outlined a role for NRCS in coordinating the development of such plans. Currently, NRCS lacks the expertise and resources to do the plans alone. It remains to be seen whether NRCS will be able to coordinate activities with other state and federal agencies to assure the development of credible TRM plans for all farm operations.

Extending the conservation compliance requirement to a "whole farm compliance" requirement has been suggested. This broadens the conservation compliance approach so that, presumably, a TRM plan would be required of all landowners or operators who farm with or near fragile resources and wish to participate in farm programs. It is not clear whether all farms would be affected or just those with HEL, those close to surface water or in critical watersheds or those potentially affecting ground water resources. In addition, whether farm program participation is tied to TRM and this broader array of resource problems remains uncertain.

Agricultural interests are likely to oppose such a proposal since it could be viewed as imposing additional costs upon and limiting the flexibility of agricultural operations.

Discussion of a green payment program has combined aspects of total resource management and whole farm compliance (see *New Policy Approaches* leaflet). Considerable interest has been expressed in a program which would provide payments to farmers and ranchers who adopt production practices aimed at resource conservation and environmental protection. Therefore, the green payment program might replace existing price and income support programs. Whether payments would be made for the adoption of individual management practices or for the adoption of a whole-farm management plan would be an important implementation issue affecting the extent of environmental benefits obtained.

Policy discussions in the 1985 farm bill were driven by concerns about soil erosion and surplus crop production, due partly to expansion of crop production onto more fragile and marginally productive acres during the late 1970s and early 1980s. In 1990, soil erosion and water quality concerns were central to agricultural policy debates. Today, however, soil erosion concerns are less pressing, partly because of the successes of CRP and conservation compliance. Attention has turned to water quality issues, wetlands protection, private property rights and the future of CRP lands. Commodity reserves are at their lowest level since the early 1970s.

The political climate has changed considerably. Key positions in congress on critical committees and subcommittees

have been vacated by strong agricultural supporters. Those positions are now held by individuals with less seniority and less knowledge of agricultural concerns. Environmental interests have suggested that EPA should play a stronger role in addressing pollution issues which arise from agricultural activities. As critical environmental legislation, such as the Clean Water Act, is debated and reauthorized, agriculture will likely be directly affected. Therefore, the farm bill may not continue as the central legislation directing resource management decisions in agriculture.

Issues

Effectiveness

The impact of conservation compliance on erosion is not known with certainty, as no records of preprogram erosion and erosion reductions have been maintained. Erosion control goals vary widely across individual situations. In addition, it is not known how a movement toward a more market-oriented commodity program or higher commodity prices might affect compliance since little is known about the distribution of HEL across land owned or operated by program participants. What will happen to erosion control efforts if participation in farm programs drops?

Implementation

As the deadline for full implementation of compliance plans nears, questions have arisen about how FSA will handle last minute requests for technical and/or financial assistance by farmers

who have delayed application of conservation practices. USDA resources may also be strained as CRP contracts expire, and HEL owners seek assistance with required conservation planning. In addition, suggestions that NRCS lead the implementation of a TRM effort place a burden on existing resources. As budgets and staff shrink and demands for assistance grow, how will USDA handle conservation compliance in either its current or some modified form?

Enforcement

The willingness and ability of USDA to adequately monitor and enforce compliance with HEL conservation requirements have been questioned. Those who are dissatisfied with USDA's performance relative to enforcing conservation compliance may be unwilling to allow a whole-farm planning program to remain within the purview of USDA. Is there a role for EPA, traditionally a more regulatory agency, in addressing such problems?

Political climate

The political climate and conservation priorities have shifted since the 1985 and 1990 farm bills were passed. These changes, combined with changes in congressional leadership, could lead to a more regulatory approach for dealing with natural resource issues in agriculture. However, some type of green payment program could gain wide support if it is perceived as an alternative to increasing regulation. Would a green payment program, which would replace the existing conservation compliance program, be more effective in addressing

protection of highly erodible land and other natural resources?

Policy Alternatives and Consequences

Maintain status quo

One option is to continue implementation of conservation compliance as currently designed. Status reviews by FSA decisions on receipt of benefits would continue. Conservation plans for E18+ CRP acreage would be prepared and implemented as the acreage comes out of CRP.

Continuation of conservation compliance in its current form would have several consequences. First, in some areas, NRCS will not be able to return to a broader-based program until all CRP contracts have expired. Farmers and ranchers in some areas who do not have HEL would continue to receive limited assistance from NRCS. Urban and community programs would also continue to be restricted. Second, without a significant change in record-keeping procedures and/or the way status reviews are conducted, FSA can expect continued criticism of their implementation and enforcement of conservation compliance. Continued reductions in soil erosion can be expected although measurement of those reductions cannot not be translated directly into reductions in off-site costs of erosion. Broader environmental concerns would not be addressed without additional resources. If farm program benefits decline in value to producers, then less participation in conservation

compliance might occur and environmental benefits would be reduced.

Retain structure of conservation compliance but intensify enforcement activities

Increased enforcement of compliance requirements could result from increasing the number of status reviews conducted annually and bringing in non-USDA reviewers to deflect questions of conflict of interest. However, additional financial resources would be required. The number of violations discovered would likely increase. A larger number of farmers and ranchers would be affected and ill will between producers and FSA would grow. The number of appeals to FSA would increase, thus causing a greater workload for responding to appeals. Erosion control would likely increase over time with noncomplying farmers being identified and brought into compliance. However, stricter enforcement could influence some producers to abandon farm program participation in order to avoid compliance requirements. Then, environmental gains would be reduced.

Expand program to whole-farm TRM compliance

Under such an alternative, whole-farm planning for environmental protection would be required as a prerequisite to farm program participation. To implement such an option, increased funding would be needed. In addition, sufficient time for planning and compliance would be

required to assure effective comprehensive farm planning.

NRCS is not likely to have the necessary expertise for assisting farmers with whole-farm plans, so cooperation between federal, state and local agencies would be required. Involvement by private industry in developing farm plans and providing technical assistance to farmers could ease government costs. The issue of certification of participating private consultants would have to be addressed. If the needed leverage is in place (sufficient number of owners of fragile land or land affecting fragile areas participating in farm programs), environmental benefits could be high. An expanded compliance requirement would increase the likelihood that some farmers would choose to withdraw from farm program participation.

Implement a green payment program

Such a program would involve payments to farmers for implementing conservation and environmental protection practices on either a whole-farm or individual-practice basis. The green payments would replace existing income and price support programs. For participating farmers and ranchers, overall environmental impact would be positive. In addition, farmers and ranchers not currently participating in farm programs could be brought into the program so that environmental benefits would extend over a larger area.

Additional resources would be needed by NRCS if it retained primary responsibility for technical assistance to farmers and ranchers receiving green payments. Private agricultural consultants, as well as agricultural input dealers, would

realize new opportunities for working with farmers and ranchers in the development of resource management plans. Involvement by private industry would ease pressures on SCS. A successfully implemented green payment program could delay or prevent additional environmental regulations affecting agriculture. The net effect on government cost is unclear since the cost of green payments would substitute for the discontinued price and income support payments. However, price and income stability would be reduced if existing programs are ended. Distribution of payments

would also differ from that of current USDA payments. For further discussion of the green payment option, see the *New Policy Approaches* leaflet.

Reference

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'New USDA organizational terminology is used throughout this leaflet. Therefore, the Soil Conservation Service (SCS) is consistently referred to by its new name, the National Resource Conservation Service. This reference to NRCS also refers to its predecessor organization SCS. Likewise the county level reference to the Farm Service Agency refers to the combination of SCS and ASCS in the new USDA organizational structure.

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Wetlands Policy

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Background

U.S. wetland policy has evolved through three phases as follows:

■ **Wetland as wasteland.**

Initially, wetland was thought to be unproductive, as well as a nuisance and a health hazard. In the Swampland Acts of 1849, 1850 and 1860, Congress granted 64.9 million acres of wetlands to 15 states in exchange for state promises to drain and convert them to farmland. The Reclamation Act of 1902 and the 1944 Federal Flood Control Act involved USDA and the U.S. Army Corps of Engineers respectively in programs to promote wetland conversion. Other federal policies provided USDA cost-sharing for drainage, tax laws allowed expensing of drainage costs, and farm commodity programs encouraged expansion of production.

■ **Conflicting signals.** During the 1940s and into the 1970s,

messages to swampland owners became mixed following adoption of policies that encouraged wetland protection. By 1962, USDA cost-sharing was eliminated for certain classes of wetland. The Water Bank Program (implemented in 1972 in 10 states) was the first USDA effort to encourage protection of wetlands. Federal Water Pollution Control Act Amendments in 1972 regulated discharge of dredge and fill material into navigable waters. Executive Order 11990 (1972) stated that U.S. agencies should not be involved in any development activities that encouraged wetland conversion and by 1978, drainage cost-sharing had been eliminated.

■ **Wetland protection and restoration.** Changes in policy encompassed in the 1985 farm bill were followed in 1986 by tax reform, in 1988 by campaign promises to stop the loss of wetlands and in 1990 by further changes in the farm bill. Taken together, they eliminated many of the conflicting signals from policies affecting wetlands and slowed conversion.

Current Situation and Forces of Change

There are roughly half as many wetlands in the contiguous 48 states as 200 years ago. The rate of conversion was about 105,000 acres per year between 1987 and 1991, down from 500,000 acres annually between 1954 and 1974. Six federal agencies are primarily responsible for about 25 laws that allow regulating, acquiring or using incentives to protect wetlands.

"Swampbuster" provisions of the 1985 Food Security Act eliminated USDA farm program benefits for crops grown on wetland converted after 1985 by tying farm program benefits to compliance with wetland protection measures. Swampbuster was continued by the 1990 farm bill with modifications including changing of the initiation of swampbusting from the time the

crop is planted to the time when conversion makes possible the planting of a crop, expansion of program benefits lost with swampbusting and allowance for mitigation in certain circumstances. The Tax Reform Act of 1986, although not a wetland policy per se, eliminated preferential treatment of capital gains and put restrictions on expensing farm drainage investments.

The wetland reserve program (WRP) enacted in the 1990 farm bill, provides incentives to restore cropland converted from former wetland. Cost sharing and payments for easements go to farmers who return converted wetland to its former wetland state on a permanent or long-term basis. Nine states were eligible for WRP funds in 1992 including California, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New York, North Carolina and Wisconsin. Nearly 50,000 acres were enrolled in the WRP in 1992 at a total cost of \$46 million. However, no funds were appropriated in 1993.

In 1994, regular WRP enrollment resumed in twenty states with the addition of Arkansas, Illinois, Indiana, Kansas, Nebraska, Oregon, South Dakota, Tennessee, Texas, Virginia and Washington. WRP is funded at \$66.7 million for 1994, which is enough to enroll an additional 75,000 acres. In the 1995 budget, developments suggest further increases in budget support for retiring wetlands.

Much of the wetland controversy in recent years has focused on definition and delineation. Mainly there is disagreement concerning evidence of three wetland characteristics (soils, hydrology and vegetation) needed to identify an area as a wetland. Wetland regulated under sections 401 and 404 of the Clean Water

Act currently are identified using technical criteria in the 1987 Corps of Engineers Wetland Delineation Manual. In 1989 a manual was developed as a replacement for the 1987 version, but it led to confusion and controversy. In 1991 another revision of the manual was developed, but it generated additional controversy and was not adopted. During a Congressional review of the 1991 manual, Congress barred the Corps from implementing the 1989 manual. As a result, the 1987 manual continues to be used for wetland delineation. A National Academy of Sciences wetland study scheduled to be completed in 1994 may help resolve these issues.

In August 1993, a compromise package on wetland policy was announced by the Clinton Administration. President Clinton's plan for wetland protection embraces the concept of no-net-loss (NNL) as an interim goal with the long-run goal of increasing the quality and quantity of the nation's wetland resource base. NNL of wetlands is not a policy per se but is a *policy goal* specifying that loss of wetlands be balanced with a gain in wetlands elsewhere. Achievement of NNL is dependent upon the combination of all wetland management actions. President Clinton's plan also gives the Natural Resource Conservation Service/USDA (NRCS) responsibility for determining the extent of swampbuster and Clean Water Act jurisdiction on agricultural lands. In addition, the plan recommends wetland mitigation banking and the WRP and promises an Executive Order to enunciate interim and long-term NNL goals.

Unprecedented floods in the Midwest in 1993 inundated millions of acres of farmland, reemphasizing the need for

floodplain management. As a result, flood relief and floodplain management currently are being used as the rationale for funding wetland restoration in the Mississippi Valley. The voluntary emergency watershed protection program helps landowners convert flood-damaged cropland to wetlands. More than 25,000 acres will be restored to wetland in seven Midwest states.

Pressures for change in wetland policy depend upon one's perspective. Budget limitations push policy toward regulation or voluntary programs. Property rights advocates push policy toward compensation and incentives. Wetland protection proponents push for broad wetland delineation, while those having wetland acreage who design it not be regulated push for narrow delineation. The problem for policymakers, then, is to devise new or revised policies that will meet NNL wetland protection goals, resolve the delineation issues, address the property rights/compensation issues of landowners and generally overcome criticisms of current programs. This will need to be accomplished within budget constraints imposed in efforts to reduce the federal budget deficit.

Issues

- **Compensation.** Property rights and constitutional taking issues will continue to plague wetland policy. At issue is whether the historic property right/compensation balance will be acceptable to property owners and taxpayers in the future. Positions on this issue depend upon

one's view as to whether wetland outputs are society's property, the landowner's property or a combination?

■ **Control.** "Who will control wetland policy for agriculture" will be an ongoing issue since many believe agriculture is the leading cause of wetland loss. Can NRCS successfully work with wetland owners in a regulatory role, and will NRCS leadership be accepted by nonfarm interests?

■ **Delineation.** Wetland delineation is not fundamentally a scientific question, but a policy decision about the lands over which regulators will have jurisdiction. NRCS has responsibility for wetland delineation on agricultural lands but the Corps of Engineers and EPA have oversight responsibility. The Corps and EPA are still responsible for 404 permitting where required.

■ **Effectiveness.** The effectiveness of alternative wetland policies can be measured by the extent to which they enhance the efficiency of wetland management regardless of the policy goal selected. However, the effectiveness of policies often depend upon many factors. For swampbuster this includes the health of the farm economy, budget pressures and incentives to participate in farm programs. Because so many factors are involved, swampbuster may not provide effective conversion disincentives where the most vulnerable wetland is located. Effectiveness of the wetland reserve program depends on landowner

acceptance and the level of federal funding.

■ **Other legislation.** Policy options for the farm bill may depend on wetland provisions of other legislation and the timing of enactment. Especially important to agriculture will be the reauthorization of the Clean Water Act, which may focus upon ecosystems, watershed planning and nonpoint source pollution regulation.

Policy Alternatives and Consequences

Policy choice among alternatives requires decisions about the following implementation options:

- (1) What to implement.
- (2) How to implement.
- (3) Who should implement.

No single scientifically determined "best" wetland policy will be discovered because value judgments, perspectives and positions differ among stakeholders. Thus, choices appropriately are made in the political arena.

What to Implement

Deciding "what to implement" involves identification of wetland management goals, definition and delineation of wetland and determination of the optimal breadth of wetland management. This may range from a broad-based, holistic

or ecosystem approach to a more narrow, targeted approach.

■ **Narrow, targeted approach.** Historically, farm bill policies have been targeted at narrow issues, such as low commodity prices, soil erosion or wetland conversion. Expansion of programs targeted at wetland will require that "wetland" and its beneficial functions be more clearly defined and that all wetland not be treated homogeneously since wetland is different in function and value. Alternatively, targeted policies could focus on specific environmental outcomes or problems such as erosion control or flood damage. In this case, generic solutions such as wetland protection might receive less direct emphasis.

■ **Holistic or ecosystem approach.** In recent years, the focus of environmental quality programs has broadened. Specific issues are less apt to be considered in isolation. While broad objectives require a holistic or ecosystem approach such as watershed management, attention must be paid in such cases to the importance and role of wetland in meeting ecosystem objectives, the other components of the landscape (natural and man-made) that either affect environmental quality or are affected by wetland policies, and the trade-offs considered between different environmental resources such as wetland versus upland.

The consequences of wetland policies fall on the interest groups involved including producers.

landowners, developers, consumers of food products and environmental services. These consequences also depend on the intent and effectiveness of wetland policy. In general, farmers and ranchers are adversely affected if their land use options are restricted. Effects include reduced crop acreage, reduced production of commodities, increased costs, reduced farm and ranch income and declined market values of land and other assets. Consumers may face higher food costs. On the other hand, a variety of groups recognize a loss in public environmental goods when wetland restrictions are relaxed and conversion increases. A broad-based, holistic or ecosystem approach will generally affect a larger land area than a more narrow, targeted approach and thus may have greater negative effects upon farmers and ranchers. However, this approach will provide greater environmental benefits to the general public.

How to Implement

Wetland policies can be implemented through use of incentives, command and control techniques (regulations) or a combination of the two. Current wetland policies span the range of options available to government. Each differs in its effects on equity among the regulated as well as between the regulated and the beneficiaries of regulation (i.e., those who pay and those who benefit).

- **Command and control (regulations).** Other than agricultural programs, most resource protection programs have relied upon regulations and mandatory participation.

Examples affecting wetlands include the Clean Water Act (section 404 permits), the Endangered Species Act (protection of critical habitat) and the Coastal Zone Management Act (CZMA)(control of nonpoint source pollution). In a departure from past approaches, the 1990 reauthorization of CZMA mandated implementation of nonpoint source management practices on farmland. A similar regulatory approach toward agriculture is being considered in reauthorization of the Clean Water Act and will be an option for debate in the 1995 farm bill.

- **Incentives.** The farm bill has historically relied on research, education and payments to producers to generate participation and reach its objectives, especially with respect to commodity price support-supply control programs. Over time, conservation provisions of the farm bill have expanded and incentive programs such as the conservation reserve and the wetlands reserve program (WRP) have been developed. The WRP, an easement purchase program, was recently expanded to twenty states. Increased or continued funding for the WRP would increase the amount of hydric cropland converted back to wetland in the twenty (or more if expanded) eligible states.

Impacts of further changes in the WRP depend upon the design and magnitude of the program, including program specifics such as the extent of buffer zones, cost-sharing arrangements, dollars appropriated and acreage allowed. Government costs could be

substantial, but program costs may be partially offset by reductions in commodity program costs where eligible hydric cropland is currently enrolled in those programs. Depending upon the magnitude of the program and the impact upon agricultural production, product prices could be affected with resulting impacts upon agribusinesses and consumers. Through higher taxes or prices, taxpayers and consumers pay for the subsidies received by landowners.

- **Combining incentives and regulations.** In addition to incentives, programs have offered commodity program benefits but mandated that participants implement conservation activities on the land. Swampbuster is an example. Swampbuster provisions will continue unless it is specifically eliminated. Consequences for producers and consumers likely were greater following the passage of the 1985 farm bill when the program was first established. In its current form the program is not likely to be large enough to affect consumer prices. If the program is to be continued, it will be essential to overcome criticisms of the program by insuring fuller implementation of compliance requirements as well as greater consistency in application of the provisions across states and regions.

An important question is how NNL will be accomplished. Current programs, such as swampbuster and the WRP in the 1990 farm bill, affect wetland conversion incentives but may not be adequate to accomplish NNL.

Policy consequences and the effects of NNL are dependent upon the tools chosen to accomplish its objectives.

Who Should Implement

Implementation of wetland policies requires decisions about the level of government to be involved, the agencies that will have a role and the coordination of different policies.

■ **Federal, state or local level.** What is the appropriate mix of federal versus state and local management? A centralized approach to wetland management may come at the expense of efficiency and local autonomy. On the other hand, national wetland policy goals could be compromised with state or local administration of wetland policies although taxpayer cost may be reduced.

■ **Which agency?** Should intervention be accomplished within one agency or spread out among several agencies? Wetland policies can be administered by an agriculturally oriented agency, by an environmental agency, by a "neutral" agency or by multiple agencies. USDA recently was given a major role in wetland regulation with the naming of NCRS as the lead agency for wetland delineation for agriculture. NCRS's predecessor, the Soil Conservation Service, has been a "white hat" agency or in other words, a friend of agriculture. Now it is being asked to interpret, implement and enforce restrictive regulations on its clientele. The challenge will be for NCRS to succeed as both a facilitator of

agricultural activities and a regulator.

The ultimate choice of "who should implement" is in part determined by the response to "what to implement" and "how to implement". Wetland policy currently is coupled with agricultural policy through swampbuster. However, whether coupling improves wetland management is open to debate and at a minimum, is dependent upon the specific policy option being considered. Further, if policies are administered through a single department, it is difficult to philosophically or administratively decouple policies. If policies are administered by separate agencies, potential problems include lack of coordination, duplication or the existence of cross purposes.

Concluding Comments

The 1995 farm bill, perhaps more than farm bills in the past, will be influenced by the timing of other legislation, especially the reauthorization of the Clean Water Act. Enactment of the farm bill before reauthorization of the Clean Water Act will present opportunities to address wetland and nonpoint source pollution issues there rather than in the Clean Water Act because the approach and strictness of policy options are apt to differ. If the Clean Water Act is reauthorized first, actions will likely be stricter and more prescriptive. In addition, strong budget support for the current Wetland Reserve Program will lessen the pressure to develop new

approaches in the 1995 farm bill.

A number of issues must be resolved before wetland policy-making becomes tractable. These include the resolution of the wetland delineation controversy, the agreement on goals related to management of that resource, and a comprehensive assessment of issues related to compensation and equity, program control, effectiveness and the relationship of wetland policy to other policies. Each and every public policy choice brings with it change in the status quo. This is a change that is positive to some and negative to others. Finally, the impacts and effects of wetland policy will vary depending on the level of government responsible as well as the mission of the agency or department within the level of government.

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Agriculture and Water Quality Policy

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Background

A national water quality assessment conducted by the Environmental Protection Agency (EPA) has indicated that agricultural runoff is a significant source of water pollution in the United States. According to the 1992 National Water Quality Inventory Report to Congress, approximately two thirds of the assessed waters meet state-established water quality goals. Of those waters with quality problems, agricultural sources were the leading cause of contamination.

Agricultural sources of water pollution can include soil sediments, nutrients, pesticides, mineral salts, heavy metals and disease organisms. While damage to water quality is of concern to farmers, water pollution from agricultural sources can also have off-site effects that impose damages on other users of water. Nutrients can overstimulate the growth of algae and weeds; siltation smothers bottom-dwelling organisms and destroys stream habitat; pathogens cause shellfish harvesting restrictions, drinking water restrictions and recreational beach closures; and organic enrichment leads to reduced levels

of dissolved oxygen in water, which can cause fish to die. Thus, off-farm effects on water quality impose costs on society, including costs of avoiding potential health hazards, degradation of natural environments and lost recreational opportunities.

Current Situation and Forces of Change

Congress has responded to public concern about water quality problems related to agriculture in several different ways. Section 319 of the Clean Water Act (CWA) as amended in 1987 required the states to submit assessments of water pollution from nonpoint sources including agricultural sources. States were called upon to develop management programs that target water quality problems basing priorities on the risk posed by nonpoint source pollution to aquatic ecosystems or human health.

The EPA and Congress have been dissatisfied with the lack of progress in achieving water quality goals through the Section 319 CWA program. Weaknesses of the

program include lack of effective deadlines for state compliance, inadequate provision for enforcement and lack of appropriations to implement Section 319 activities. Lack of progress in controlling nonpoint-source pollution has prompted Congress and EPA to call for revisions to the program in discussions concerning CWA reauthorization.

The Coastal Zone Management Act Reauthorization Amendments of 1990 (CZMA) required the 24 states and five territories having approved Coastal Zone Management Plans to develop strategies for protecting coastal water quality. EPA guidance specifying management measures for sources of nonpoint pollution in coastal waters specifically includes measures relating to agricultural sources. The CZMA approach to nonpoint source pollution control is potentially important because it represents a high degree of federal involvement in specifying management measures and because it sets up a process for prodding the states into implementation of stringent programs. The CZMA approach also is noteworthy because it is being used as a model for proposed rewrites of the CWA.

The 1990 farm bill authorized a new water quality incentives program (WQIP). It provided for incentive payments to farmers to implement multi-year farm

management plans which protect water quality by reducing use of fertilizer, manure and pesticides. The WQIP authorizes incentive payments of up to \$3,500 per year for 3-5 years to farmers who implement a Soil Conservation Service (SCS)/USDA approved water quality resource management plan. Program yield and base are protected for participants in WQIP. The program targets those acreages especially susceptible to water quality problems and is administered on a watershed basis. States submit plans to USDA for proposed project areas. The WQIP was first funded at \$6.75 million in 1992, at \$15 million in 1993 and again in 1994. At this point, it is still too early to judge the effectiveness of the program.

The conservation reserve program (CRP), created by the 1985 farm bill, was partially redirected under the 1990 bill. Lands thought to endanger water quality when used for agricultural production were added to "highly erodible" land in the criteria for defining CRP eligibility. This revision meant an additional 11 million acres could be enrolled in the CRP in areas not previously eligible as well as substantially increased CRP enrollment in some coastal and lake states.

The 1990 farm bill made changes to program rules to encourage planting flexibility. If farmers are free to rotate crops without losing program base, then they may be able to reduce the amounts of pesticides and fertilizers used. This reduction in chemical use could result in improved protection for water quality. The integrated crop management program (ICM) is being tried on a pilot basis to reduce agricultural chemical use. Farmers receive incentive pay-

ments for using integrated pest management, new rotations and other steps for using chemicals more efficiently.

The following forces of change concerning agriculture and water quality have become apparent during the past decade:

- Agricultural nonpoint-source water pollution has found its way onto the agenda of the environmental committees of Congress in the context of the CWA reauthorization. New policy proposals put increased emphasis on concerns for human health, environmental preservation and resource amenity values related to off-farm impacts of agricultural practices.
- Some environmentalists contend that USDA lacks either the will or the ability to implement measures to reduce agricultural nonpoint sources of water pollution.
- Congress, in its efforts to reduce deficit spending, appears to be increasingly reluctant to approve additional spending in support of voluntary agricultural water quality programs unless the funding is redirected from other programs that have traditionally benefited agriculture.
- Given the shortage of money for environmental programs, there will probably be an increase in emphasis on targeting programs to areas where problems are most severe and prospects for reducing pollution are greatest will be evident.

- Holistic approaches to pollution management have gained support. Concepts of "landscape approaches", "ecosystem management" and "watershed planning" are replacing a previous focus on point sources of chemical contamination.

Issues

Debate over the appropriate role of the federal government with respect to agriculture and water quality will be shaped by the manner in which the problems are framed. How the problems are framed depends largely on who does the framing — environmental interests or agricultural interests. Either way, policymakers will confront difficult questions concerning "how clean is clean enough," "who decides," "who pays" and "what level of government is appropriate."

The question, "how clean is clean enough," cannot be answered unless the water quality objectives are clear. It will need to be determined what the primary objective is: public health and safety; or aesthetics and recreation; or ecosystem protection and restoration.

Questions about "who decides" and "who pays" may be interrelated. If public policy pertaining to agricultural sources of water pollution is left to the agriculture committees of Congress, it is likely that a tradition of voluntary programs will continue and that USDA will be the implementing agency. If the environmental committees of Congress decide to address agricultural sources of

water pollution, it is more likely that regulatory programs will be considered, placing the EPA into the role of lead agency.

Some proponents of regulation to control nonpoint sources of pollution argue for specific land-use controls tied to public land-use plans and zoning ordinances which are the activities that have been the traditional domain of local government. The case for a federal government role rests primarily on arguments that there is a need for coordination, for uniformity across state and regional boundaries and for the capacity to address pollution problems that are trans-state in nature.

Policy Alternatives and Consequences

Conceptually, there are three basic categories of policy actions to reduce water pollution including incentives and disincentives, regulation and education and technical assistance. The three categories of policy actions are not mutually exclusive. Some proposals for policy reform would package two or more of these generic approaches into a single, more complex program for water quality protection. Depending on the outcome of the CWA reauthorization during 1994, at least three broad possibilities exist for water quality provisions in the 1995 farm bill. These are presented here as "generic options".

Continuation of Existing Voluntary Programs

Supporters of the current voluntary, incentives-based approach to agricultural soil and water conservation argue that current efforts will be effective in the long run and must be given a fair chance to succeed. They would opt for continuation of the WQIP and the ICM pilot program until greater knowledge and experience has been gained about effective ways to reduce agricultural sources of water pollution. These supporters of voluntary programs point out that specific attention to water quality protection is a fairly recent policy emphasis for agricultural programs. Technologies that are both environmentally benign and economically feasible for farmers are still evolving. Further, it takes years of education, demonstration and technical assistance to change the management decision process of thousands of independent farmers. To require adoption of specified management practices before those practices are technically proven and understood by farmers may impose additional costs on farmers without producing long-term water quality benefits.

Supporters of a voluntary approach concede that recent assessments of water quality impacts demonstrate some reason for concern, especially in identifiable pollution "hot spots." However, these supporters argue that the evidence does not document a crisis in water quality justifying rapid movement to more stringent, and potentially less efficient, approaches to the control of agricultural nonpoint sources of water pollution.

Continuation of existing programs would imply a relatively

small commitment of public funds to reducing agricultural sources of water pollution. It would impose no increased costs to farmers. On the other hand, it would offer little hope of significant changes in water quality at least in the short run.

Green Payments

The concept of "green payments" (sometimes referred to as "stewardship payments") as incentives for reducing agricultural sources of water pollution has elicited much interest. This program would pay farmers who adopt "environmentally friendly" production practices (see also Income Assurance and Green Payment Policy leaflet). The general idea is to divorce commodity program income supports from current planting decisions and to use a substantial portion of the funds previously allocated to commodity programs for the new stewardship payments. Payments could be made to farmers for adopting such practices as filter strips or information technologies, such as soil nitrogen testing, as methods to achieve water quality goals. In a variation of this concept, payments could be tied to the achievement of specific environmental results, such as reduced water quality problems within a watershed.

The concept of a green payment approach raises certain questions of implementation.

- **Payments.** What level of payment is needed for farmers to adopt practices which improve water quality? What are the relationships among practices, their costs and impacts on water quality?

- **Design.** Should farmers receive payment for adoption of individual management practices, for following whole-farm management plans or for achieving designated environmental results?
- **Choice of policy instrument.** How should responsibilities be allocated among federal, state and local government? How can the system be administered in a way that avoids too much complexity?
- **Implementation.** How will accountability be insured? Who will monitor compliance with practices or water quality improvements?
- **Fairness.** Would the program punish the existing good stewards and reward the poor stewards? If green payments are funded by reducing commodity program payments, related questions of equity arise. Would most of the farms losing commodity program benefits become eligible for green payments? Or would the green payment program result in a wholesale redistribution of government payments to farmers?

Without clear answers to these questions, the consequences of a green payment approach can be outlined only in general terms. Assuming the program results in improved water quality, individuals who currently absorb the off-site costs of agricultural water pollution would benefit. Some proponents of the stewardship payments concept would prefer that the stewardship payment not be linked to existing program benefits and program crops. They would like to

see the stewardship program replace existing commodity programs and would advocate targeting of payments to achieve water quality goals.

Incentives for management practices would be broadened beyond program crops to include livestock and specialty crop producers as well as into geographic areas with water quality problems. This type of stewardship payment program would cause a significant portion of commodity program expenditures to be shifted to localities having the greatest water quality problems and away from areas with the greatest amount of commodity program crops.

Effects on profits of producers are likely to be mixed. Producers located on an impaired watercourse who were previously ineligible to receive payments for conservation practices may benefit under the green payment option. Farmers currently enrolled in commodity programs may experience a reduction in income and greater income instability. However, these adverse impacts may be offset in some cases by green payments.

In general, success of a program in protecting water quality and the environment may forestall or delay pressures for more stringent regulatory programs. Therefore, green payments may benefit all producers contributing to water quality degradation. The net effect on government and taxpayer costs is unclear since the degree to which green payments would substitute for income supports and the costs of implementing the program are not known.

Universal Water Quality Compliance

This option would feature a regulatory component. Each farm found to be a source of off-site water pollution would be required to adopt a "water quality compliance plan" by some specified future date — perhaps by the year 2000. The plans would resemble conservation compliance plans developed pursuant to the 1990 farm bill, but they specifically would address water quality. Farm operators whose practices contribute to water pollution or some other environmental hazard and who choose not to follow a water quality compliance plan would be subject to penalties. Farmers following water quality compliance plans would be exempt from such penalties.

The water quality compliance program could be targeted to exclude areas without serious water quality problems, thus helping to minimize program costs. The program could also embrace environmental objectives in addition to water quality, such as critical habitat protection or air quality. Technical assistance in developing plans would be available from the SCS and intensive educational programs could be provided by the Extension Service.

Consequences of such a program are uncertain. It has several important characteristics. First, it incorporates targeting and allows for comprehensive watershed management approaches to water quality protection. It avoids the cost and aggravation of program compliance except where real problems exist. Farmers whose practices do not create environmental problems would pay no penalty. Farmers whose practices have in the past created water quality problems can avoid

the penalty by following an approved plan. In some instances, production costs may be increased and, conceivably, certain operations might be forced out of production. Supporters of this concept contend that many water quality problems can be eliminated by changes in farming practices without additional cost to the farmer. Where such conditions exist, intensive technical assistance and education can be of much benefit without long term budget exposure or farmer costs.

The regulatory aspects of the water quality compliance concept raises questions about the suitability of the SCS as the lead agency. If "penalties" are limited to loss of other program benefits, water quality compliance becomes a cross compliance program similar to those already administered by USDA. If "penalties" refer to civil or criminal penalties, then this provision is not for the farm bill but for the CWA. It is also unclear how large a penalty would be necessary in order to induce

compliance among reticent farmers. Enforcement would be a key to success of the concept, and enforcement of unpopular regulations can be costly.

Summary

State assessments of water quality in streams and lakes indicate that agricultural nonpoint sources account for the largest portion of the nation's remaining water quality problems. Public concern has been reflected in proposals to address agricultural sources of water pollution through amendments to the CWA. The nature of water quality proposals for the farm bill will no doubt be influenced by the outcome of the CWA reauthorization process.

At least three generic options could be considered for the 1995 farm bill including:

- Continue existing voluntary programs.
- Implement a green payments approach that would pay farmers for technologies and management practices that protect water quality.
- Require universal water quality compliance that penalize farmers who fail to adopt management practices and technologies that protect water quality.

The likely consequences of any of these proposals are difficult to predict with confidence, but they would certainly differ from each other in terms of farmer cost, taxpayer cost and the likelihood of achieving improvements in the nation's water quality.

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Sustainable Agriculture

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Agricultural sustainability seems like a simple goal. However, the topic can be divisive, due in part to different notions about what it means. To some people, sustainability has always been central to agricultural policy and is achieved with little need for government intervention since sustainability is already in everyone's best interest. To others, agricultural policies have been short sighted, focusing on short-run profits and ignoring other considerations such as resources, the environment or human and animal welfare.

According to the 1990 farm bill, sustainable agriculture (SA) is "an integrated system of plant and animal production practices having a site specific application that will, over the long term: satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of non-renewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operation; and enhance the quality of life for farmers and society as a whole."

SA policies seek to introduce changes that provide more comprehensive societal benefits like those described above. This could be

accomplished in the following major ways:

- By increasing research and education efforts
- By changing the provisions of commodity programs
- By providing financial incentives
- Through regulations

Some policy changes would be specific to SA, and others would focus more narrowly on related issues such as water quality.

Background

Research and education

Research and education for SA was first authorized in the 1985 farm bill. Appropriations of approximately \$4 million per year began in 1988. The effort was continued in the 1990 farm bill through the sustainable agriculture research and education program (SARE). Its goals are to encourage the best utilization of biological applications, the integration of management systems and the development and transfer of technology.

Best utilization of biological applications initiates research, demonstrations of technologies and implementation of educational activities for substituting the use of chemical pesticides, fertilizers and toxic natural materials for lower-input, diversified systems that are still profitable and competitive. Integrated management systems call for research and education in integrated crop management (ICM) and integrated resource management (IRM). The SA education program for technology transfer provides for technical guides and handbooks, national and regional training centers and a system of state coordinators and specialists. In addition, it requires SA training for all new extension agents. At least \$20 million was authorized for each objective but funding levels were much lower and have been slow to commence.

Financial incentives

Some programs offer producers direct financial incentives to use sustainable systems. The integrated farm management program (IFMP) pays farmers to reduce the percentage of program crops grown in order to produce resource-conserving crops (i.e., legumes and grasses). This program combines flexibility with cost-sharing to promote rotations with resource-conserving crops.

Other programs are the conservation reserve (CRP) and wetlands reserve programs (WRP), which offer payments to retire critical lands from production (see CRP and Wetlands leaflets). The ICMP and the water quality incentives programs (WQIP) provide cost-sharing and other incentives for adoption of best management practices that a farmer agrees to carry out in a farm plan.

Commodity program changes

Some changes were also made in the commodity price and income support programs to reduce their negative impacts on sustainability. Studies have suggested that commodity programs encourage monocultural practices which promote intensive production systems and discourage crop rotations that may be more environmentally friendly. In the 1990 budgetary reconciliation process, Congress provided that 15 percent of a farmer's base acreage would not receive deficiency payments and could be "flexed" to produce other crops. An additional 10 percent of the base acreage could be flexed at a producer's option without receiving deficiency payments. "Flexing" reduces or removes rotation disincentives by decoupling benefits from the program crop thus allowing producers to rotate program crops with legumes, grasses and other crops to take advantage of "natural" pest controls and fertilizers. Such "flexing" would occur only if it is found to be profitable.

Another major change in commodity programs was to link benefits to increased accountability for managing resources such as wetlands, soil and water. For example, conservation compliance

requires a conservation plan on highly erodible fields. Swampbuster discourages farmers from converting wetlands into new cropland. Whereas, sodbuster permits land conversion only if erosion is kept within allowable limits.

Regulations

The majority of regulatory actions controlling farm practices are carried out by state agencies or by federal agencies other than USDA. However, regulations in farm bills are increasing. For example, the 1990 farm bill requires growers to keep a record of all restricted use pesticides that they applied.

Current Situation and Forces of Change

SA programs were introduced in the 1985 and 1990 farm bills because of concern regarding the contribution of agriculture to environmental problems and its dependence on non-renewable resources. Some people felt that these problems as well as others threatened the sustainability of agriculture, and that government policy contributed to the problem.

This viewpoint presumes that current policies have not focused on SA, which is dependent on a person's point of view. While there is common ground between traditional and sustainable agriculture, SA can involve views not shared by many producers. Indeed,

in a comparison of conventional and alternative farmers, one study found that farmers that used SA techniques had less farm experience, relied less on Extension agents for information, and had lower farm incomes. This suggests that there is a philosophical or ideological element to the belief that traditional agriculture is not SA since many "SA" producers are rejecting traditional information sources and accepting lower incomes. The following four reasons have been offered as to why previous policies have not focused on SA.

- Social beliefs or values, it is suggested, penalize SA by placing too much importance on profit and production. This, in turn, draws attention away from other needs such as reducing soil erosion. The conservation provisions of the 1985 and 1990 farm bills provide evidence that environmental needs can be addressed without threatening food supply or prices. In addition, producers may place too much faith in technology to overcome any adversities that result from conventional systems. This faith, it is suggested, weakens the case for SA as an alternative form of protection to assure a stable and abundant food supply.

- SA may also be disadvantaged by resistance to change from the agricultural establishment; however, change is occurring. Producers are adopting best management practices, industry has factored environmental considerations into their products and policymakers are implementing programs. The policy

questions are as follows: 1) who will decide how much is "too much" emphasis on profit, the environment or other goals when private and social interests are not the same? 2) When and where should the government intervene to alter farmers' decisions?

- The many meanings of SA and method to achieve it result in a lack of precise information. While SA is rapidly narrowing to environmental considerations, advocates want SA to include community values, social justice, and equity. As a result, there will be continued pressure to consider environmental or community impacts in agricultural policy.

An important question rising from this discussion is how does one know the value of SA without definition or information? Some SA advances will improve both profits and other social goals such as environmental amenities while others will involve trade-offs. Therefore, not all information will increase farmer adoption. For example, less profitable SA systems may be adopted by producers with a deep commitment to stewardship. However, not all farmers, or their lenders, share a deep commitment to stewardship and therefore not all farmers are motivated to adopt less profitable systems just because they are less damaging to the environment.

Finally, agencies outside USDA and the legislation they administer affect SA including the Clean Air Act, the Clean Water Act, the Endangered Species Act and the Federal Insecticide, Fungicide, Rodenticide Act. The

Environmental Protection Agency (EPA), the Department of Interior and other agencies increasingly concern themselves with agricultural issues. These agencies have changed their traditional concerns as they have addressed agriculture. For example, the EPA has historically relied heavily on regulatory actions but has recently contributed research funds for SARE in its agriculture in concert with the environment program.

The Major Issues

- Is there an overarching national definition of SA or should federal policies be limited to identifying common goals that can be adapted to fit local needs and conditions?
- Which programs and agencies should address SA? Should USDA be the only agency involved in SA or should other agencies such as EPA play an active role?
- What are SA program costs and benefits? How much cost and lost productivity is society willing to bear to achieve sustainability? What are the benefits of sustainability?
- Can SA be more effectively met by current agricultural research and education programs or is a separate SA program required?

Policy Alternatives and Consequences

Congress will encounter the following three main questions as it considers SA:

- Where will the issues be addressed and how they will be coordinated — which committees, agencies, which bills and which titles?
- What is the proper role of government?
- What are the most effective policy vehicles to accomplish its objectives?

Coordination of policies will be difficult because of the broad definition of SA. It is possible that provisions in one program area will be redundant or offset in another program. A process to coordinate separate policies or to determine how different provisions can address a single, multifaceted objective would reduce redundancies and ambiguities.

The role of government and proper level of support will be determined through a lengthy debate. From past Congressional action, society appears to want more SA while it also wants to reduce financial outlays to agriculture. What is not clear is how much more SA is desired and how much it would cost. Limited budgets will make it easier to cut disincentives for SA than to create new ones. At the same time, incentives will be hard to justify

because the benefits from SA are not always clear.

SA benefits are difficult to define due to divergent private interests and a lack of information. For example, there is little agreement about the appropriate role of government in controlling pesticide use. The government could force or encourage farmers to change their practices or leave these decisions to individuals. Currently, it provides information about risk and restricts use where risks exceed a politically determined threshold. In addition, it finances research to develop less risky alternatives. The government's options include the present approach of providing information and limited restrictions or to increase or reduce intervention. Increased intervention would require outlays for financial incentives or imposing costly restrictions on producers.

Finally, Congress must determine which policy vehicles to use. Two extremes are possible. One is to set a simple and clear national policy that applies to all farmers. The other is to set the ground rules for allowing producers to negotiate solutions at the local level. A uniform policy is more easily administered but is inefficient and ambiguous since it treats every site the same. A flexible policy promotes more efficiency by allowing each producer to apply the appropriate technologies for local conditions but lacks uniformity, clarity and accountability, since all farmers would not be treated equally.

Policy Options

Education

An outline for SA education was developed in the 1990 farm bill. However, many details were not addressed. The 1995 farm bill could more carefully address who will carry out SA education, what it will cost and what it will include. For example, will education include information about economic costs and benefits of sustainable systems? How is the new program different from what the Extension Service already offers?

One viewpoint is that profit receives too much priority in current Extension programs. Some systems may offer other benefits such as soil conservation or lower worker exposure to pesticides. A separate or independent SA education program might identify and focus on these secondary costs and benefits and communicate them to producers considering SA. In addition, a system that emphasizes SA could give more attention to keeping current on information advances that improve the profitability of SA. But how much more is needed than is already offered? And if SA is important and more is needed, why is the current system failing to provide it? Could the current system already be providing the appropriate amount already?

Research

SA research in the previous farm bills has focused primarily on production technologies. In the future, research could systematically include economic, market

development, policy and socioeconomic effects. Production technology is one basis for policy development. However, production systems and farming systems are impacted by policies that regulate farmers or that provide education or financial aid. At this time, research specifically on policy is notably absent.

Advocates of SA argue that research has not concentrated on discoveries that advance the use of SA technologies. But how are the unique aspects of SA best addressed and are they unique? Targeting research money to SA to some extent validates the notion that the overall USDA research program does not adequately address it. What is inadequate about the current system and why is it so? Many if not most SA research discoveries stem from general research. Perhaps a separate program is justified. However, it is worth considering whether it would be more cost effective to investigate why the choices about SA have been made in the current system and make course corrections if necessary.

Another area of potential research is in the area of market development. There are examples of successes and failures in which products have been sold with "green" labels separating them from other products. Product certification for environmental attributes is a potential source of funds for SA that represents consumer willingness to pay for the attributes, thereby avoiding the need for the government to determine individual values.

Financial incentives

Financial incentives can be effective in motivating farmers to adopt conservation measures. In

addition to overall budget constraints, benefits do not necessarily accrue to those who pay the bill. For example, taxpayers are often not willing to pay for increased wildlife benefits that only local residents receive. While at the same time, when farmers adopt practices that improve wildlife habitat, policymakers seem equally reluctant to require farmers to bear the costs.

Farmers may revert to previous practices if funding is withdrawn. If CRP contracts are not renewed, many of the benefits will be lost when the last payments are made at the end of the ten-year contract. In addition, CRP, wetland reserves and set-aside programs affect sustainability but do little for land still in production.

The WQIP and ICMP affect farming practices on land still in production. Researchers who have studied the WQIP found that it was most effective when aimed at narrow environmental problems. However, the payments per farm in these programs are low, and they have yet to prove their effectiveness. A study of the ICMP showed that the program reduced fertilizer rates but had a mixed impact on pesticides. The integrated farm management program (IFMP), designed to increase rotation incentives, only enrolled 96,039 acres in its first two years, although 25 million acres were authorized between 1991-1995. Higher funding levels in these programs appear necessary to provide enough financial incentive to adopt more SA practices.

It has become increasingly common for the Congress to link environmental plans to specific program benefits. For example, conservation compliance was adopted in the 1985 farm bill by requiring that each participant

have a conservation plan to control soil erosion as a condition for receiving program benefits.

Conservation compliance could be expanded to be one element of whole farm plans and, thereby, act as a social contract between the producer and other members of society to define mutually tolerable production practices. Fifteen USDA programs now require conservation plans of one form or another. Farm plans could be controlled centrally by the federal government or left to the discretion of local administrators. Leaving choices to local administrators even within federally determined guidelines allows producers to apply the most appropriate technology but suffers from a lack of uniformity. However, local planning is used successfully in some instances. For example, in Nebraska, some natural resource conservation districts require producers to test their soil for residual nitrogen and then work with these producers to determine recommended timing of application and optimal nitrogen fertilizer rates that are profitable and that do not threaten groundwater.

The government could provide payments directly to producers for adopting practices that are sustainable under some government guidelines. Such "green payments" are gaining popularity among supporters of environmental issues (See New Policy Options leaflet). One example of this is a proposal that would provide payments to dairy producers that have implemented waste management plans. However, current budget rules requiring that such options be funded through cuts in other programs such as traditional commodity programs make it more difficult to adopt new programs such as green payments.

Commodity program changes

The previous two farm bills initiated several changes in commodity programs designed to increase the attractiveness of SA. President Clinton recommended an increase in normal flex acreage from 15 percent to 25 percent of base acreage in his deficit reduction package, which was not implemented. However, additional flex remains an alternative. However, analyses of flex experience have indicated only moderate gains. While flexibility was designed to encourage the planting of cover crops such as legumes, only about 22 percent of potential land was flexed into something other than the program crop, and soybeans was the dominant crop chosen when crops were changed. Flexing actually increased the acreage of cotton, which many regard as an input intensive crop not often consistent with SA objectives. Therefore, since soybeans and cotton are both row crops, one study concluded that flexing probably had a negative net effect on the environment.

In short, the changes in commodity programs in the past two farm bills have not produced substantial increases in the adoption and use of SA systems. There are many reasons why this has happened, but two factors had a dominant influence including the following:

- Congress was unclear about what SA is and failed to develop clear and consistent policy. A lesson can be taken from the conservation compliance provisions because the successes of this program indicates that clear and narrow

goals, such as reduced soil erosion, are easily achieved.

- On the other hand, flexibility did not have a clear goal in terms of SA — rather it was designed to cut program costs and, in return, gave farmers planting options that were not SA specific. Benefits to SA were insufficient to effect change. For example, the IFMP provisions were not attractive enough to encourage large enrollments. Conservation compliance provisions may not be sufficiently attractive to require more SA practices. If incentives are to be utilized they must make the desired SA practices economically feasible.

Regulations

Regulations are an increasing reality in American agriculture. However, most of these regulations are not promulgated in the farm bills. Agriculturalists prefer self-improvement and economic incentives over regulation. Nevertheless, outside pressures may lead to more regulation in the 1995 farm bill. A major concern here is

which agency would enforce the program and how much it would cost.

Conclusions

There has been very little economic research about the benefits and cost of large increases in SA. Furthermore, there has been little consensus about how to most effectively obtain SA. The government could increase funding for conventional agricultural research with targeted objectives (e.g., water quality), or it could create a separate SA research and education program. The amorphous issues in SA may be too much to address in a single program. Therefore, SA may be best addressed through research and education efforts targeted at specific objectives such as reduced soil erosion, improved water quality, less pesticide use, etc. Where these efforts prove inadequate to protect certain public interests, policies could be developed to encourage producers to make further changes.

Further Readings

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Agricultural Trade Policy

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Background

The 1995 farm bill will be written in a political environment of complex, and often conflicting, trade issues. The export enhancement program (EEP) was authorized under the 1985 farm bill and has become the primary means by which the United States has attempted to meet price competition in world markets when domestic policies supported prices above the world market or to counter subsidies used by foreign competitors.

Since its inception in 1985, the EEP has been used to subsidize export sales to over 84 countries. By early 1991, over 106 million tons of wheat and wheat flour, 10 million tons of barley, 319,000 tons of grain sorghum, 327,000 tons of rice, 189,000 tons of poultry feed, 207,000 tons of poultry, 788 million eggs, 874,000 tons of vegetable oil and 70,000 head of dairy cattle have been sold under provisions of EEP. Total EEP sales have exceeded \$13.9 billion. In early 1992, USDA began paying EEP bonuses in cash.

Export credit guarantees have been used to support U.S. commercial agricultural exports to countries that might not otherwise be able to buy U.S. products and to

counter credit and price competition by other exporters. Credit guarantees increase the availability of credit at reduced interest rates to foreign customers.

The 1990 farm bill contains provisions to continue export price subsidies, credit guarantees, nonprice promotion and food aid. Export price subsidies and credit guarantees are addressed here, while export promotion and food aid are addressed in other leaflets.

Current Situation and Forces for Change

Uncertainty regarding world markets and foreign competition has prompted the United States to rely increasingly upon programs designed to enhance trade. Throughout the 1950s and the 1960s, government-supported trade programs generally accounted for over 20 percent of all U.S. agricultural exports annually. The 1970s witnessed a decline in government supported export sales to below ten percent of total agricultural exports. The mid-1980s brought greater competition, stockpiling of

commodities and lower prices, while the early 1990s were characterized by increasing tensions in the multilateral trade negotiations and global recession. These forces caused a resurgence in government supported export sales. In fiscal year (FY) 1992, for instance, over one-fifth of U.S. agricultural exports were supported by some form of government program.

To counter unfair foreign competition and to offset the effects of declining exports, the Congress increased funding for price-reducing export programs beginning in 1986. The EEP has expanded from \$350 million in FY 1986 to \$1.0 billion in FY 1989. Since then, budgetary pressure has forced reductions in EEP funding to \$525 million in FY 92. Congressional authorizations require that the Commodity Credit Corporation (CCC) make available at least \$1.0 billion annually in cash or commodities to support EEP sales through FY 1995.

The CCC export credit guarantee program includes \$5.0 billion annually in short-term credit, \$500 million for intermediate credit and \$200 million in guarantees for emerging democracies. For FY 1995, it is estimated that the total government cost of export programs will be \$8.4 billion, compared to \$8.8 billion in FY 1994.

Completion of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), issues related to the North American Free Trade Agreement (NAFTA) and the prospects for extending preferential trading status to other Latin American nations are all important actions that could affect the outcome of the debate over a new farm program. Major provisions of the Uruguay Round agreement will force changes in these export promotion programs such as EEP. The major mandated changes resulting from the GATT Round include the following:

- A 20 percent reduction in aggregate internal support considered most trade distorting
- Conversion of existing trade barriers to tariffs and subsequent reductions of 36 percent overall; minimum market access guarantees
- A 36 percent cut in expenditures on export subsidies and 21 percent cuts in subsidized export volumes
- A set of "principles and guidelines" for sanitary and phytosanitary measures
- A "peace clause" exempting domestic agricultural subsidies from most GATT challenges although countervailing duties would still be possible.

Adjustment to GATT

Although agreement has been reached in the Uruguay Round of GATT, it appears unlikely that trade tensions will subside prior to the implementation of a new farm bill. The GATT agreement,

despite its extraordinary complexity and difficulty in negotiation, is unlikely to affect U.S. agriculture in the short run. If approved by the U.S. Congress, over the medium to long run (10-15 years), GATT establishes a world trading regime that will amplify and reward many U.S. advantages in agricultural competitiveness.

The overall internal support cut of 20 percent in the aggregate measure of support (AMS) is wide enough in scope to allow certain protected commodities (e.g., sugar) to remain entirely unscathed. Direct or "decoupled" payments are exempted from reductions. Moreover, when the 1986-88 base used to calculate the 20 percent cuts is applied, many U.S. commodities are already "paid up" and in compliance. From the point of view of U.S. farmers, this adds up to little or no impacts on domestic farm programs. Domestic support may actually increase if decoupled, and non-trade-distorting payments are the recipients of funds previously earmarked for export promotion. One candidate for such funds would be green payments (see *New Policy Approaches* leaflet).

The market access agreements, calling for tariffication of border measures, will make protection more transparent. This tariffication will apply to various U.S. laws, including Section 22 of permanent agricultural legislation, as well as the U.S. Sugar Act and the Meat Import Law. How much tariffs will actually fall (under the 36 percent reductions called for) depends on where tariff equivalents are initially set. Canada, for example, has interpreted its initial tariff equivalents for supply controlled commodities very generously. These include the following percentages: 280-350

percent on dairy, 180-280 percent on poultry, 192 percent on eggs and 93 percent on margarine. In Japan, the initial tariff on rice, to take effect in 2000, will be 500-600 percent. Countries are allowed to change support measures from border protection to decoupled internal payments if they wish, thus creating the decoupled and/or green payment option mentioned above. Finally, "special safeguards" are allowed to prevent import surges by establishing additional duties. Overall, the impact of the market access agreement on consumers, importers and exporters will tend to take hold only after 5-10 years and then with only modest impacts.

Export subsidy cuts, which will be 36 percent in value and 21 percent by volume, are perhaps the most significant achievement of the negotiation, and these cuts promise to reduce the excesses of the European Union's (E.U.) export restitutions as well as U.S. subsidies under EEP. This will translate, it is hoped, into budget and taxpayer savings on both sides of the Atlantic. In quantitative terms, the agreement obligates the European Union to reduce its subsidized wheat exports from 20.2 million metric tons to 13.4 million metric tons, and its feedgrain exports from 12.7 million metric tons to 10 million metric tons. This will result in additional opportunities for other exporters; the U.S. is likely to gain markets for feedgrains, while Australia and Canada pick up the most of the additional wheat exports.

The "principles and guidelines" for sanitary and phytosanitary measures are an important step toward confronting nontariff barriers in agriculture but are only the beginning of a long and vexing process.

The "peace clause," exempting domestic policies from GATT challenges was much heralded in the European Union as an indication of its negotiating prowess. This clause probably has more of a psychological effect than a substantive one in that it creates an international sense that pressures are off for changes in domestic farm programs, at least for the time being. One of the major questions surrounding the conclusion of the GATT talks is whether they were a catalyst which promoted domestic policy reforms in the United States, the European Union and Japan, or if they were simply a ratification of these reforms *ex post facto*. This topic will be debated by trade specialists for years to come and has no definitive answer.

A final dimension of the trade reform discussion in agriculture is its likely impact on environmental quality. A variety of studies have suggested that the greater the move to decoupled price supports, the more favorable the environmental impacts of agriculture. In so far as the GATT agreement leads to greater decoupling, farmers will be allowed to move away from monocropping in response to crop-specific price supports.

In the final analysis, the Uruguay Round Agreement is a modest but important achievement. It cleared the way for the larger negotiation (involving 14 other areas) to be settled successfully with anticipated benefits to world income in excess of \$200 billion dollars. For U.S. farmers, it inflicts little pain in return for modest export gains, and for protected commodities such as sugar or dairy, it offers scope for escape from many of the agreement's disciplines. As major exporters, U.S. feedgrain producers

and processors will benefit most. U.S. consumers and taxpayers will see modest gains from increased market access and reduced budget expenditures. Finally, environmental improvements may be associated with the trend toward decoupling and with the latitude for increased environmental benefits.

The Export Enhancement Program

The EEP faces the prospect of significant reduction in order to comply with GATT obligations. Although many farm and commodity groups argue that the U.S. administration has agreed to simply roll EEP funding into the market promotion program (MPP), it now appears there will be a serious attempt to reduce overall funding for export programs. Even so, EEP still has support among policy makers and farm groups. EEP reductions under the GATT are shown in Figures 1 and 2 for wheat and poultry, respectively. By the year 2000, U.S. expenditures on wheat exports must be reduced to no more than \$368.8 million,

while subsidized tonnage must be reduced to 14.8 million tons. For poultry, the reductions are to \$14.6 million and 28,000 tons.

Some observers argue that EEP has been largely ineffective, by displacing U.S. commercial sales, transferring gains to foreigners, causing the U.S. to import more wheat than it would if the program did not exist and antagonizing strong allies and trading partners such as Australia and Canada instead of countering exports by the European Union. Even after GATT provisions are fully implemented in the year 2000, EEP will likely remain a controversial program.

Export Credit Guarantee Programs

Since 1956, the United States has used various forms of direct credit and credit guarantees to stimulate the sale of U.S. agricultural products to developing countries. Administered by the CCC, export credit guarantees are U.S. government assurances for U.S. banks and businesses against default or failure of a foreign bank

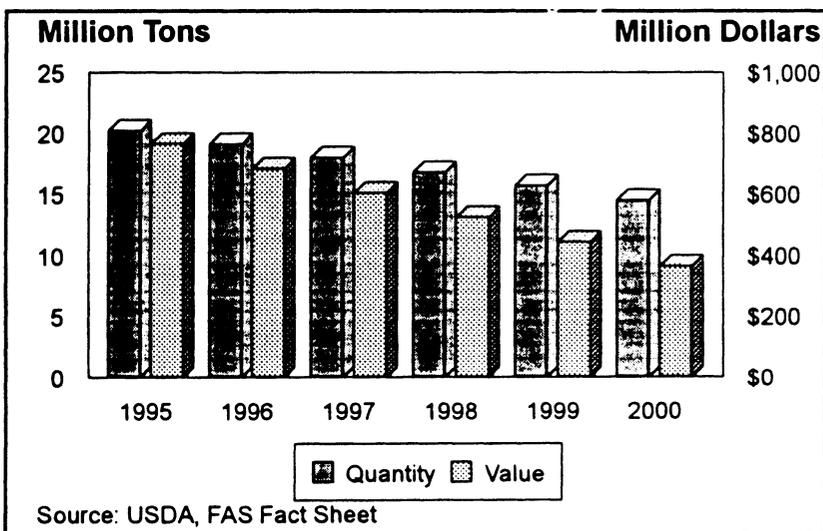


Figure 1. Maximum U.S. Export Subsidies Allowed on Wheat Under Uruguay Round.

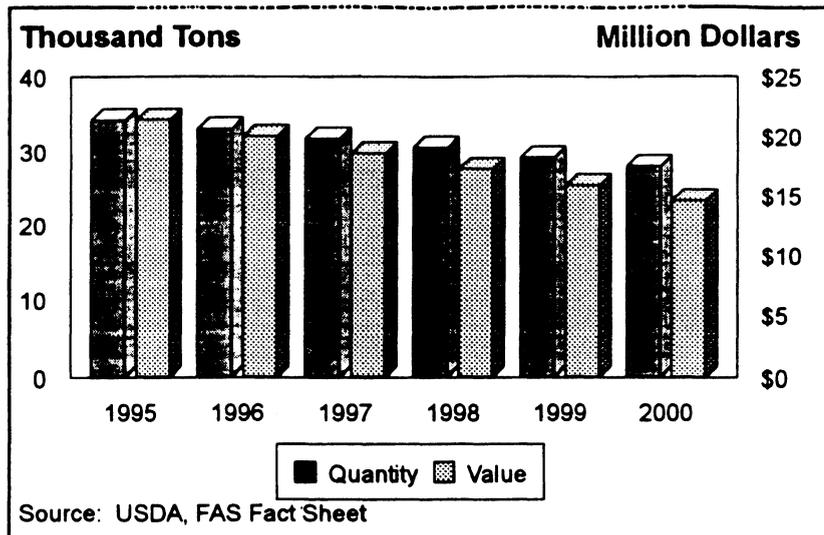


Figure 2. Maximum U.S. Export Subsidies Allowed on Poultry Under Uruguay Round.

or government. USDA presently has two major programs including: the GSM-102 (General Sales Manager) short term credit program which guarantees credit up to three years and the GSM-103 intermediate credit program which is a four to ten year credit guarantee. The primary objective of the GSM programs is to provide credit guarantees in order to expand or maintain U.S. exports in selected markets. Before 1989, defaults had been rare and actual government outlays under this program had been minimal. During FY 1986-FY 1988, for example, bank claims against obligations under GSM averaged 12 percent. Since then, however, Iraq and several former Soviet states have become delinquent on loans, thus resulting in higher costs to the U.S. government and taxpayers.

Major GSM recipient countries in FY 1991-1993 included Mexico, Korea, Algeria, Colombia, Chile, Pakistan, Venezuela, Romania and Russia. Products exported under these programs included grains, fruits, poultry, vegetable oils, meat, hides and

skins, protein meals, dairy products, wood products, nuts and livestock.

Issues

Export promotion programs will experience major reductions in funding support as a result of the Uruguay Round of GATT. The extent to which government savings on EEP are channeled into other export programs, such as market promotion, export credit or decoupled domestic support, remains to be determined. Producers, agribusinesses and rural communities all have a stake in the outcome of the debate on redirection of funding for market promotion. Some of the major trade issues in the discussion include the following questions:

- Who will gain and lose if the EEP is diminished?
- How effective is EEP in promoting international competitiveness?

- What is the potential for, and effect of, substituting MMP for EEP funding?
- How much budget exposure is there in the export credit guarantee program?
- What changes will GATT force upon U.S. export policy, and how will they affect farmers, consumers, and trading partners?

Policy Alternatives and Consequences

As public funds to support agriculture continue to shrink, it will become more important to determine which programs offer the highest and best use of public monies and the extent to which public and private interests gain or lose from changes in various export market programs. The purpose of this section is to highlight some of the considerations for government export programs and discuss their potential impacts on selected economic agents.

EEP Alternatives

Status quo. The use of EEP has become quite important for some commodities. In 1992, for instance, EEP support as a share of U.S. wheat export sales exceeded 60 percent. Who gains and who loses from such policies is a source of much concern and controversy. The continuation of the EEP at current levels would likely have the following consequences.

U.S. farmers are targeted as the main beneficiaries of the EEP. However, much of the evidence does not support this contention. Whether or not EEP raises farm prices depends upon several observable events. First, U.S. prices can be expected to rise if EEP causes importers to increase their purchases of goods from the United States. But releasing government stocks in the form of an EEP bonus can depress farm prices in the short term. Which force prevails depends upon whether the increase in demand for U.S. goods under EEP exceeds the increase in market supplies. If so, prices will rise. If not, prices will fall. Farm prices are more unstable because of the stock reductions associated with EEP.

Paarlberg estimated that during the first years of the program (FY 1986-FY 1989), only 10 percent of U.S. wheat sales under EEP were in addition to export sales that would have been made without EEP at higher, commercial prices. Hence it is unlikely that the EEP was responsible for the higher prices experienced in later years, yet it most likely led to actually lower prices in the near term. Foreign consumers were major gainers from EEP as slightly higher purchases were made at much lower prices.

Private trading firms which source, store, condition, blend, handle and transport grain are likely gainers from EEP. As sales are made, stocks are lowered and volumes traded increase. Private agribusiness firms, therefore, end up handling slightly more volume with an EEP than without it.

Some benefits of EEP also accrue to rural communities, particularly those which have strategically located grain storage and rail facilities. They end up

handling additional volumes of grain and experience some gains as trade is expanded. If demand for EEP exceeds supplies marketed, those same communities may also benefit from higher farm prices as increased plantings of program crops stimulate demand for farm inputs such as seed, fertilizer and other products.

U.S. consumers may actually benefit marginally from EEP in the short term as government stocks are dumped on the market and prices decline. However, it is unlikely that these impacts will be extended or of great magnitude since most commodities, such as wheat, comprise such a small share of the value of the final good produced. In fact, it can be argued that if EEP is effective at actually raising prices, consumers could potentially lose as prices for flour, bread and other products increase.

EEP impacts on government costs depend upon the relationship between storage costs and farm prices. EEP potentially can reduce costs associated with government storage of grains as sales are made and stocks are lowered. However, if farm prices decline due to a release of government stocks, then deficiency payments may actually increase, thereby raising government costs. If the reduction in storage costs exceeds the increase in deficiency payments, taxpayers will benefit directly from the EEP program.

It has also been argued that EEP restored the price competitiveness of U.S. grains in the mid-1980s. While this may have a certain intuitive appeal, the empirical evidence suggests otherwise. Paarlberg has estimated that during the period 1985-87, 305 million bushels of wheat were exported under EEP at an average government cost of \$4.08 per

bushel. The average Gulf export price during this same period was \$3.16 per bushel. He concludes that the government could have saved \$0.92 per bushel by purchasing the wheat at the market price and destroying it. While EEP may result in lower prices to foreign buyers and restore U.S. price competition, this example raises a serious question about the cost of regaining that competitive advantage.

EEP also has been said to invite complaints from trading partners and allies such as Australia and Canada because it lowers world prices and squeezes farm profits in other countries. EEP invites public image problems, may invite retaliation from competitors or trigger a trade war, and may have undermined U.S. efforts for trade liberalization in the GATT.

Downsizing EEP. If EEP funding is reduced to comply with U.S. obligations under the Uruguay Round, then the following impacts can be anticipated. U.S. producers can expect lower prices and less export tonnage, resulting in lower export revenue. U.S. taxpayers and consumers, however, can expect to gain as lower prices and government costs offset the revenue foregone by farmers. As world supply and demand are brought more in balance by all GATT countries reducing export subsidies, farmers will likely face additional price, and hence, income, instability.

Downsizing EEP also has some important implications for agribusinesses and rural communities. Private traders may initially experience lower volumes of business as subsidized exports decline. These reductions will likely have negative impacts on the

economies of some rural areas. Over the longer run, as world prices recover and farm production decisions are based more on comparative advantage, it can be anticipated that trade volumes will expand, resulting in increased business for private trading firms and a positive economic impact on rural communities.

If government revenue saved by downsizing EEP is folded into the MPP to enhance demand for agricultural products, then additional positive economic impacts for the farm and rural sector can be expected as prices rise, production increases and trade volumes expand. Consumers should anticipate slightly higher prices due to increased foreign demand for basic commodities and processed goods. See *Commodity Promotion Policy in Domestic and Export Markets* leaflet for more discussion of MMP.

Export Credit Guarantee Program Alternatives

Status quo. Export credit guarantees have had positive impacts on U.S. farmers by increasing the demand for U.S. agricultural products and resulting in greater exports than would have occurred without the program. Export credit promotes long-term market development and allows U.S. products to be more competitive.

Agribusinesses are beneficiaries of export credit programs. As credit is extended and exports increase, agribusinesses, especially private trading firms, experience an increase in volume of business. In most cases, export sales made under the GSM programs are in addition to exports which would

have occurred without the program and result in significantly greater trade volume for some firms.

Rural communities may benefit from GSM, particularly if grain and processing facilities are located nearby, and these communities may experience greater business volume as exports increase. Allied industries such as fuel, power, building construction, transportation and banking may also gain.

If export credit guarantees increase sales substantially above historical levels, farm prices will rise. In some cases these higher prices will result in U.S. consumers paying slightly more for some food or fiber products. The magnitude of the price increase to consumers depends upon the extent to which bulk or processed products are exported under GSM. Bulk commodity price increases are less likely to be passed on to consumers than increases in final goods prices.

The amount of government exposure under GSM depends on several key factors. GSM programs encourage U.S. banks to finance exports at commercial interest rates to countries which would otherwise not qualify for such loans. As the credit programs have grown to exceed \$5.0 billion in most years, default by foreign banks or governments has become more important as U.S. government exposure has increased. However, if export credit is effective at increasing exports and raising farm prices, then deficiency payments to farmer would be expected to decline as market prices rise, hence government outlays to farmers would also decline. The net government exposure under GSM depends

upon whether or not reductions in deficiency payments to farmers exceed potential loan defaults by foreign banks.

Increased GSM funding.

One possible export policy option is to increase funding of GSM programs. It is likely that this increased funding will target value-added food products, such as meats, fruits and vegetables and dairy products. It also is likely that target markets will continue to be developing countries which without GSM assistance would not be able to purchase U.S. food/fiber products. Under these circumstances, it can be anticipated that U.S. government exposure to the possibility of default by foreign banks or governments would increase.

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U.S. Foreign Food Aid Policy

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Background

U.S. foreign food aid programs historically have tried simultaneously to accomplish many objectives. Among these goals have been alleviating hunger and malnutrition, disposing of surplus food stocks, developing international markets to expand U.S. exports, stimulating economic development in recipient countries and promoting U.S. strategic and foreign policy interests. As a result of these often competing goals, U.S. food aid programs have traditionally been the target of much criticism regarding the efficiency and efficacy of food aid provision.

In an attempt to address these criticisms, the 1990 farm bill incorporated some of the most fundamental changes in U.S. foreign food assistance programs in recent memory. The primary goal of U.S. foreign food assistance programs was restated to "promote the foreign policy of the United States by enhancing the food security of the developing world." Secondary goals incorporating the humanitarian, developmental and trade expansion goals listed above were also enumerated in the new legislation. Though this still leaves considerable flexibility in

interpreting the goals of U.S. food aid policy, the 1990 act assigned a more explicit focus to the alleviation of hunger and malnutrition than was previously the case. Despite this recent reorientation of U.S. policy, a number of issues remain that can be expected to emerge in discussions surrounding the 1995 farm bill.

Current Situation and Forces of Change

By most measures, food aid represents both a declining portion of global development assistance and agricultural trade. In the early 1990s, annual food aid from all donors totaled \$3.4 billion, representing only about six percent of total overseas development assistance, down from 12-15 percent in the mid-1970s. This relative decline is because of several factors, including reduced availability of "surplus" food commodities in the United States and changing donor preferences for more flexible forms of development assistance. Cereals food aid, which accounts for more than 90

percent of world food aid, amounted to only about five percent of global trade in cereals in the early 1990s, compared to nearly 10 percent in the early 1970s. Amid these changes in global food aid trends, the United States stands out in terms of its reliance on food aid in its development assistance programs. In 1990-92, U.S. food aid averaged \$1.1 billion annually. This was down from the levels of \$1.4-2.0 billion provided as recently as the mid-1980s, and this is down significantly (in real terms) from the levels of food aid provided in the 1960s and 1970s (Figure 1). Nonetheless, food aid still represents about 15 percent of U.S. overseas development assistance. The United States remains by far the world's major food aid donor. Cereals food aid from the United States averaged 7.4 million metric tons in 1990-91 which was more than 57 percent of total cereals food aid provided by all donors. In addition, a large proportion of U.S. foreign food assistance — in FY 1992, 44 percent — comes in the form of other products, including dairy products, vegetable oils, wheat flour, corn meal, cotton and beans.

U.S. food aid is provided through several sources. Until the mid-1980s, the vast share of food aid was dispensed on a long-term concessional credit basis under

Title I of P.L. 480, the original "Food for Peace" authorizing legislation for overseas food aid which was passed in 1954. Beginning in the late 1970s and reinforced by the growth of other food aid sources in the mid-1980s, the proportion of food aid provided under Title I has continued to decline sharply (Figure 2) accounting for only about 37 percent of U.S. food assistance in 1990-92.

Other sources of food aid which have increased in relative importance include Title II (food aid for humanitarian and economic development purposes) which accounted for about 43 percent of food aid in 1990-92. In addition, beginning in the early 1980s, donations of surplus Commodity Credit Corporation (CCC) stocks under Section 416(b) of the Agricultural Act of 1949 increased significantly although these donations are dependent on stock levels and, as such, are highly variable from year to year. A future source of reallocated food aid may be Title III of P.L. 480, which was enlarged under the 1990 farm act to provide bilateral grants of food aid on need-based criteria. Consistent with the

traditionally important role of foreign policy criteria in allocating food aid, a few recipient countries have typically accounted for a large proportion of U.S. food aid donations. Countries of strategic interest — Egypt, El Salvador and Pakistan, to name a few — have historically received large food aid donations regardless of needs which might be based on criteria such as population size or severity of poverty and malnutrition. The shift in U.S. food aid policy in 1990 toward more explicit food security and economic development goals should gradually redirect U.S. food aid to more needy countries.

Issues

Much of the food aid policy debate surrounding the 1995 farm bill can be expected to center around the following issues:

- What is the current and future adequacy of food aid donations by the United States and other donors in light of global

developments in both the demand for food aid and food supplies?

- Has the efficiency and effectiveness of U.S. food aid provision improved with recent changes in program administration? Should greater amounts of food aid be provided in more flexible form such as increased monetization of food aid and greater use of such mechanisms as local purchases and triangular transactions?
- Should cargo preference provisions which subsidize the U.S. merchant marine industry be cut back or eliminated for shipments of food aid commodities?
- What is the additionality of agricultural exports provided in the form of food aid, especially in light of declining food aid commitments under Title I of P.L. 480? Is food aid an effective way of developing markets?

These issues are addressed briefly below in the context of policy alternatives and their likely consequences, which are likely to emerge in farm bill discussions.

Policy Alternatives and Consequences

The far-reaching type of review that U.S. food aid policy underwent prior to the passage of the 1990 farm bill can be expected to occur only periodically. With

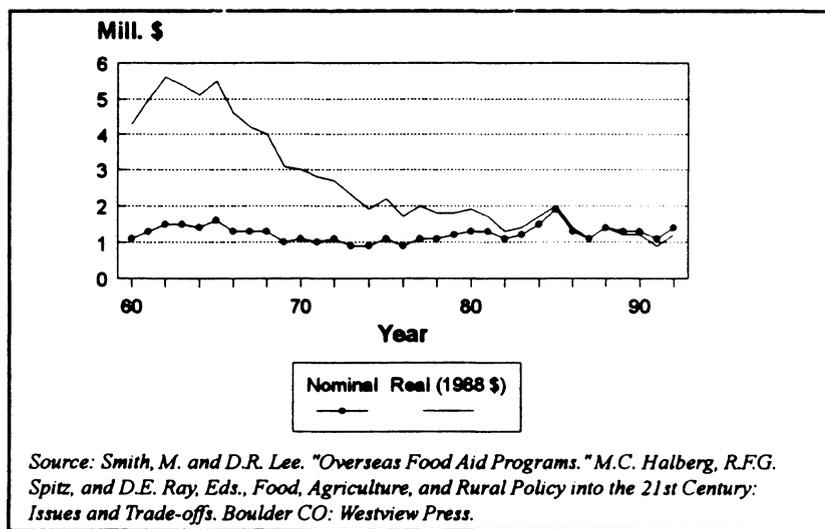


Figure 1. U.S. Food Aid, 1960-92

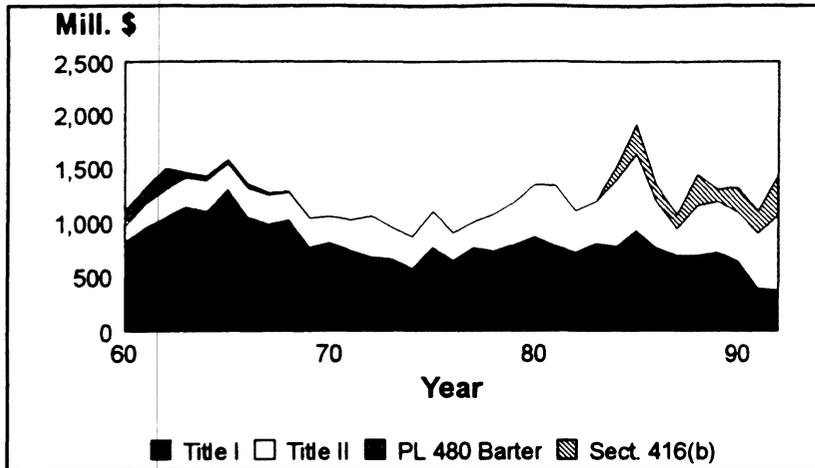


Figure 2. Components of U.S. Food Aid, 1960-92

the goals of U.S. food aid policy redefined in the 1990 farm bill and accompanying administrative changes put in place, it seems unlikely that additional fundamental changes in food aid policies and procedures will occur in the 1995 bill. Rather, it appears likely that much of the debate will center around the overall level of commitments to foreign food aid and procedural and management changes in the existing food aid programs in order to make them more effective and efficient.

Meeting global food aid needs

The policy debate on the supply of U.S. food aid only addresses one-half of the equation; food aid supply must be measured against the backdrop of continuing demonstrated needs for food assistance around the world. The National Research Council's 1989 report on food aid needs projected global food aid requirements by the end of the century at between 30 and 50 million metric tons annually. Current food aid is approximately one-half this level. In other words, food aid would need to be

doubled to meet world food needs. In addition, a number of factors suggest that the earlier NRC estimates may underestimate future food aid demand. For example, the difficulties faced by the newly independent republics of the former Soviet Union and Eastern Europe in supplying their domestic food needs imply that these countries may represent an additional source of food aid needs unforeseen at the time of the NRC report. Other short-term emergency food aid needs, such as those currently existing in numerous East African countries and Bosnia, are notoriously difficult to predict whether stemming from natural or man-made causes.

The recently concluded Uruguay Round of the multilateral the General Agreement on Tariffs and Trade (GATT) negotiations may also hold implications for global food aid supplies. Most estimates of the effects of GATT trade liberalization have forecast somewhat lower supplies and stock levels and higher prices for commodities which experience reduced levels of trade protection. Although these outcomes may be moderated by the lengthy scheduled phase-in of many new GATT

provisions, long-term food aid availability from food secure, net importing countries may be reduced, and food aid that is provided may become more costly. Retaining the ability to provide *bona fide* food aid to needy low-income countries was a widely supported goal in the GATT negotiations, but maintaining the ability to provide this aid in light of GATT-induced policy changes will be dependent on careful monitoring of both food aid needs and the effects of multilateral policy changes.

Given the situation of substantial and growing global demand for food aid, a central issue facing U.S. policymakers in 1995 will be whether the United States should increase, or decrease or simply maintain its overall commitment of resources to foreign food aid programs. If food aid commitments are increased, the consequences — in direct proportion to the size of the increase — would be smaller domestic supplies of food aid commodities, higher prices (to the benefit of producers and to the detriment of domestic consumers), greater benefits to the U.S. merchant marine, improved food availability and nutritional status of food aid recipients abroad, and an increased developmental impact of monetized aid. Decreases in food aid commitments would clearly have the opposite effects. The chosen mix of program commitments will also influence the overall effects both in the U.S. and abroad. An example of this is whether food aid is provided in-kind (as in Title II emergency food assistance) or is monetized.

For a variety of reasons — overall budgetary constraints, the current dominance of domestic over foreign concerns in the

national agenda, the long-term declining trend in total U.S. food aid commitments, etc. — it seems unlikely that significant new food aid allocations can be expected as part of the 1995 farm bill. Rather, it appears most likely that the debate will center on improving the policies and procedures characterizing existing programs.

Improving the efficiency and effectiveness of food aid programs

Even with unchanging commitments of resources, improving the effectiveness of existing programs can enhance the actual realized effects of food aid programs. Because of this fact, the long-standing criticisms of U.S. food aid programs, and the recent policy changes (in 1990) that may warrant refinement, demands in the 1995 debate for further changes in U.S. food aid programs can be expected.

The historical multiplicity of objectives of U.S. food aid programs has been at the root of most of the criticism leveled at these programs over the years. Addressing U.S. foreign policy goals, as mentioned previously, has resulted in much of U.S. food assistance going to countries of strategic interest, rather than to those with genuine needs as defined by poverty or malnutrition-based criteria. These latter countries, in turn, have only infrequently coincided with those countries targeted for long-term market development. Similarly, the well-documented disincentive effects of free or subsidized food aid entering local markets and often depressing farm prices, reducing local food production and inhibiting agricultural development has at times

created a direct conflict with achieving food security objectives, which is one of the expressed priorities of food aid policy.

The 1990 farm bill attempted to address a number of these long-standing criticisms by refocusing U.S. food aid policy goals on the food security and developmental goals of low-income countries. In doing so, administrative changes were introduced to attempt to make U.S. food aid programs more efficient and effective. Administrative control over the various food aid programs was divided with USDA receiving jurisdiction over Title I and the Agency for International Development (AID) managing Titles II and III. Program flexibility was enhanced through establishing a minimum level of monetized aid (10 percent of Title II aid), allowing for local food aid purchases in recipient countries and restructuring Title II to permit the distribution of non-emergency food aid through private voluntary organizations (PVOs) and intergovernmental organizations. New Title III provisions authorized food aid on a government-to-government grant basis, rather than as concessional loans, and it increased the flexibility in using local currencies generated by food aid sales for long-term development purposes.

Notwithstanding the increased flexibility of U.S. food aid as a result of the 1990 legislation, a recent U.S. General Accounting Office (GAO) report concludes that a number of the changes have not been fully implemented and/or have not had their desired effects. The GAO states that AID has not developed adequate guidance as to how food aid programs should enhance food security. Some officials believe that food security is best achieved by alleviating poverty through overall economic

development, while others prefer shorter-term highly targeted projects. The extent to which PVOs should have discretion in using food aid and how their goals are integrated into AID's objectives remain to be clarified. According to the GAO, monitoring and evaluation of food aid programs and the use of local currencies generated through food aid are not accomplished systematically, so the lessons learned are not being adequately used to improve the effectiveness of these programs. It is likely that those with an interest in furthering the humanitarian and developmental goals of food aid will continue to seek greater flexibility in its provision and increased accountability within the agencies administering the programs including USDA and AID. Additional flexibility can permit the use of food aid in addressing short-term emergency food needs which arise. Calls for increasing the mandated minimum levels of monetized aid and for taking better advantage of locally available food through such mechanisms as increased use of local purchases of food for distribution within the recipient country and "triangular transactions" (purchase of food in a nearby third country for distribution in the targeted recipient country) can be expected.

Additional changes in the flexibility of food aid provision will have the effect of increasingly redirecting U.S. food aid programs to more closely resemble those of other donors. Increased accountability on the part of USDA and AID may be sought through such means as clarifying how specifically food security objectives in recipient countries are to be achieved through food aid, more widespread and systematic use of monitoring and evaluation proce-

dures and clarifying the role of PVOs with respect to the distribution of food aid.

Many of these prospective changes are procedural and administrative ones and are not matters necessitating fundamental policy changes. Yet, given the major changes in food aid policy in 1990 and the limited prospects for large-scale increases in food aid allocations, changes in these procedures and management practices are likely to figure prominently in future farm bill discussions as interested parties attempt to achieve the greatest results from limited resources.

Reforming cargo preference laws

So-called "cargo preference" provisions of U.S. maritime legislation require that 75 percent of U.S. food aid be shipped on U.S.-flag vessels. Since shipping costs on U.S. vessels far exceed those on vessels registered elsewhere, the effect of these provisions is to use "captive" food aid shipments to provide support to the U.S. merchant marine. Even though AID and the Departments of Agriculture and Transportation together pay three-quarters of cargo preference costs, there is still a cost premium that ultimately must be paid from food aid program budgets.

In the aggregate, the added landed costs of food aid shipments due to cargo preference can be quite substantial. An earlier (1990) GAO report concluded that the cost differential between U.S. and foreign flag vessels amounted to less than 10 percent of food aid expenditures. However, the recent 1993 report states that the costs of transporting Title II and III commodities, while varying by

region, ranged from 45.3 percent of program costs in Africa to 26.7 percent in Latin America and the Caribbean in fiscal year '92. In the same fiscal year, 1.9 million metric tons of Title II food commodities worth \$467 million were distributed to 68 countries with total additional transportation costs of \$321.8 million.

Since aggregate food aid program expenditures can be expected to remain constrained by national budgetary realities and other factors, increased pressures to reform cargo preference requirements so as to free up additional resources for food aid itself can be expected in 1995. The relatively small U.S. merchant marine, ship owners and employees would lose from such reforms, while domestic farmers and exporters of food aid commodities, foreign shippers and the recipient nations themselves would gain. As the GAO concluded in a 1990 report, the U.S. merchant marine has in fact not been kept "viable and competitive" by cargo preference and related legislation. As budgetary constraints make the trade-offs between food aid and cargo preference benefits increasingly apparent, it can be expected that cargo preference provisions will come under increasing scrutiny.

Food aid additionality

One of the recurring issues in the food aid debate is the extent to which food aid can be successfully used as a market development tool in which case food aid may be complementary, at least in the long term, with commercial imports as opposed to a recipient country's reliance on food aid to simply substitute for commercial food imports. To the extent that food aid is "additional" to commercial

imports, importing countries' food supplies are increased thus benefiting the food exporting countries who are supplying an overall larger market. The "usual marketing requirement" (UMR) of food aid agreements has been a way of protecting commercial markets by requiring recipient nations to purchase their usual commercial imports in addition to receiving food aid in a given year.

Considerable evidence exists, however, that because of widespread circumvention of UMR constraints, food aid likely does substitute for a portion of commercial imports of individual countries. To the extent that this occurs, the market development objectives of food aid programs are likely to suffer. It may be the case that rather than enhancing market development, food aid shipments may simply help maintain exporter market share and market presence at a time when commercial exports decline. If Title I food assistance, the traditional market development tool of U.S. food aid, is further scaled back in the 1995 farm bill, U.S. producers and exporters, as well as developing country recipients, would be adversely affected. However, U.S. taxpayers would benefit from lower program expenditures.

Conclusions

In the current environment of government program cost containment, it seems likely that much of the food aid debate prior to the 1995 farm bill will revolve largely around levels of program costs. In the face of increasing global food aid needs such as those documented by the NRC report, U.S.

food aid program expenditures have been constant (in nominal terms) and declining (in real terms) over the past three decades. While these trends appear to have stabilized since the mid-1980s, overall federal budgetary constraints will likely continue to limit the prospect of significant new food aid allocations. However, changing economic circumstances in such areas as Eastern Europe or unforeseen emergency food aid needs might change this scenario. Within the overall cost limits imposed by budgetary considerations, there will likely be continued attempts to achieve greater efficiencies in food aid provision

through changes in the operation and management of food aid programs. A gradual redirection of food aid to truly needy countries may also be expected as a continuing outgrowth of the 1990 policy changes.

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Food Assistance Policy

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Background

Assuring an adequate supply of nutritious food to all citizens at a reasonable price is an important goal in any country. National political and economic security depends on well fed, healthy citizens and educated productive workers. These goals justify food and agricultural policies that ensure the production of abundant and safe food that sells at reasonable prices. Having accomplished this in the United States, there are still many low income households that can not afford to purchase adequate food. Food assistance programs help provide the necessary food and nutrition requirements for economically vulnerable citizens.

The first U.S. food assistance programs were established during the depression of the 1930s. With an objective of stabilizing farm prices and incomes, the government purchased surplus agricultural commodities and distributed them to needy households and to school lunch programs. The government also initiated a food

stamp program, which gave poor households food stamps with which to purchase food in stores. These food distribution and subsidy programs served primarily suburban consumers and were supported by rural politicians in exchange for urban politicians' support of farm programs.

Over the years, the primary objective of U.S. food assistance policy has shifted from stabilizing farm prices and income to alleviating hunger, malnutrition and poverty. Accordingly, the trend has been to de-emphasize the direct distribution of food and emphasize the delivery of food purchasing power to the poor. There is remarkably strong support for the food assistance programs because of the following consequences:

- Hunger evokes strong emotional reactions.
- Food consumption garners broad-based support.
- Taxpayers know more about how their money is spent.
- Targeted programs work more efficiently.

Current Situation and Forces of Change

Food assistance policies include a combination of food distribution programs, nutrition education and research programs and food purchase subsidies with the latter being the largest. Administered at the state and local levels, food assistance programs are largely financed by the federal government, but administrative costs are split with state and local governments. The annual federal cost of \$34 billion is more than federal expenditures on all farm programs.

The food stamp program (FSP) is the largest U.S. food assistance program. It currently serves about one in 10 U.S. citizens and accounts for 70 percent of federal spending on food programs or around \$22 billion annually. The FSP subsidizes food purchases by giving participants

coupons exchangeable for food in retail grocery stores. The dollar value of coupons received depends on household income and family size and is adjusted for inflation. In 1992, the maximum a family of four, with no income, could receive was \$360 per month. In that year, each food stamp recipient received an average of \$826 for food, 75 cents per meal. The program sets a national welfare benefit standard because it is non-categorical, has nationally uniform eligibility criteria and benefits and is quickly adjusted to changes in economic conditions. Between 1980 and 1992 benefits increased in real terms by an average of \$9.50 per month per recipient. Food stamps have been referred to as America's second currency since they supplement income transfers to the poor and because of the sometimes fraudulent use of food stamps to purchase commodities other than food.

The School Lunch Program (SLP), the largest recipient of surplus commodities and the largest child nutrition program, served approximately 24 million children daily in about 89,000 schools for a cost of approximately \$4.2 billion in 1992. Forty-one percent of the children served received free lunches for which the federal government pays \$1.66 each. Another 7 percent of the children received reduced price lunches for which the federal government pays \$1.26 each. The remaining children received lunches subsidized at a rate of 16 cents per lunch. School lunch programs also receive food commodities valued at about 14 cents per lunch.

The Special Supplemental Food Program for Women, Infants and Children (WIC) provides food assistance and

nutrition screening, education and health care for approximately 5 million low income pregnant and postpartum women and their infants and children up to age 5 who were certified to be nutritionally at risk.

To supplement participants' diets with foods containing critical nutrients, specific commodities are provided directly and through food vouchers redeemable at grocery stores. There is a network of over 9000 clinics nationwide to serve this program. Because of its targeted combination of nutrition and health delivery, it is generally considered to be a very successful food assistance program. It is estimated to save taxpayers almost \$3 for every \$1 invested just during the first year of a child's life. Past funding has been sufficient for approximately 65 percent of eligible people.

Food distribution programs rely on supplies of surplus commodities provided by the Commodity Credit Corporation (CCC). But when CCC supplies fluctuate, these programs are forced to find other sources of food. Therefore, the Temporary Emergency Food Assistance Program (TEFAP), which distributes food to food banks and nutrition programs that provide prepared food service, has been authorized to purchase commodities in the open market. Likewise with the school lunch and breakfast programs. This purchase and distribution of food to the hungry has tended to shift the program's focus from the disposal of agricultural commodities to the alleviation of hunger and malnutrition.

Nutrition education and research are carried out in conjunction with and support of other food programs. The Extension Food and Nutrition Education

Program (EFNEP) provides nutritional information to those in the FSP and WIC.

Surveys of dietary intake and food expenditures conducted by the USDA provide the basis for nutrition education programs, food stamp needs and monitoring of food safety and health factors such as exposure to pesticide residues and microtoxins.

The forces of change for food assistance policy include the following conditions:

- The rising cost of food programs resulting from more poor people.
- The shifting of support for the poor from other state funded welfare programs to food assistance programs.
- The increasing questions concerning the healthfulness of some foods being distributed.
- The rising costs of time intensive food survey work and the rapid obsolescence of data when eating patterns are changing rapidly.
- The changing political and economic environment has made the coalition of urban and rural legislators less dependable. Moreover, like farm programs, food programs are legislated as need arises and with the annual budget process, not just in a five year farm bills.
- The rising public priorities placed on investment in health care and early education, both of which compete for resources.

- The rising federal budget deficit which dominates federal program decisions of all types.

Issues

The issues arise out of the forces of change and how they support or conflict with the current food assistance programs including the following:

- How should food and nutrition assistance be provided for a growing number of poor? In 1989, the poverty rate was 12.8 percent.
- By 1992, one year after a recession ended, the poverty rate was 14.5 percent and FSP participation had increased 7 percent to 26.6 million.
- Providing economic support for the poor via food assistance programs leads to debates about access versus targeting, benefit levels, in-kind versus cash distributions and work incentives for participants.
- How should the cost of food programs be controlled and contained? After adjusting for inflation, overall food assistance costs increased 50 percent between 1980 and 1992, with the largest increase in the FSP and WIC (see Figure 1). The causes of these cost increases include a larger number of participants, rising administrative costs, deliberate increases in real benefits and the erosion of state level safety net programs.

- Who should deliver food assistance to the poor; USDA, some other welfare agency or both?
- How should useful research and education programs on food and nutrition be designed and delivered?

Policy Alternatives and Consequences

How these issues are resolved will change with perceived needs, technology, financial constraints and public values. Some alternatives and expected consequences are discussed below for three of the largest food assistance programs.

Food Stamp Program Options

Most studies show that food stamps increase household food

expenditures, nutrients available to household members and overall demand for food while increasing food prices only slightly.

Nevertheless the following not necessarily mutually exclusive options continue to be discussed.

- **Status quo:** The status quo helps raise households above the poverty line, but other income supplements are needed to fight poverty. Unlike the FSP, individual states determine the level of support and eligibility for their cash safety net programs, and they have tended to let food stamp benefits substitute for cash.

For example, for a family of three with no other income, AFDC benefits fell 43 percent in the typical state between 1970 and 1992. Today, the average value of AFDC and food stamp benefits *combined* matches real AFDC benefits *alone* in the 1960s, before the FSP even existed.

- **Targeting assistance:** The targeting option focuses assistance on the poorest

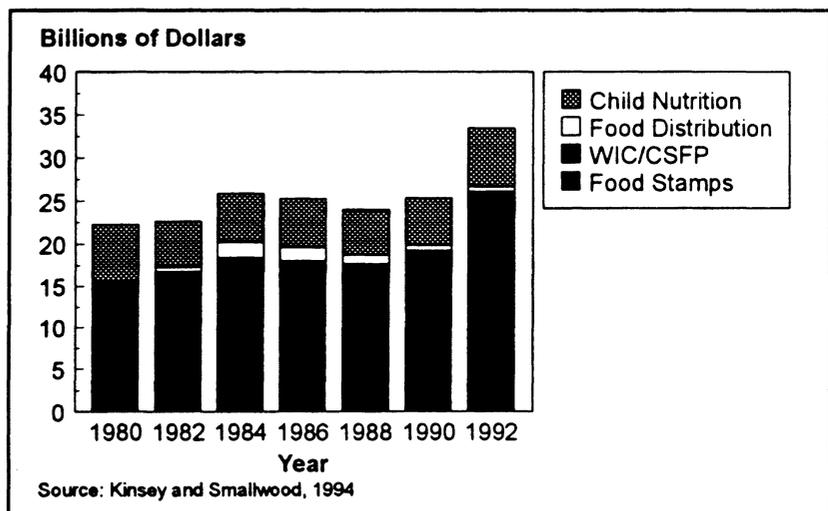


Figure 1. U.S. Food Assistance Costs in 1992 Dollars.

consumers and tends to increase the costs per recipient. In general targeted programs tend to put more money in the hands of government workers (monitors) and less in the hands of recipients, assuming no increase in the overall budget occurs. Focusing on access is consistent with historical intent as well as with new political priorities on investment in human capital. Emphasizing access over targeting tends to increase the total costs as the number of poor rise.

- **Raise minimum wage:** This option would raise the minimum wage so that working people would have enough money to purchase foods for an adequate diet.

The FSP not only helps to feed the poor, but it also subsidizes employers who can pay lower wages as long as people are well fed.

This is a broad and complicated issue, but it is at the center of national income, tax and welfare policy.

Higher minimum wage should lead to fewer working poor, but it could also lead to fewer people being employed because employers reduce the number of employees as the minimum wage rises. The net impact on the costs and participation in the FSP is unclear.

- **Cashing out:** Some economists argue that FSP benefits should be given in cash or checks rather than as stamps because processing food coupons is costly, benefits from multiple programs could be combined thus reducing

administrative costs and recipients would be free to decide what goods and services to purchase based on their own needs and desires.

The USDA has been investigating how much households would reduce their food purchases and nutritional status if they received cash rather than stamps and how much administrative cost savings would occur.

Numerous studies have shown that \$.20 to \$.30 out of every dollar's worth of food stamps goes to purchase food while an average of \$.08 to \$.11 out of a dollar cash benefit goes to food.

Food stamps tend to increase nutrient intake 6 to 12 percent while cash benefits apparently make no significant difference. Administrative cost analysis indicates that the cost of issuing checks are about half the costs of issuing stamps.

Based upon these studies, cashing out food stamps would cause either small or no reduction in participants' food and nutrient intake but would reduce administrative costs, saving taxpayers some money. An all cash transfer would be more likely to lead to combining the FSP with other welfare programs and raise the probability that it might no longer be administered by the USDA but by some other federal agency. As a result, farmers would lose their ability to solicit urban support for an omnibus farm bill that includes food programs. Since cash would no longer be tied to food and hunger, taxpayer enthusiasm might also diminish.

- **Electronic Funds:** An alternative to stamps or cash is electronic funds.

In 1992, states were authorized to use electronic fund transfer as a mechanism for delivering FSP benefits.

By 1994, 30 states were using or developing such a system, and the White House now is promoting it for all food stamps as well as other welfare payments. Although specific systems vary, the recipient is given an identification card which serves as a debit card to a bank account into which the government deposits the dollar value of the food stamps. The debit card may be used to purchase food by inserting it into a point of service terminal and entering a personal identification number.

Assuming the card is not lost or stolen and a sufficient balance is present in the recipient's account, it is charged for the amount of the food purchase, and the merchant's account is credited. Recipients will have much the same consumer protection that is available to other users of electronic payment mechanisms such as limited liability for unauthorized transfers.

While it is not clear whether total government (taxpayer) cost will decline with electronic transfers, recipients and retailers should benefit. Recipients would no longer need to carry cash or stamps to make their purchases and the stigma experienced when counting out food stamps at the grocery counter would be eliminated. Since the account to be debited is dedicated to food purchases, the food and

nutrition consequences should not differ from the current FSP. Retailers would save by not having to handle all the food stamps but would need to invest in electronic funds transfer equipment. In some pilot programs currently underway, the equipment costs have been shared by retailers and local government agencies.

This seems to be an interesting compromise between the benefits of cash to recipients and the desire of taxpayers to maintain some control on how their money is spent.

- **Work incentives:** The current work training program within the FSP has a small target audience.

Almost half of food stamp recipients are on AFDC and, therefore, already eligible for the work training programs.

After subtracting those who are elderly, disabled, already working, or did not finish high school, only about 12 percent are considered to be in need of training and trainable. Dropping this program would save some money, and it not be expected to have a large impact on long term costs, participation or food consumption.

School Lunch Program

The distribution of SLP benefits and the nutritional content of school lunches have been called into question. The following options exist for dealing with SLP issues:

- **Targeting:** The 16 cents per meal subsidy received by the 52 percent of children who are

not from low income households does not necessarily target needy children.

One alternative to the status quo is to provide the 7 percent of school children who currently receive reduced-price lunches with free lunches by using 6 of the 16 cents now being spent on the majority of school lunches for children whose families do not fall in the low income category. The consequences of targeting the SLP would be negligible for taxpayers, positive for the 7 percent of students who would begin to receive free lunches, and negative for the 52 percent who would experience a 6 cent increase in their lunch price.

- **Improving nutrition:** A recent USDA study of the nutritional content of the lunches revealed that students receive more fat and salt and less carbohydrates than they need. To try to improve the quality of meals, the USDA plans to reduce the amount of fat and salt and increase the amount of fruit and vegetables offered to schools. An alternative is to provide money to purchase food and stop distributing food to schools that they would not otherwise purchase.

The nutritional status of children could increase, but a problem would arise about what to do with surplus agricultural commodities owned by the government.

Food Distribution Programs

Since the primary objective of food assistance policy has shifted

over time from farm price and income stabilization to alleviating hunger, the role of food distribution programs has become more problematic.

- **Status quo.** Surplus food commodities are acquired through farm price-support programs and are available for distribution to the poor. While providing resources for food assistance programs, they also suffer from a number of drawbacks. For example, supply of food in terms of surplus fluctuates in a manner completely unrelated to food needs, the mechanism for distributing food is costly and inefficient, and the foods distributed are often high in fat.

- **Discontinue distribution programs:** This option would stop distributing surplus food and provide institutions like schools with funds to purchase nutritious food on the market. A problem with this option involves what to do with surplus food (such as milk and butter) purchased by the government under the price support program. The result may be a requirement for a more market-oriented farm policy.

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Food Safety and Nutrition Policy

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Background

Traditionally, the key policy issues for the agricultural and food sector have focused on prices and quantities. For example, one of the major stated purposes of the 1990 farm bill is "to ensure consumers an *abundance* of food and fiber at *reasonable prices*." Now, however, assuring the quality of the food supply is taking on greater importance. Quality assurance encompasses the management (and often reduction) of foodborne human health risks arising from multiple sources such as microbiological pathogens (e.g., *E. coli*), nutritional risks (e.g., too much fat in the diet), pesticide and animal drug residues and naturally occurring and environmental toxicants. In addition, quality assurance is set in the context that consumption of some foods may help in disease prevention.

Consumers' increased awareness of relationships between food safety, diet and personal health has led them to make quality characteristics more central to their food choices. Producers and processors have a stake in providing safer and

higher quality products in order to attract these consumers, to protect themselves from possible liability attached to inferior quality products and to comply with government regulations. Meanwhile, introduction of new production and processing technologies as well as increases in international trade are altering the mix of foods whose quality must be assured.

In this century, government has played an increasing role in assuring the safety and nutritional adequacy of American diets. While contemporary policy interest in the relationship between diet and health began more than three decades ago with the 1969 White House Conference on Food, Nutrition and Health, food safety and nutrition for the U.S. populace have not been major farm bill concerns. Out of the White House Conference grew the dietary goals and guidelines which signaled the beginning of a new era in nutrition education. A major decision facing the Congress is the extent to which the farm bill should ensure consumers an *abundant, safe and nutritious* supply of food at *reasonable prices*. If the answer to that decision is in the affirmative, the federal government would face the task of coordinating its various agricultural, food, consumer and

trade policies to achieve the specified level of safety.

Current Situation and Forces of Change

The management and reduction of human health risks is on center stage because of the rising costs of health care and the importance of health to individual well-being. Recent large-scale outbreaks of foodborne illness, such as that related to *E. coli* 0157:H7 contamination of undercooked hamburgers sold in Washington, Idaho, California and Nevada in early 1993, add urgency to safety concerns. Partial estimates suggest the societal costs of foodborne pathogens alone range from \$4-12 billion per year. And diseases in which diet plays a part represent 5 of the 10 leading causes of death in the United States. Important elements of the current situation include the following needs:

Food demand

Food safety, nutrition and health are topics increasingly linked both by scientific evidence on diet-health interactions and by consumer-driven changes in food products themselves. Several reports released in the mid-1980s provided a strong scientific consensus of support for the fact that the foods eaten by consumers can affect the likelihood of various health outcomes, such as heart disease and certain cancers. In addition, consumers could choose foods not only for their nutritional value, but also for preventative values, which are not understood. Consumers are also choosing foods in order to control safety risks (e.g., avoiding raw shellfish) and as a means of expressing their approval or disapproval of particular production or processing technologies. Another important factor is consumers' increasing reliance on convenient food sources — including prepared foods sold in grocery stores, takeout, fast food, restaurants, and institutional settings — where final quality control is entrusted to someone else.

Government plays a role in shaping food demand through nutrition education and food assistance programs as well as selection and provision of foods for government programs. The Eating Right food pyramid is an example of coordinated governmental efforts by the agriculture and health communities to develop easy-to-communicate dietary guidance consistent with the most recent dietary knowledge. However, implementing such standards through governmental programs will not come without its costs. Recommended changes to the school lunch program are being met with increasing national and

local resistance, both due to increased costs and to concerns about the feasibility of bringing about such changes in diets through government programs.

Food Supply

Food producers, processors and distributors have a strong interest in providing safe products for multiple reasons including attract consumers, avoid liability, protect themselves or workers from hazards and comply with government regulations. Companies try to anticipate and insulate themselves from controversies regarding particular production and processing technologies (e.g., use of Alar, line processing in poultry plants). Companies also are marketing more products based on their nutritional characteristics because of consumers' increasing interest in nutrition and changes in regulation of label claims.

Scientific progress has allowed production and processing of foods with enhanced health characteristics, such as reduced or no-cholesterol eggs, low-fat cheese products, and meats with altered fat composition. New technologies and approaches to food safety, such as irradiation and biotechnologies, further allow companies to customize the safety and nutrition profiles of products. The new recognition of the contribution of foods to diet and thus diet to health has led to increased common interest in the process of food production and legislation that affects it.

Regulatory Environment

Regulation of food safety and quality in the United States is fragmented, with 12 federal agencies administering approximately 35 laws. Food safety is

primarily the responsibility of the Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA) and the Environmental Protection Agency (EPA). However, congressional interest in rationalizing the following two important aspects of the food safety regulatory system is strong:

- Risk management standards have not been consistent across different sources of foodborne risk due to fragmentation of regulatory responsibilities.
- Organization of regulatory activities where regulatory efforts are duplicated in some areas, while others fall through the cracks, because of split and sometimes uncertain jurisdiction.

Regulatory fragmentation and duplication has brought calls for reorganization of responsibilities including the suggestion of establishing a single food safety agency.

Responsibility for nutrition information and education is also split between USDA, the Department of Health and Human Services (DHHS) and FDA. For nutrition, the regulatory landscape will be dominated in the next few years by the implementation of mandatory nutrition labeling in 1994, by education efforts based on dietary guidelines and the new labels and by efforts to incorporate dietary guidelines into government food provision and programs.

International Environment

The U.S. food supply includes a growing share of imported foods. A recent General Accounting

Office (GAO) report indicates that by 1992, almost half of the fruits and vegetables consumed in the winter were imported. In addition to this, changes in meat processing and distribution have led to increased U.S. exports and imports of meat and meat products. There is a growing need to extend the current regulatory system to monitor increasing food imports to insure that they comply with regulations to the same degree as products produced within the country. At the same time, such efforts will need to take into consideration international trade agreements since international differences in processing, food and labeling standards can potentially pose non-tariff barriers to trade. As a result, stricter national standards for food, unless "scientifically based" on hazards to human health, may in the future be challenged under the new NAFTA and GATT agreements.

Issues

Food quality issues often cut across many policy areas. Consumers, producers and government agencies have a stake in changes in technology related to the safety and nutritive composition of foods. One example is the use of somatotropins and Beta-agonists in the production of meats. Adopters of these growth promotants may gain increases in overall production, and in the production of leaner meats. Consumers may be able to purchase leaner meat (produced with the use of growth promotants) at a lower price. Such trade-offs pervade contemporary food safety issues. They can be expected to maintain farm income, the competitive position of the U.S.

food industry, and the level of exports. For each of these areas is can be expected to affect the future design of legislation, not only in food safety, but also domestic farm and trade policies.

Responsibilities and the Role of Consumers and Private Markets

What should be the roles of producers, processors, distributors, consumers and government agencies in assuring food safety and nutritional quality? What types of information are necessary for consumers to make informed choices about the safety and nutritional content of the foods they buy? To what degree should government purchases be guided by dietary standards? To what degree can we rely on private markets to develop for food quality and how important are labeling requirements to this development?

Risk Standards and Policy Goals

What levels of safety are desired and what risk standards should be applied to domestic, imported and exported foods? Should standards focus on expert risk assessments, consumer risk perceptions or a combination of the two? With expert opinion and consumer views constantly evolving, should standards evolve over time? Should risk standards be consistent across foodborne risk sources (e.g., risks from pesticide residues and foodborne pathogens)? How can policy goals in the food quality area be coordinated with those in the agricultural, consumer and environmental areas?

Organization of Federal Regulatory Activity

How should the federal regulatory system be organized to achieve the desired risk management and reduction goals? What types of regulatory programs will give the best incentives for safety and quality control at the most cost-effective points in the vertical chain of production, processing, distribution and consumption?

Adaptation to New Technologies and International Trade Relationships

How can the food system best adapt to changing technologies including biotechnology, processing methods and testing procedures? How should agricultural and regulatory policy adapt to the impact of new technologies on product supply, safety, quality and identity? How should the domestic quality assurance system adapt to new free trade zones and global trade agreements? How can the U.S. food system best respond to greater demands for safety from our trading partners such as the European Union and Japan?

Policy Alternatives and Consequences

The food safety, nutrition and health aspects of food and agricultural policies often challenge traditional agricultural interests. Like environmental concerns and taxpayers' interests, they are claiming a larger role in the

fashioning of these policies. In the past, farm bills themselves, with relatively minor exceptions such as the provision for the institution of organic certification standards in the 1990 bill, have not been a legislative vehicle for the federal government's food safety assurance programs. Farm bills, however, have been the means of authorizing several food assistance programs. While there are several broader alternatives that are important to food safety and nutrition policy in general, those crafting new farm bill legislation will face several policy alternatives that relate to the extent it will address safety and nutrition issues. Policy alternatives include the following:

Maintain the status quo by leaving food safety assurance largely outside the farm bill framework

This approach would maintain the current level of separation between farm and commodity policies, which are largely price and quantity oriented, and food safety and quality policies. The separation may make both types of policy a more manageable size and avoid adding complexity to already complex programs. However, this approach would not directly contribute to achieving greater consistency among price, quantity, environmental, safety and nutrition concerns.

Incorporate food safety and nutrition goals and programs more directly into the farm bill framework

This approach would, when appropriate, modify farm bill programs in order to increase their

contribution to food safety and nutrition goals. This might be accomplished in a way comparable to the inclusion of environmental concerns in the farm bill through the introduction of various types of what may be, broadly called "cross-compliance" requirements. Examples might include incorporating nutritional considerations into determining the relative merit of specific commodity programs, tying the receipt of program benefits to meeting pesticide or animal drug residue standards or limiting the use of high-fat products in government purchase and food assistance programs.

This approach might contribute to the coherence of federal policy and to more efficient accomplishment of overall social goals. A concern with incorporating food quality issues into the farm bill is that an already extensive piece of legislation would become more unwieldy. Incorporation could also yield more complex programs that might not offer clear incentives to producers or processors. For example, producers may decide not to participate in the farm program, thus reducing the overall ability of the program to satisfy its maze of objectives. There would also be some concern about the USDA's commitment to a broader spectrum of goals. For example, there was considerable controversy and some hesitation when USDA's proposed adoption of the Eating Right food pyramid, which recommended a lesser importance of animal meat consumption in a healthy diet and encountered the interest of meat commodity groups in maintaining or expanding sales.

Increase the farm bill's contribution to food safety and human nutrition by increasing funding for basic and applied research in these areas

The farm bill has traditionally authorized significant funding of scientific research relevant to the agriculture and food sectors such as the plant and animal sciences. Food safety and nutrition topics have received little of this support perhaps reflecting a stronger focus at USDA on farmers and the food industry, rather than consumers as clients. This policy alternative would direct more research effort toward the technical (e.g., sources of foodborne pathogens), informational (e.g., how consumers use new information) and economic (e.g., costs and benefits of alternative programs) aspects of food safety and nutrition. A concern about this policy is that the returns to the expenditures as in other areas of research are not certain.

Place more reliance on firms and consumers to provide food safety and nutritional quality assurance

This approach would change, and perhaps lessen, the federal government's role in assuring food quality because it relies more on private knowledge and incentives rather than government standards. Since quality control is a complex process, this approach might encourage safety efforts to be taken at the points where they are most effective and cost efficient. For example, many companies specify food safety standards in their procurement contracts, and often enforce standards tougher than

those of the government. The federal government could encourage private initiatives, for example, implementing a Hazard Analysis Critical Control Points (HACCP) approach to food safety at the company level, which would require firms to design and implement extensive quality control plans to assure food safety. This would likely involve some shift in emphasis in government activity away from directly inspecting production processes to monitoring company quality control plans. This approach could also require scrutiny of and harmonization of risk standards across foodborne sources in order to yield a coherent risk management approach.

A greater reliance on private markets and incentives, including consumer responsibility, often places a larger premium on the availability of reliable information. Thus a private market approach might incorporate information requirements, such as labeling and consumer education, to facilitate private food choices. With the

implementation of mandatory nutrition labeling by FDA and USDA, this approach is being used for communicating the important nutrition characteristics of food products. However, a major concern with this policy alternative is whether it would provide satisfactory overall safety and quality levels, and whether all members of society would have equal access to safe food.

Centralize responsibility for food safety and nutrition policy within the federal government

This alternative, which would consolidate responsibility for regulation of food safety risks, labeling and management of education programs in one agency, is currently under consideration in Congress. Possibilities for consolidating nutrition research, guidance and education into one agency also exist. Consolidation might result in more consistent regulation of risk across sources (e.g., pesticide residues versus pathogens), across

food types (e.g., fresh meats versus packaged vegetables), across the introduction of new food production, processing and packaging technologies and new health research. It might also allow a more coordinated response to changes in safety and quality standards for foods moving in international trade. A concern about this policy alternative is whether the variety and complexity of tasks to be accomplished would overwhelm a single agency's ability to perform them.

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Research and Education Policy

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Background

The U.S. public sector agricultural research and extension system, a dual federal-state system, had its origins in the 1860s. In the late 19th century, the system truly began to acquire the capacity to provide the scientific knowledge needed to deal with problems of agricultural development. Today, the federal agricultural research and extension establishment includes the U.S.

Department of Agriculture's (USDA) Agricultural Research Service, Economic Research Service, Extension Service and Forest Service; and the State Agricultural Experiment Stations (SAES) and State Cooperative Extension Services (SCES) located within the land-grant university system. This paper focuses on issues for SAES and SCES at land-grant universities

The land-grant university system was established in 1862 with the passage of the Morrill Act. The impetus for establishing these land-grant schools arose from both a populist reaction to the elitism of universities in the eastern United States and a perceived need to provide higher education to the masses with particular emphasis on the children of farmers and industrial workers.

Land-grant universities are distinguished from other universities by their legislatively mandated mission, their federal-state partnership embodied in formula funding and their integration of research, teaching, and extension. Most

academic departments in colleges of agriculture have three functional budgets, one for teaching, one for research and one for extension. Individual scientists tend to have joint appointments in one or more of these functional areas although a number of institutions still do not utilize joint appointments.

The legislated mission of the system is the following: 1) to provide higher level education to the masses 2) to apply research knowledge to the solution of society's problems and 3) to provide outreach or extension programs. The target audience for this mission has included farmers, agribusiness, rural residents and consumers. The system has historically been very successful - especially when measured by returns on investment. Positive internal rates of return ranging from 20 to 40 percent have been attributed to research, extension and training (Table 1).

Over time, however, the sense of institutional mission has declined as research has become more basic and more focused on increasing disciplinary knowledge rather than on solving the problems of society. At the same time, less emphasis has been given to the development and adaptive research needed to apply basic research to solving social problems through the extension and outreach functions. When the system was

Table 1. Internal Rates of Return to Public and Private Agricultural Research, Extension and Farmers' Schooling, 1950-1982.

Source	Internal Rate of Return (percent)
Public Research	40.6
Private Research	46.3
Public Extension	20.1
Farmer Training	40.0

Source: Wallace E. Huffman and Robert E. Evenson, *Science for Agriculture*, Iowa State University Press, 1993.

first established, disciplinary specialization had not yet progressed; therefore, it was easy to obtain multidisciplinary cooperation among scientists and to communicate the research results to lay people. Communication across disciplines and to lay people has become more difficult.

Rapid post-World War II advances in knowledge and increasing specialization has made interdisciplinary cooperation in research and extension increasingly difficult. Specialized language, compounded by the scientific illiteracy of the public, has increased the difficulties in communicating research results to the public. This situation will be even more problematic for research conducted with the tools of biotechnology. The lack of understanding of these technologies has raised public concerns as well as a call for the end of this type of research in some cases. The basic premise that the same faculty can efficiently fulfill the multiple missions of the modern land-grant university still prevails, but tensions are growing in the system as it becomes more and more difficult to achieve these multiple ends.

The ability of the land-grant system to carry out its historic mission is becoming increasingly suspect. Internal as well as external pressures could significantly alter the function and structure of the system. Changing political support, resource base and institutional frameworks combined with new technologies will put pressure on the system to change.

Forces of Change

The Political Environment

Historically, political support for the agricultural research and extension system has come primarily from the farm and rural population. As a result, the system has placed heavy emphasis on increasing the productivity of agriculture. However, agriculture's traditional base of support has been eroding steadily. Farm numbers and populations have been declining and today more than 75 percent of the total U.S. population resides in metropolitan areas. Of the 435 members of the House of Representatives, less than 100 represent rural districts. Even fewer represent "farming dependent" districts.

Public interest groups have become increasingly critical of the emphasis on productivity in agricultural research. *Silent Spring* and *Hard Tomatoes, Hard Times*, both published more than two decades ago, criticized the system for its failure to consider the problems of rural communities, the environment and consumer needs. More recently, environmental, consumer and animal welfare groups have become increasingly active in farm bill debates. Additionally, these groups have challenged the universities themselves by bringing forward law suits on the use of public funds for research that increases productivity by displacing labor. For example, in 1980 a law suit was brought against the University of California system for the development of a

mechanical tomato harvester in part because one impact of the harvester was to result in farm worker layoffs.

The changing U.S. demographics combined with the increased activism of a wider range of constituents is changing the climate in which the land-grant system conducts research. The 1985 farm bill contained several conservation measures impacting agricultural research, teaching and extension. Many more such measures were added in the 1990 farm bill. Several environmentally-oriented initiatives, such as the groundwater initiative and the low input sustainable agricultural initiative, have impacted the research and extension agenda. Congress increasingly has earmarked agricultural research and extension funds to help the system adjust more quickly to these new priorities.

The political climate is changing at the state level as well. This is evident as state agricultural income dwindles as a share of total income. In 1980, nearly 29 percent of nonmetropolitan counties received at least one-fifth of their total income from farming-related industries. That number had dropped by 1986 to 21 percent and it continues to decline. During past recessions, state support for the land-grant system generally has remained strong, but during the early 1990s, as state budgets have become severely constrained, support for the land-grant system has wavered.

The Resource Base

Although total agricultural research funding has increased slightly over the last decade, in general agricultural research is underfunded based on the high

rates of return on investment discussed earlier (Table 1). The states provide the majority of the funding for research at the state experiment stations, and through the 1980s, state support increased by 58 percent (Figure 1). An increasing share of funding for state extension is from county, state and private/self-generating sources while the share of federal funding continues to decline (Figure 2). Funding within states for extension increased by nearly 89 percent during the 1980s, which was 25 percent in real terms. Moreover, the recession of the early 1990s has constrained state budgets, resulting in few increases and in many cases declining state support for both research and extension — particularly in real terms.

The USDA is the second largest single contributor to state experiment station funding. Historically, USDA funding has been in the form of block grant formula funds. Decisions concerning allocation of these funds have been made at the local level. However, USDA funding has basically stagnated and barely keeps up with inflation. Increases in USDA funding primarily reflect congressional earmarking of special grants for such areas as water quality, nutrition, integrated pest management and biological control research.

In response to widespread criticisms of the agricultural research system, a major new funding initiative was undertaken in 1977 to establish a USDA competitive grants program. Competition for funding is open to researchers from both the land-grant and non-land-grant universities and research laboratories. Funding for the program rose to \$97 million in 1992. However, funding for special grants was

reduced over the years by approximately the equivalent amount. Therefore, on net amounts, there has been no increase in grant funds, and funding per grant is small relative to other federal agency grant programs.

Funding from the private sector has more than doubled since 1982. Private sector funding comes from industry or from the sale of products by the university. Currently these sources of income represent 13 percent of the total funding. Analysts speculate that

industry-supported research is not likely to continue growing at such a high rate because many research-intensive industries are reducing their own in-house research budgets. The product sales category also is a potentially lucrative source of funding for universities. Legal and institutional changes, which will be discussed later, have made it easier for universities to capitalize on their research. Income from product sales rose only 8 percent between 1982 and 1986, but

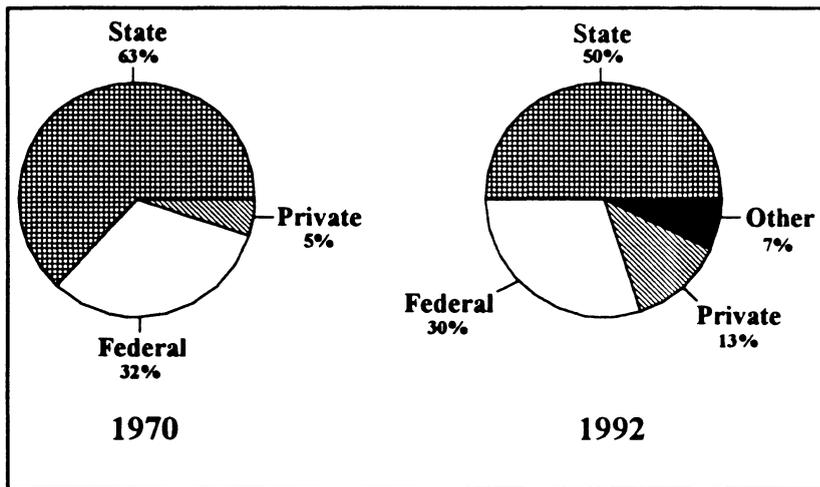


Figure 1. Source of Funding for the State Agricultural Experiment Station, 1970 and 1992.

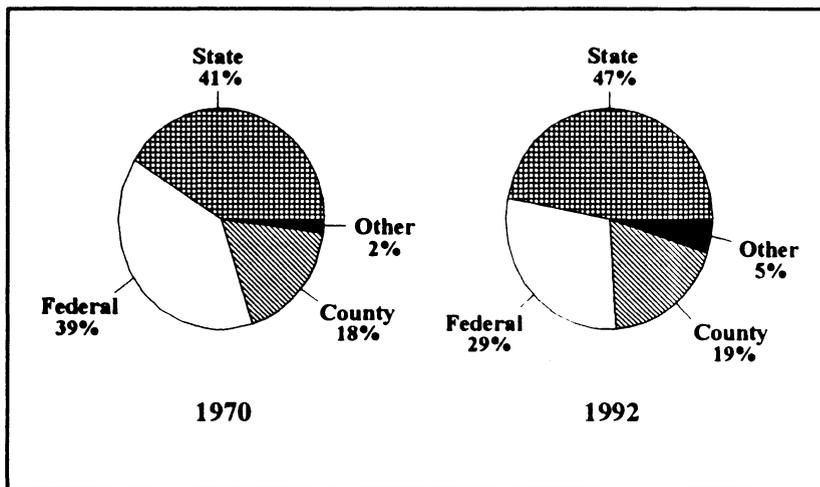


Figure 2. Source of Funding for the State Cooperative Extension Services, 1970 and 1992.

increased 85 percent between 1986 and 1992.

Research funds are not evenly distributed to all experiment stations. The experiment stations in 12 States (California, Florida, Iowa, Illinois, Indiana, Michigan, Minnesota, North Carolina, Nebraska, New York, Texas and Wisconsin) account for nearly 50 percent of the total research funding available to the state experiment stations, nearly 70 percent of the USDA competitive grants, 61 percent of all competitive funds obtained from federal agencies other than the USDA, and nearly 60 percent of all funding from industry support and product sales. The state agricultural experiment station system clearly contains "have and have not" institutions. While all state experiment stations have diversified their funding sources to some degree, the "have not" institutions apparently are unable to attract substantial competitive funding. They, therefore, rely primarily on the traditional sources of funding (state and USDA formula funds). The "haves" apparently are about to attract competitive funding and, as a result, continue to experience overall growth, except in cases where state support has declined.

Extension funds flowing through USDA (approximately 27 percent of total extension funding) are distributed, in part, by mandated formulas. But the funding distribution is not as concentrated as outlined for the experiment stations. For example, the 12 largest experiment station funded states receive about 40 percent of total extension funding and about 30 percent of extension funds through USDA. Although there are some special grants in extension, the extent of grant funding

from the federal government is not as extensive as for research.

The Technology Base

To continue to perform high-level research, universities need to keep abreast of new information and technologies. New biotechnologies and information technologies in particular are yielding powerful research tools that can be applied to questions in a wide range of scientific disciplines. Effective use of these technologies will require new funding or a reallocation of funding from traditional research projects.

The allocation of resources (funding and research personnel) for research classified as biotechnology at the state experiment stations has been increasing. The primary funding sources for such research are USDA and other federal agency competitive grants and private industry. It is likely that significant funds also arise from the licensing of technologies, royalties and product sales.

The same 12 experiment stations that capture most agricultural research funds also are able to capture the majority of the resources devoted to biotechnology research. Indeed, the concentration of resources in only a few experiment stations is even more pronounced for biotechnology than for all agricultural research. Twelve experiment stations capture nearly 64 percent of all biotechnology funding as well as more than 65 percent of all competitive grant and private sector funding.

The Legal Environment

The legal environment in which the agricultural system operates is changing. Congress has for the past 60 years expressly

permitted intellectual property protection of new plants. Since 1980, the U.S. Patent and Trademarks Office has interpreted patent laws to cover not only plants but also microorganisms and animals as patentable subjects. The patent and trademark amendments gave universities, other nonprofit organizations and businesses the option, with few exceptions, to retain the title rights to any federally funded inventions that they developed. And not surprisingly, the universities receiving the most patents are generally larger, research-intensive institutions. Among the top 10 universities receiving the most patents in 1990, six are land-grant universities. The sale of products by the SAES increased from \$58.5 million in 1982 to \$116.1 million in 1992.

The changing legal environment in which the agricultural system operates is changing the system itself. Until recently, only a few institutions aggressively marketed the research of their faculty, primarily by licensing their technology to the private sector. Now, however, venture capital pools, technology development companies and research companies with the goal of transferring technology and making money have become much more common.

Thus, universities now own pieces of or are otherwise involved with new ventures that invest in and commercialize the new technologies they developed. They see these ventures as means of establishing closer cooperation with private companies, ultimately with the goals of inducing the private sector to contribute research funding to the university, of facilitating the transfer of the technology and of helping faculty to see the relevance of their work to real world problems. In

addition, the researchers who create the new technology are now often given a share of the returns.

Issues Raised by the New Environment

The changing environment in which the agricultural research and extension system operates raises the following three main issues for the system:

- What is the appropriate allocation of existing resources? As indicated by the high rates of social return to agricultural research and extension investments, the system as a whole has not been funded at optimum levels. However, increased funding is not sufficient to achieve desired results. Funds also need to be reallocated from current projects to areas that reflect new needs. The appropriate allocation of resources will depend primarily on what society wants the system to accomplish. Resources cannot be allocated appropriately unless priorities are determined and goals established. Today, the research and extension system lacks a statement of goals, action to achieve stated goals and a procedure to evaluate results.

Land-grant universities differ from other universities in that they have a legislated mission to address research and extension programs to the problems of society. Some

argue that the land-grant system has already abandoned its mission, because researchers increasingly work for the laurels of their disciplinary peers rather than society's benefit. In addition, many extension programs are fragmented around a specific discipline while society's problems require an integrated approach. Others argue that the system defines society's problems too narrowly and places too much emphasis on increasing agricultural productivity and too little on nutrition, environmental issues and rural problems. Some also argue that too much attention is given to production agriculture and not enough on postharvest technologies, value-added products, marketing, management, consumer preferences and agribusiness problems.

There are no easy answers as to what types of research and corresponding extension programs that should be conducted with public funds. What is clear, however, is that as the traditional clientele (i.e., farmers) continues to shrink, greater demands will be placed on the system to address the needs of other groups. Universities have a tremendous challenge in attempting to keep farmer support for their programs while at the same time changing the agenda to gain other groups support.

- Who decides what the appropriate allocation is? Historically, decisions on how research funds were allocated were made at the local institutional level. This

approach has been used because most funds were awarded to institutions as formula funds. The institution, with input from local clientele, determined how the funds should be administered. However, competitive grants or funds designated for specific purposes through USDA and other federal agencies are an increasing component of total funding, and these grants are awarded to individual researchers or projects. After some very broadly defined priorities are set at the federal level, project proposals reflect the individual research or extension scientist's personal interests and views of social needs. Decisions concerning which proposals are awarded grants are made by peer review at the national level. The priority areas have become sufficiently broad that proposals in virtually any area could fit in the context of the priorities.

The changes in the legal environment combined with constrained research budgets provide many incentives for universities to increase funding through product sales. This potential privatization of public sector research and extension raises many issues. Incentives to privatize the benefits of university innovations for the benefit of the university rather than society could conflict with the mandated mission of the university. Using public resources to reap private gains raises many ethical questions. Potential abuses result from allowing individual researchers to share in the profits of their work if it was publicly

funded and encouraging universities to produce and sell consumer products. Certainly, there is potential for conflicts of interest if universities and individual researchers are allowed to capture the returns of their innovations. The credibility of a university may suffer if it is viewed as being "too cozy" with industry. An interesting dilemma may arise for a university if its research or extension faculty identify significant hazards with a product or technology that generates profits for the university or for a company with which the university collaborates. If public universities prioritize their own private good above the public welfare, the public may not maintain its support for the university. On the other hand, given the underinvestment in agricultural research and extension as a whole, the additional revenue from product sales could provide great benefits for the university and society. Whether or not the funds are used for desirable purposes will depend on how well university administrators provide leadership to maintain a sense of priority for the overall research and education mission.

- How is the system to be structured to effectively achieve the desired allocation? It is likely that only some universities will benefit from collaborations with the private sector. The same universities that receive the bulk of the public-sector funding also attract the most private-sector

funding, patent the most innovations and receive the largest revenue from the sale of products. As the costs of maintaining university programs continue to rise, only schools that can attract private revenue may be able to continue to maintain a full research, teaching and extension functions. Smaller universities most likely will need to reorganize and cooperate on a regional basis to maintain research programs. Today, neither federal formula funds nor competitive grants, nor state funding mechanisms are designed to accommodate cooperative institutional arrangements.

Policy Options

Issue

The land-grant system is losing its uniqueness as an institution that provides research knowledge to the solution of problems. A strong mission-oriented research and extension system is needed to provide methods, products and technologies to solve key agricultural and rural problems.

Status Quo. Without a clearly enunciated mission-oriented policy, the research and education system will continue to lack direction. Planning and priority setting will continue to be ineffective with no assurances of follow through on initiatives or recommendations of advisory groups. The system will continue to be rigidly structured and resistant to change. Increased

emphasis on basic research combined with accelerated technical change and continued neglect of applied research needs will widen the knowledge gap between research and extension.

Develop a national research and extension policy that is mission oriented and designed to meet the needs of the food and agriculture system. This option would entail the following three components:

- A clearly enunciated mission-oriented policy
- A restructured, integrated and coordinated planning system
- A combination of formula and competitive grant funds consistent with the recommendations of the planning system.

This option could ameliorate problems of a system that lacks a statement of goals, action to achieve stated goals and a procedure to evaluate desired outcomes. Many planning activities exist at state, regional and national levels, but they do so without the necessary commitment of resources to set goals, implement plans or measure progress. Concern exists that this option implies a system of centralized management. This need not be the case. A system could be crafted that relies on input from all research users. This system would also include: determination of priority research and extension needs, formation of multidisciplinary teams (local, regional and national) to solve problems, mixing of formula and competitive grant funds directed toward problem areas and mea-

surement of progress. In addition, the Secretary of Agriculture would take more seriously the responsibility to interview and approve the appointment of state directors of the extension service and experiment stations to help guarantee that new directors are cognizant of the problems and issues involved in revitalizing the land grant university system.

Issue

The new partnership between the public and private sectors potentially can revitalize agricultural research and extension, but it could also bias the overall research endeavor and destroy the credibility of universities. Close monitoring will be needed to understand the changes occurring within the land-grant system and to ensure that they are not undermining the system as a whole.

Status Quo. With little attention given to this changing relationship, universities could be perceived by the public as being “too cozy” with industry. This could undermine universities’ credibility and ultimately have a negative impact on their funding from the public.

Congress could closely monitor the increased private-sector funding of agricultural research. Currently, little is known about the extent of private-sector funding at land-grant universities and the nature of the relationship between the universities and the private sector. Congress could provide oversight of this situation by periodically conducting oversight hearings. Furthermore, Congress could direct USDA to collect data from the land-grant universities on

the extent of public private collaboration and provide guidelines on the appropriateness of various public private sector research collaborations. In addition, Congress could legislatively encourage extension to charge for their products including publications and training. Such action would lessen the pressure to justify these charges to clientele.

Congress could direct USDA to require land-grant universities to establish an explicit policy with regard to research sponsored by the private-sector and report that policy to Congress. Each university using private-sector research funds for agriculture would establish a policy as to how those funds are used based on a broad policy established by the land-grant system. Provision for an advisory board including members of the public to set spending priorities for the funding of research and extension from the private sector might be a part of such a policy. This would help to increase the confidence of the public that the university is using these funds to solve problems that confront society as a whole rather than serving the best interests of private farmers.

Issue

High rates of return to public-sector investments have been reported by numerous studies. This a clear indication that public-sector research funding is below socially optimum rates.

Status Quo. If the federal government continues to shrink from its partnership with the states in the funding of research and extension, land-grant universities have no choice but to look for alternative

sources of funding or to limit programs. Private-sector funding from specific industries, individual firms or product sales from technologies developed by the university are the most likely sources of additional funds. The impact of this shift in support is unknown.

Congress could increase public-sector support of agricultural research and extension. Increasing public-sector support of agricultural research might help to lessen the pressure on land-grant universities to try and obtain funds from the private sector. This would lessen the perceived conflicts of interest that arise with pursuing private funding. Given the high rate of return on public-sector funding of agricultural research and farmer training, increased funding is a good investment for the future.

Issue

Land-grant universities have been and are now rapidly developing into “have and have not” universities. In this situation it is difficult for the “have not” universities to individually fulfill their historic responsibilities.

Status Quo. The states would continue to have the major responsibility for finding a solution. Possible solutions could be in the form of increased funding to the university to provide at least minimal services in all traditional activities, eliminating some activities and reallocating those funds to high priority activities or working with other states to jointly determine activities suitable for cooperation. However, if the decision is to work with other states, federal legislation could be

an obstacle by its current constraint on the proportion of federal funds that can be used for regional projects.

Congress could increase Federal funding for multiregional projects as opposed to institutional or individual funding.

There is nothing magic about state boundaries, yet they have defined agricultural research problems and extension programs since the inception of the system. Most cultural problems and solutions, however, are more appropriately defined within and across geographic regions versus within one specific state. Universities would be better able to collaborate on common problems or specialize in certain areas for the region where they have a critical mass of

expertise. Centers of excellence could be established at various universities to provide this expertise in research and extension on common agricultural problems for a geographic region. With the increasing consolidation of county USDA offices, there will be increased pressure on universities to consider pooling resources across state boundaries. A major problem is state leaders accepting this concept after so many years of expecting their university to provide research, teaching and extension to solve their problems and provide education. Congress could also consider providing regional extension funds as they do regional research funds with increased accountability for planning multi-state programs.

Additional Reading

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Agricultural and Rural Finance Policy

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Background

Financial institutions that provide credit to farms, agribusiness firms, and rural communities are authorized and regulated through a maze of legislation and regulatory authorities. Most legislation affecting the provision of credit to rural America is enacted outside the purview of the farm bill. For example, most of the legislation dealing with the Farm Credit System (FCS) is contained in the Farm Credit Act and various amendments to that Act. Likewise, most legislation affecting agricultural banks is originated in the banking committees, not the agricultural committees. Consequently, credit provisions contained within the farm bill tend to deal with current issues at the time of enactment and cleanup of existing credit legislation. Seldom is the farm bill considered the major source of farm credit legislation. Because many of the important current agricultural finance and credit issues are not part of the farm bill, this article discusses several broader credit policy issues that face agriculture and rural America.

Current Situation and Forces of Change

Rural credit markets and the borrowers they serve are dynamic and evolutionary. Providers of credit and the financial instruments they offer must, therefore, also be evolutionary and dynamic in nature. After peaking at slightly over \$206 billion in 1983, farm debt declined to \$145 billion by 1990. Since that time, farm debt in nominal terms has grown very modestly, while real dollar amounts of farm debt have continued to decline. Most analysts agree that the farm lending market is mature and likely to show only modest growth in the immediate future. This situation has sparked intense competition among existing lenders and has generated considerable interest in obtaining expanded lending authority on the part of the Farm Credit System. Legislative attempts to expand lending authority or to deal with perceptions of unfair competition are likely to be important issues in the contemporary lending environment.

Competition in farm lending is also creating strong pressures for improved efficiency in the operation of financial institutions. Improved efficiency may be gained through mergers and consolidations. The FCS has undergone rather rapid consolidation in an attempt to remain competitive. Likewise, many commercial banks have been acquired or merged with other banking institutions. Finally, there are proposals to consolidate the offices and activities of the Farmers Home Administration (FmHA) with other USDA agencies. This process of mergers and consolidations brings with it the need for various legislative authorizations and authorities. Of particular interest is the scope of lending authority when unlike entities merge — for example, a Farm Credit Bank merging with a Bank for Cooperatives.

Competition is also forcing lenders to reexamine the methods by which they raise funds, and deal with credit and interest rate risk. Asset securitization has become a fairly common method of raising funds and transferring risk, especially in nonagricultural lending activities, such as home mortgages. However, a growing interest in asset securitization by banks and other lenders is also evident in agricultural lending. For example, the Federal Agricultural Mortgage Corporation

(Farmer Mac) program is designed to enable lenders to acquire long-term loanable funds for agriculture by issuing asset-backed securities in financial markets. Likewise, several large farm equipment manufacturers have securitized their receivables as a method of tapping sources of funds at very attractive interest rates. In addition, many largely unregulated input suppliers now offer credit programs to farmers. Activities of this nature place considerable pressure on traditional institutional lenders to respond in a similar fashion. The process creates a significant interest in legislative efforts to either expand authorities or to level the playing field for all participants.

Just as lenders are undergoing change to increase efficiency and limit risk, so also are agricultural producers. There appears to be a strong move toward integrated and/or contract production. Hog production is increasingly controlled by vertically integrated or coordinated units. Some analysts predict a similar but slower move in dairy. Most of the turkeys, eggs, and broilers are already produced by vertically integrated units. Specialty crops are also commonly produced under contract. Dealing with increasing amounts of integrated production is providing new challenges to agricultural lenders. Again, legislative efforts to expand lending authorities or to limit risks through loan guarantee programs can be anticipated.

Problems of deteriorating rural infrastructure and dying communities are well known. Financing rural businesses, communities, and infrastructure are likely to offer huge challenges in the years ahead. Many lenders believe that loans of this nature are not bankable due to high risk. Likewise, local legisla-

tive bodies seem to be unable to increase taxes or bonding authority in support of replacement or improvement of infrastructure such as roads, bridges, sewers and other public investments. Faced with this dilemma, legislative leaders are being asked to consider alternatives for dealing with the problem. As one response, the Rural Development Administration (RDA), an agency within the USDA, was formed to help provide access to credit in rural areas. But a fundamental issue is whether or not there is economic viability for many rural businesses and communities.

Issues, Options and Consequences

FmHA Lending Objectives and Authority

Public policy makers have long had a keen interest in assuring access to farming by those wishing to enter the business. Farmers and rural community residents have shared that interest. Rising capital and management requirements along with narrow profit margins have all served to heighten the interest by these groups. The primary agency for accomplishing this objective has been FmHA.

During the financial crisis of the 1980s, expanded FmHA lending provided financial assistance for commercial lenders (by allowing them to transfer their high risk credits to FmHA) and financially stressed farmers. With the passage of the Agricultural

Credit Improvement Act of 1992, FmHA has returned to its traditional lending focus on beginning, limited resource and minority farmers. In recent years, FmHA also has moved away from direct lending to guaranteeing higher risk loans that have been originated by private lenders. Policy options and consequences include the following:

- Expand FmHA funding and direct or guaranteed lending. An expansion of FmHA lending (either direct or guaranteed) would increase funds available for targeted borrower groups and simultaneously increase government budget exposure. A key issue of an expanded program is which borrowers to target — limited resource and beginning farmers or established but financially weak farmers. Unless such programs and obligations are means or need tested, they may become income transfer programs rather than debt assistance programs.

Financing beginning farmers is an often discussed and politically attractive policy. But the success of programs that encourage highly leveraged purchases of assets that generate a low cash rate of return (such as farmland) has been questioned. And these highly leveraged businesses are frequently not of a scale to compete against larger established farms or to provide an adequate level of income.

- Reduce FmHA funding and lending. Continued contraction of the program reduces the credit availability for those

who are not deemed credit worthy by private sector capital markets, but it reduces government spending. With a smaller FmHA program, the ability to enter farming would become even more limited.

Expanded Authority for the Farm Credit System (FCS)

The FCS has largely recovered its financial health; but its charter locks it into an agricultural credit market that is exhibiting very slow growth. Moreover, it is limited by statute in its ability to provide credit for rural economic development. Policy options and consequences include the following:

- Congress could continue to limit the charter authority of the FCS. The consequences of continuing the limited charter preclude the system from a larger role in financing rural economic development. However, other lenders would probably continue to support most of the creditworthy loan demand in this broader market. FCS loan volume could decline further, forcing downsizing and structural adjustments in the FCS.
- Congress could broaden FCS authority permitting it to lend for suburban housing development, nonagricultural business, agribusiness, and broader export sales financing. The consequences of expanded authority for FCS include more rapid growth in its lending activities. Rural business development might benefit from access to another source of credit. A lender with large loan capacity and

the ability to evaluate complex loan proposals could be helpful. However, part of the loan growth would come at the expense of rural commercial banks — many of whom have also found it difficult to add quality loan volume. Some policy makers might ask if the FCS has the necessary management experience and lender control systems to avoid losses in general business and infrastructure lending. Finally, while broader export lending authority would benefit FCS, there is little evidence to suggest that a current shortage of export credit services exists.

Rural Development Banks and Rural Business Start-up

Rural entrepreneurs often experience problems in arranging financing packages for start-up ventures or business expansion. This may result from lack of sophisticated project analysis by local lenders, limited capacity by local banks to bear credit risk, and loan limits at local lenders that are below the required level of financing required. Lack of sound business plans, management strength and viable business opportunities also are factors in limiting access to financing. Difficulty in acquiring equity and quasi-equity capital is an often noted problem.

Many policy makers are asking whether new programs should be enacted to help rural businesses obtain financing to start new businesses and expand existing ones. A special state or federal authority to provide low cost debt capital and to attract equity capital to rural areas has

been suggested. Policy options and consequences include the following:

- Do nothing new to bring more debt and equity capital to rural communities. The consequence of no new initiatives will be the continuation of current efforts at development. Business opportunities with high probability of profit will find financing. More questionable ventures will not. Because of continued erosion of businesses and job opportunities in rural America, it will be more difficult to bring together the critical mass of business development needed to cause self-sustaining economic development.
- Provide loan guarantees and interest rate subsidies along with improved project analysis and management support services. The consequences of public supported guarantees and rate subsidies are several fold. Local communities, development authorities, and lenders will become more involved in development support and will take on greater financial risk in the process. Legislatures will create more programs to support development, but at a cost to taxpayers. However, more previously marginal business projects could be successfully financed.
- Create a federal authority to raise debt and equity capital for rural business development such as Rural Development Banks. Perhaps some of the debt capital could carry a federal, state, or municipal guarantee. Successful devel-

opment efforts will increasingly be focused around a growth center and its larger surrounding trade area. The result will be stronger job and income growth for the community and state. Where more job opportunities exist within commuting distance of rural and small town residents, people have greater choices in where they reside.

The consequences of a new initiative to increase funding sources for rural businesses likely would be a larger pool of debt and equity capital available in rural America. A policy dilemma is whether that new capital source should compete with or be complementary with current credit sources. Some public budget exposure would result as well.

Bank Structure, Consolidation and Service Regulation

Commercial banks in rural America find it difficult to identify new creditworthy loan customers and to compete in price with nontraditional lenders, such as input suppliers, processors and specialized financial service firms. Both banks and the FCS are highly regulated businesses with limited capacity to enter new markets and to reduce the cost of regulation. Policy options and consequences include the following:

- Congress could retain the regulatory status quo for commercial banks and refuse to permit broader branching authority to improve bank efficiency or broader charter authority to enter currently prohibited lines of business such as real estate brokerage

and investment banking. Refusing to grant relief would result in continued erosion of traditional bank credit markets to nontraditional lenders and limit a banker's ability to earn greater fee income. As a consequence, more banks likely will exit the rural credit markets.

- Congress could gradually relax the more burdensome regulator oversight and grant broadened charter authorities. Reducing regulation and broadening authorities would add business opportunities for all commercial banks. Broader branching authority would create efficiencies in bank capitalization and management, but that would occur at the cost of local ownership and management of banks. How much this would benefit rural commercial banks is not fully understood. The skill of banks in developing new products, entering new markets and taking on/managing new risks would be key to understanding the outcome. Would rural banks have the human resources to build upon new opportunities? Could they compete against regional and national banking firms?

Farmer Mac and Secondary Markets

The Agricultural Credit Act of 1987 authorized the formation of a secondary market for farm real estate loans — the Federal Agricultural Mortgage Corporation (Farmer Mac). The concept of the secondary market is to provide an opportunity for lenders to create marketable securities based on

agricultural loans and to buy and sell those securities in a liquid national market. This procedure increases the liquidity of long-term real estate loans, allowing lenders with shorter term funds sources (deposits or bonds) to make long-term real estate loans without encountering the interest rate risk of funding long-term assets with short-term liabilities. Current volume of Farmer Mac lending is approximately \$700 million; estimates are that almost double that volume is necessary for a viable program. Long-term viability of Farmer Mac is undermined by structural requirements, stern regulatory oversight, and because sellers of loans retain ownership and risk of subordinated interests. Policy options and consequences include the following:

- Status quo. Continuing current policy aids in protecting the financial integrity of the system.
- Reduce regulatory oversight of Farmer Mac and eliminate requirements that sellers retain ownership and risk of subordinated interests. If Farmer Mac develops an active portfolio, it could provide a broader spectrum of financial products and services to farmers and potentially reduce their interest rate, costs and risk exposure. Currently, regulatory restraints and high costs price its services out of the reach of most agricultural lenders. Access to the agency market can be considered a government subsidy by supporting cost effective access to lendable funds. As with any government sponsored entity, Farmer Mac

increases the taxpayers risk exposure if it encounters losses that require government assistance.

- Do away with Farmer Mac as currently constituted. Some argue that its services are too costly for lenders to use and as a result, it is not needed. Doing away with Farmer Mac would have only very limited impact on farm lenders at this time. It would, however, remove a financial intermediation system that, if given necessary authority and regulatory relief, could prove enormously beneficial in the future.

Environmental Liability of Lenders

Agricultural lenders are increasingly vulnerable to environmental liability, particularly on real estate and facility loans. Damages under environmental liability law may be large (particularly third party damages). The law and courts provide only limited protection for the lender in liability suits, and the collateral securing the loan frequently loses substantial value if an environmental problem is uncovered. Lenders are concerned about retroactive liability as detection methods improve or as more restrictive standards are imposed. Consequently, many lenders will require an environmental audit as part of their loan review and documentation process. In some cases the lender may refuse to take specific property as collateral and/or require an indemnification clause in the loan agreement to protect the lender from the cost of environmental liability litigation. Concerns about environmental liability

may make credit for certain uses (for example, livestock facilities and chemical or fertilizer storage and application facilities and equipment) more difficult to obtain, and likely will increase the cost for those credits that require an environmental audit or other procedures to reduce the lender's risk of environmental costs. Policy options and consequences include the following:

- No change in current policy. No change means that lenders will continue to be somewhat cautious in making loans that might result in liability exposure.
- Provide lenders less protection from environmental litigation. The consequences of further exposure under environmental liability law are increased costs for borrowers in many cases, or even restricted access to credit for environmentally sensitive assets/ventures. But lenders can be very effective in enforcing environmental regulation compliance and the use of environmentally responsive or friendly management practices and procedures if they withhold credit or charge higher interest rates in cases where they fear environmental liability risk exposure. Thus, expanded liability exposure would increase credit costs for farmers, but could reduce environmental degradation.
- Curtail lender liability exposure under environmental law. Reduced environmental liability exposure for lenders would decrease their incentive and effectiveness as environmental policemen.

Small Scale Borrowers

Delivering credit to small scale borrowers (those who borrow \$25,000 or less for example) is a high cost business. This is particularly relevant to agriculture because a large number of part-time and full-time farmers are small scale borrowers. Many of the costs of credit extension including most origination, documentation and servicing costs are a function of the type of transaction, not the volume of that transaction. Spreading these fixed transaction costs over a large loan volume per transaction results in significantly lower cost and the potential for lower interest rates for large volume borrowers. Consequently, an increasing number of lenders are targeting the larger borrower as their prime customer base, and either not providing credit services to small scale borrowers, or doing so only at higher interest rates. The public policy issue is whether credit worthy small scale borrowers should have equal credit access at comparable rates to large scale borrowers. Policy options and consequences include the following:

- Status quo. Lenders will increasingly do business with small borrowers on the basis of credit scoring models and higher interest rates to offset limited customer information. Larger borrowers will be offered relationship lending services and lower interest rates by their lenders.
- Develop a public institution to serve this sector with subsidized interest rates. With a new government institution or rate subsidies, government

expenditures would be incurred. Regulations that impose requirements to serve small scale, high cost borrowers would likely increase lenders costs, but encourage innovation in the delivery system for this segment of the market.

- Provide interest rate subsidies to private sector lenders who serve qualified small scale borrowers to offset the higher cost of doing so. These policies generally would

enable qualified borrowers to obtain funds, and/or obtain them at lower cost, thus increasing their competitiveness and financial viability. Such policies would improve the competitive position of small scale borrowers, thus slowing their exit from agriculture. Borrowers who do not qualify would be impacted if qualified borrowers use their interest savings to bid up prices of fixed resources such as land or rents on land.

- Require that lenders serve this segment at competitive rates (even if it reduced profits) through regulations similar to the Community Reinvestment Act, which requires commercial banks and selected other lenders to provide and document service to their local community. Such a requirement could assure credit availability and may spread the higher costs of serving smaller scale borrowers.

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Commodity Promotion Policy

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Background

Generic commodity promotion has become an important strategy in an overall marketing plan for producers facing changing consumer preferences, increasing global competition and decreasing government price supports. There are more than 350 federal and state advertising, research and promotion programs covering over eighty farm commodities. They generate funds from producer assessments and public sources for domestic and export promotion. Figure 1 indicates the total budgets for 116 of the largest of the organizations' budgets across commodity categories.

The intended purpose of commodity promotion is to help U.S. agricultural producers enhance demand and improve their competitive position in both domestic and foreign markets. A large portion of the funds are collected under federal legislation and administered through commodity boards. Ninety percent of all U.S. producers contribute money to farm commodity promotion and market development.

The federal commodity promotion programs began in 1954 with the passage of the National Wool Act with an amendment to

the Agricultural Marketing Agreement Act of 1937 authorizing generic research and promotion programs as part of marketing orders for fruit, vegetable and specialty crops. In the mid-1960s, Congress began passing a series of statutes authorizing advertising, promotion and research programs for specific commodities. A new era was established in 1983 when a dairy promotion program was authorized with nonrefundable assessments and a delayed referendum. Beef and pork programs were subsequently authorized with similar provisions. The focus of the programs with federal checkoff

authority is on domestic promotion programs. Finally, in the 1990 farm bill, dairy processors were authorized to establish a checkoffs program for fluid milk advertising. While separate from the producer program, this may set precedence for marketing firms in other industries to join funding efforts.

Foreign market development programs supported by federal appropriated funds operate under the jurisdiction of the International Agricultural Trade Service (IATS). The foreign market development program (FMDP) has operated since 1955. The market promotion program (MPP) was established in

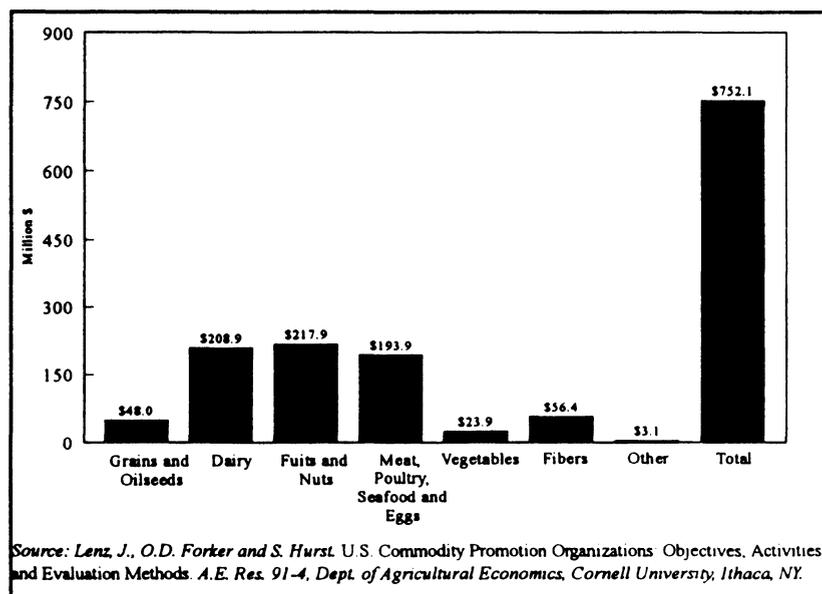


Figure 1. Commodity Promotion Organization Budgets, 1990.

the 1990 farm bill to replace the targeted export assistance program authorized in the 1985 farm act.

The FMDP, also called the cooperator program, allows IATS and nonprofit commodity organizations to jointly fund long-term market development projects in order to introduce potential foreign customers to U.S. agricultural products. These projects include trade servicing and technical assistance targeted to trade and industry representatives in importing countries. The MPP supports consumer promotions, and approximately 40 percent of MPP expenditures are for branded promotions which allow companies to be reimbursed up to 50 percent of their total costs. These foreign promotion programs have enjoyed substantial growth, but budgetary and accountability concerns have reversed that trend recently (Table 1).

Current Situation and Forces of Change

Commodity promotion policy has evolved over the past decade as more commodity interests have elected to initiate checkoff programs. The trend in federal checkoff promotion programs has been to reduce or eliminate refund provisions, to extend coverage to include imports and to initiate programs prior to conducting a referendum.

Increased producer interest is precipitated by market development opportunities in both domestic and international markets.

Table 1. Federal Funding for Export Promotion Programs, Selected Years 1975-1994.

Year	FMDP	TEA or MPP	Total
—million dollars—			
1975	12	0	12
1980	19	0	19
1985	34	0	34
1990	30	200	230
1991	34	200	234
1992	33	200	233
1993	39	148	187
1994	34	100	134

Source: USDA.

Changes in consumer preferences create market opportunities for industries prepared to aggressively pursue them. Simultaneously, attempts to control the federal budget deficit are reducing the flow of income and price supports to farmers. This increases the incentive for commodity producers to pursue marketing opportunities to enhance their income.

Competition for share of export markets is intense in today's international environment. Subsidized exports by competitors have been a major factor and the subject of intense trade negotiations in recent years. Increased marketing efforts by other exporting countries put pressure on producers to obtain public or self-generated funds to promote U.S. products in foreign markets. Implementation of the General Agreement on Tariffs and Trade (GATT) Uruguay Round agreement will gradually reduce export subsidies, such as the export enhancement program (EEP), as a market development tool, thus increasing emphasis on nonprice promotion approaches.

Proliferation of domestic promotion programs and budget

pressures have increased congressional attention and demands for accountability by producer groups. Research findings indicate that these federally authorized programs provide positive benefits to producers and to society. However, there is also concern about fundamental problems of efficiency, equity and program management. A need for more knowledge about the effects on commodity sales, net producer returns, marketing margins and intercommodity competitions also evident to provide assurance that the programs are operating in the public interest.

Issues

Public policy issues raised by the federal authorization for generic commodity promotion checkoff programs and the use of public funds to promote foreign market development involve several conflicting concerns.

- **Equity issues.** Mandatory, no refund checkoff programs remove individual freedom to participate. Producers pay in proportion to their sales volume, but seldom do they benefit to the same extent? Do marketing firms benefit more than do producers? Do producers and marketing firms exporting to the U.S. get significant benefits without sharing the costs?
- **Corporate support.** The use of public funds to directly support agricultural commodity export promotion programs, particularly for branded products, is an

important policy issue. While commodity promotion might have the desired effect of enhancing aggregate demand for the commodity, there is public concern about subsidizing large, successful corporations and the extent of producers' benefits.

- **Truth in promotion.** Advertising content and nutritional claims are a public concern. To what extent is the public interest served by contemporary producer advertising?
- **Enhancing program management.** Evaluating program effectiveness and periodic referenda to assure program support are elements of sound management. Growing ties between commodity promotion boards and industry trade associations raise questions about cross-subsidization and conflicts of interest.

Policy Alternatives and Consequences

The major policy alternatives and their potential consequences are addressed for the four issue areas discussed above.

Equity Issues

Most commodity promotion programs target their efforts to developing markets and expanding demand for undifferentiated or generic commodities. The benefits are gained by all producers without regard to their contribution, so

there is an economic incentive to the individual to avoid paying into the promotion fund. Refunds have been a common method of providing an option to producers not interested in supporting the program. This is not only an equity issue, it also may result in smaller than optimal programs because of funding limitations. Further, the use of public funds or authority to collect checkoff assessments is sometimes criticized because it is not always clear who obtains any benefits. If producers pay the checkoff, do they get all the benefits? Most legislation does not address the evaluation of program impacts.

Eliminate refunds. Federal legislation that revises existing programs or initiates new ones can explicitly eliminate producer refunds and eliminate the free rider problem. The primary impact of such changes is to increase the level of funding available, thus enabling a larger promotional effort. It also enhances planning and program efficiency because contingencies for refund purposes are no longer needed. A coordinated national program eliminates some of the inefficiencies arising from numerous state programs, including the ability to take advantage of huge economies of size in advertising. There will be a gain to those producers who participate under any circumstances but a loss of freedom and additional costs to producers who do not wish to participate.

Broaden collection. Rather than collecting only from producers, marketing firms and importers could also be assessed. Imported commodities are often indistinguishable from domestic products. Imports gain from generic promo-

tion in domestic markets. The most equitable way of sharing the program costs among those who benefit is by legislating that importers be assessed at the same level as domestic producers. It is not clear that producers derive the most benefit from expanding product sales, but marketing firms benefit from the large volume handled.

Broadening collection results in a larger level of funding for promotion efforts and potentially greater impact on the market. Domestic producers will gain from this larger program. However, importer interests and marketing firms may have to be accommodated on promotion boards, thus diluting the control of domestic producers. Also, broadening collection may eliminate the possibility of using promotion efforts to position domestically produced products as superior to imports for various end uses. Improved industry coordination may result from the recognition that all levels of the industry are contributing to efforts to achieve common market development objectives.

Corporate Promotion

Producers have a stake in accessing newly-opened global markets. Non-price promotion tools typically used by commodity trade associations provide a marketing-oriented approach to developing export markets for U.S. commodities.

In light of federal budget constraints, the traditional public funding for export market development is being reduced. There are concerns about using the funds for branded-product promotion and the distribution of funds between large and small firms. It will be

increasingly important to assess the extent that programs foster long-term market development and the benefit to U.S. producers and economy.

Increased government funding. Increased direct funding of government promotion efforts through the MPP, the FMDP or related USDA-funded market development efforts supports producers and agribusiness groups' efforts to maintain or expand foreign markets. Alternatively, increased funding from industry may be needed. This may become a more important competitive tool during the period when direct price subsidies for exports (e.g., EEP) are being reduced as a result of the recent GATT agreement. The primary drawbacks are budget impact and cost to taxpayers. To the extent that domestic market prices are enhanced, deficiency payments for program commodities would be reduced and consumer prices increased. Rural areas, producers and exporters gain to the extent that U.S. commodities are in greater demand in export markets.

Improved oversight and coordination. Substantial criticism has been leveled at USDA for lack of strategic focus and control over export promotion funding. The USDA has been directed by Congress to develop a long-term trade plan, and numerous inquiries have focused on how MPP funds are allocated and spent. Further congressional direction could require USDA to better monitor and control its contractors, generate information on effectiveness, focus funding on high-priority markets, limit funding to small-to-medium-sized businesses and limit the number of consecutive years that a program in a

specific country is funded. This would limit the budget exposure of taxpayers and may result in more careful targeting of promotion efforts. In addition to reducing effectiveness, reporting and monitoring requirements may discourage participation and limit promotion flexibility to respond to changing market conditions.

The 1992 Export Enhancement Act required the development of a plan for coordinating export promotion programs across all government agencies. The Trade Promotion Coordinating Committee (TPCC) was created to develop this plan. In 1991, agricultural products represented 10 percent of U.S. exports, while USDA received about 75 percent of the federal export promotion budget. Increased coordination could become a mandate for consolidating promotion efforts under one management authority. However, the linkage of export promotion programs to agricultural policy objectives could be lost since agricultural, food and fiber product exports would likely lose funding. Producer and agribusiness interests would receive fewer benefits, but taxpayers may gain if increased promotional expenditures yield greater economic growth for other export-dependent industries.

Focus on providing information. Focusing public funding for export promotion on gathering information through the agricultural attache network and perhaps strategically placed trade offices is another option. The MPP and FMDP would be closed out, thus reducing taxpayer outlays. Producers and agribusiness interests would likely increase promotional efforts, but the total impact would be reduced. The government would lose the ability to direct or influ-

ence export marketing strategy, one of the few options available under GATT to counter aggressive market development programs of other nations or trading blocks.

Limit brand advertising. Promotion programs generally concentrate on developing markets for generic commodities or products. However, up to 40 percent of MPP funds have been allocated to increase brand advertising on a matching basis. Where public funds are used to promote brands of large corporations under export promotion programs, questions are raised about targeting smaller firms, the duration of government support and the magnitude of the associated increase in exports. Brand owners are the primary beneficiaries of brand advertising. This appears to be in direct conflict with the objectives of providing collective benefits to all producers.

Brand advertising expenditures could be expressly prohibited in legislation guiding the use of public funds such as for the MPP program. Strategies for meeting the market development objectives of the organization would be constrained. The advantage of using a widely recognized brand name to penetrate a new export market may be substantial even though no evaluation of such impacts are available. Having flexibility to encourage private firms to undertake risky new market development may benefit commodity producers. However, if processors later pursued foreign investment to satisfy the demand created for their brands, U.S. producers and taxpayers would not benefit.

Truth in Promotion

Generic promotion programs foster competition among commodity interests with each supported by public authority through checkoff programs. The logic of using government authority to create potentially conflicting programs is questioned by many. Currently, USDA policy prohibits comparative or disparaging advertising for certain commodities. Changes or new approaches in policy could address some of these concerns as well as concerns about allowing brand advertising under generic promotion programs.

Prohibit comparative advertising. A direct approach to avoiding conflict is to prohibit generic promotion programs from comparing their commodity with another. This is current USDA policy, but including this prohibition in authorizing legislation is an option. This reduces potential conflicts and encourages advertising efforts to expand the total market. However, it may represent an unrealistic expectation regarding the potential for market growth or the fundamental nature of marketing management techniques.

Regulate use of health claims. Some commodity promotion campaigns are inconsistent with USDA and FDA labeling rules for nutrition claims. Policies could require that advertising claims meet all federal regulations where healthful attributes are emphasized. Generic advertising would be treated in the same manner as brand advertising. The use of health claims would be monitored and expected to conform to regulations. Compliance with

such policies could reduce potential conflicts among commodity groups and may provide long-term benefits through improved public perception. The opportunity to counter negative impressions of commodity characteristics could be constrained by this policy option.

Establish uniform guidelines. Establishing uniform guidelines on allowable advertising content could reduce conflict among competing generic promotion programs. The benefits are greater equity among programs and less offsetting advertising among commodities. The primary cost is reduced creativity and flexibility, thus leading to less effective promotion programs.

Guidelines also could be required for private involvement through brand advertising. Such guidelines could limit participation to specific types of marketing situations, define sharing arrangements beyond rules already in place and determine methods for limiting the duration of support. The benefits of enforcing uniform guidelines is the assurance that public purposes are being served. Increased standardization of management and oversight, including periodic evaluation and assessment, could measure the extent to which public purposes are achieved. The cost of such an approach is the decreased flexibility in program management and operation which could lead to greater inefficiency in the use of funds to achieve the public purpose.

Enhancing Program Management

Both government and producers are interested in ensuring that commodity promotion programs

operate efficiently and serve their intended purposes. Currently, there is variation in requirements for periodic referenda and little emphasis on evaluating program effectiveness. The prohibition against government authorized or funded programs influencing government policy or actions is of particular concern where trade associations and commodity promotion boards work together closely. Government policies have the potential for encouraging or enhancing efficiency and responsiveness of these promotion programs with little budgetary impact on taxpayers.

Mandate periodic referenda. Commodity checkoff programs authorized by Congress require a referendum at some point in the development process. This occurs more often after the program is implemented. Further referenda are usually the result of a petition process. A requirement could be instituted that all checkoff programs be subjected to a designated periodic approval referendum. This could encourage greater attention by program management to serving the collective interests of producers. It could also result in suboptimal short-term decision-making with an emphasis on communicating benefits rather than producing long-term results. However, periodic referenda would assure taxpayers and producers that the checkoff authority was being used for the intended public purpose.

Evaluate program effectiveness. Only the dairy checkoff legislation specifically mandates a regular analysis of effectiveness and a report to Congress. Most checkoff programs do occasional programmatic assessments for

internal management purposes. Greater requirements for regular, third-party evaluations of programs could be mandated through legislation to assure that performance is evaluated regularly and communicated to USDA, to Congress, and to producers.

With this type of assessment system, producers and taxpayers could benefit from better information about progress toward public objectives. Program managers would have to focus on goal-setting, prioritization and efforts to achieve measurable goals. Forming requirements and monitoring procedures would be difficult given the diversity of promotion programs and objectives. Poorly developed legislation or misguided regulatory oversight could cause inefficiencies if the emphasis shifted to expenditures on evaluation and monitoring at the expense of programmatic initiatives. Funding to support data collection and research must be adequate, otherwise the results could be inconclusive.

Increased oversight. There is potential for cross-subsidization when commodity programs are

closely linked to industry trade associations through board memberships or cooperative efforts. However, government authorized or funded programs are prohibited from influencing policy. Increased monitoring to assure that the public interest is served would be provided, assuring that producer funds are spent in accordance with referendum-approved programs and elected representatives make the decisions delegated to them. Increased oversight would increase costs to be borne by producers or taxpayers but would assure that funds collected under public auspices are used for the intended purpose.

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Rural Development Policy

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Background

Rural America has been experiencing continuous stress, and pressures generated during the 1980s will leave permanent scars. However, the crises in agriculture and the precipitous drop in energy and metal prices during this period have created one beneficial side effect. Once again national attention is focusing on the plight of rural America.

Past legislation produced farm policies which were once viewed as rural policy. The events of the 1980s are beginning to change this belief. Massive federal spending to aid farmers throughout the Midwest did little to stimulate recovery of rural communities and now policy makers are beginning to conclude that farm policy is different from rural policy. Some analysts have even suggested that strong rural policy may be the best way to support both farmers and the rural communities where they and their families live and work.

While we do not have a clearly articulated national rural policy, substantial federal funding has been infused into rural America over the years. However, a USDA study reveals a very different mix

of federal assistance going into nonmetropolitan counties than into metropolitan counties. A larger proportion of the federal spending going into urban counties has been characterized by investments. This is the type of spending that increases the income generating capacity of the area.

Nonmetropolitan or rural areas received federal spending oriented more toward transfer payments. This is a type of spending that does not necessarily increase income generating capacity. Has the mix of federal assistance over the years deteriorated rather than enhanced the relative position of rural areas? While this question cannot currently be answered, one conclusion is possible. Without a carefully crafted rural policy — one that will enhance the competitiveness of rural areas and provide options for rural people and communities — the gap between metro and nonmetro areas will widen.

One obstacle to a national rural policy is the diversity of legislation impacting rural America. The 1995 farm bill that comes out of Senate and House agriculture committees will shape those programs administered through the USDA. However, areas like health care, education and social security will also have profound impacts on rural people

and places. These areas are governed by other laws that originate in other Congressional committees and are administered by other agencies. Committees and agencies, other than those focused on agriculture, have a primarily urban constituency. The effect of these bills on rural areas may be substantial, but the legislation itself will deal primarily with urban challenges. Thus, developing a consistent rural policy will be difficult.

Current Situation and Forces of Change

Several dimensions of the current situation and forces affecting rural America provide insight for our discussion of issues and policy alternatives. These forces include extreme diversity across the United States, challenging demographic shifts, relentless moves toward a global economy and obsolete rural institutions designed to deal with issues from a previous era.

Diversity Across the United States

The diversity of rural areas across the United States will provide special challenges for policy makers. The following brief look at several regions will highlight this diversity.

The Great Plains region of the United States is characterized by great distances, sparse population (fewer than six people per square mile in many counties) and few metropolitan areas. The region is more dependent upon agriculture than any other region in the country, but sprinkled throughout the region are counties dependent upon manufacturing, mining or government activities. Most Great Plains counties have a significant dependence upon retirement income, which in many rural areas is the fastest growing source of income. Income levels for many Great Plains counties are greater than or equal to the median for nonmetropolitan counties. However, due to a lack of employment alternatives, this region is experiencing the highest rate of outmigration of any rural region in the United States.

The Northeast stands in stark contrast to the Great Plains. Population is more dense, and the Northeast has many major metropolitan centers. While agriculture is important, no county is dependent upon agriculture with 20 or more percent of income coming from this source. This region continues to be dependent upon manufacturing. It was the first to face the stress of moving away from a goods producing economy as firms left for lower cost labor in the south. Per capita income levels are high with the nonmetropolitan counties in Connecticut having the

highest of the nonmetro areas of the United States.

The South also has many more metropolitan centers than the Great Plains. It has some dependence upon agriculture although a very different agriculture than is found in the Great Plains, and the South is much more dependent upon manufacturing. The economy in the rural South is much more diversified than is found in the Great Plains. Much of the employment available to rural residents is low wage and low skill. Rural income levels in the South are the lowest in the country. More of the persistent poverty counties are in the South than in any other region of the United States. Educational attainment levels are low but the South is not experiencing the rate of outmigration that is occurring in the Great Plains.

The Western region of the United States presents yet another picture. Most of the population centers are located along the west coast where population density can be relatively high. The region is heavily dependent upon resource based industries with substantial manufacturing along the coast. Because of the vast federal ownership of Western lands, public land management plays an important role in the rural economy of Western states. For example, in 1986, 47 percent of the land area in 11 contiguous states was owned by the federal government. The intermountain part of the region is similar to the Great Plains with few metropolitan centers and sparse population.

This brief discussion of individual regions highlights the diversity across the rural United States. Designing rural policy to address this diversity will be challenging.

Demographic Shifts

Adverse demographic shifts make this diversity even more challenging. These include a general population decline in many areas, selective outmigration, a bimodal population distribution, and a shallow leadership pool.

With the exception of the 1970s, the rural population in many areas has been declining over a substantial period. In 1990, 24 percent or 61.7 million people resided in rural America. This is down sharply from 1930 when 44 percent of U.S. population was rural; however, this still represents a significant proportion of the U.S. population. The decade of the 1970s saw a temporary reversal of this general downward trend. During the decade of the 1980s, 54 percent of the nation's nonmetropolitan counties lost population. Of course, consistent with the characteristic of diversity, some areas gained in population. These counties tended to be recreation and retirement destination counties plus be located next to metropolitan counties.

The decline in the number of rural residents is only part of the story. The outmigration has been selective. A larger proportion of those individuals in the prime working age categories and in higher levels of educational attainment categories migrate from nonmetro to metro counties each year. This results in a serious loss of human capacity which is more than the changes in population numbers suggest.

The shallow rural leadership pool suffers from isolation. Rural leaders are few and in some cases geographically isolated. Consequently, they do not have as much interaction with other leaders and access to information sources

enjoyed by their urban counterparts. Proponents argue that the new telecommunications technology will break down these distance barriers. However, this will occur only if rural leaders are able to make effective use of this new technology. If they do not keep up, further isolation will result.

Moves Toward a Global Economy

In addition to being diverse and experiencing adverse demographic shifts, rural areas must deal with a changing national economy. This economy is going global and shifting from the production of goods to service related industries. These changes have several characteristics that directly affect rural areas such as economic diversity but regional specialization, loss of competitiveness by rural manufacturers, movement toward service industries and global competition.

Rural America has historically depended upon basic or natural resource industries such as agriculture, forestry and mining. Manufacturing, transportation, retirement/recreation and government activities were added later. National averages suggest substantial diversity in the rural economy, which would imply an enhanced ability to withstand economic shock in a particular sector of the economy. However, this is not true. Rural areas continue to be specialized or single industry dependent. For example, those counties that are dependent upon agriculture are usually located within a cluster of counties that are also dependent. Certain rural areas have just shifted from dependence on traditional industries to dependence on other industries, but they remain single

industry dependent. There has been little increase in the capacity of rural areas to withstand economic shock.

Rural areas have shifted toward services as the national economy has been making this transition but the shift has not favored rural areas. The increase in service businesses in rural areas has included a higher mix of low wage, personal services. The mix in urban areas has gone toward higher wage business and professional services. This is due in part to the increase in retirement and tourism in rural areas and in part to the educational attainment levels or capacity of the rural labor force.

While the apparent diversification of rural economies and the differential shift toward services has been occurring, our national economy has been opening to world markets. Some industries hardest hit are those upon which our rural areas are most dependent and they primarily include low wage, low skill manufacturing, agriculture, forestry and oil and gas occupations. Consequently rural areas are adjusting to market conditions outside the borders of the United States, markets in which they are not prepared to compete.

Obsolete Rural Institutions

As rural America has changed, many institutions have become obsolete. Even so, not all rural institutions are obsolete, and many institutions that are obsolete have been effective through the years. However, the changes over time have rendered many institutions ill equipped to deal with current issues. This problem manifests itself in at least three ways — inadequate delivery of

services, government units and programs that do not fit the size and shape of rural challenges and lack of coalitions that represent broad based rural interests.

Changing demographics including but not limited to declining rural populations have made delivery of services like health care and education harder. Maintaining patient and student numbers large enough to provide quality services at affordable cost levels have become increasingly more difficult to maintain. While the plight of these public services draws attention, many businesses providing private goods and services face the same difficulties but go unnoticed.

Besides the challenges of providing ongoing services, government units and programs are often the wrong size and shape to deal with emerging problems. For example, the requirements for Class 1 landfills are sufficiently stringent so that most rural counties cannot support single county facilities. The requirements have closed many existing landfills. Therefore, ad hoc multi-county groups must be formed to build the necessary solid waste disposal facilities, or counties must contract with other jurisdictions to provide the necessary services.

The problem of obsolete rural institutions manifests itself in another way. This is the lack of coalitions that represent broad rural interests. The commodity and general farm organizations represent a segment of the rural population and are some of the most influential. Before the arrival of commodity programs, agriculture was the major economic activity in rural America, and the general farm organizations represented broad rural interests. However, government programs

have brought these organizations into a sharper focus on narrow sectoral interests while agriculture has declined in relative importance. Other coalitions representing primarily rural interests have formed around rural health care and rural education as well as around government programs focused on infrastructure. These have both urban and rural constituents, and the rural seldom win. There is a dearth of coalitions representing broad rural interests.

Current Rural Policies

The federal government has a long history of concern for rural America that dates from the 1908 Country Life Commission. Now, there are several major pieces of federal legislation and an executive order dealing with rural policy, which includes the Rural Development Act of 1972, the Rural Policy Act of 1980, Title 23 of the 1990 farmbill, the Omnibus Budget Reconciliation Act of 1993 and the National Initiative on Rural America (1990). The 1972 Act provided means to consolidate rural policies, thus giving them a coherent structure. Many programs under this Act were not funded as conditions improved in rural areas during the 1970s

The 1980 Act was an attempt to fine-tune existing policies to develop more flexibility in meeting the growing diversity of rural America. This Act designated the USDA as the lead federal agency in coordinating all executive branch rural development efforts. Other federal agencies such as the Departments of Labor, Education, Transportation, Health and Human Services, Housing and Urban Development, the Economic Development Administration and

the Small Business Administration also serve rural areas.

Among other provisions, the 1990 farm bill established the Rural Development Administration (RDA) within the USDA to administer rural development programs, some of which were previously administered by the Farmers Home Administration. Each state was to establish review panels to ensure that local areas applying for federal funds were operating based on strategic plans. However, much of the Act was not funded. As part of the reorganization of the USDA, the RDA is being revamped. The review panels were never established and only a fraction of the legislation received appropriations. Some funding was provided to do rural development work through the Forest Service and the Soil Conservation Service's Resource Conservation and Development Districts.

The 1990 executive order, Presidential Initiative on Rural America, established State Rural Development Councils in eight pilot states. The councils, which include representation from federal and state agencies as well as private groups, are designed to streamline the delivery of federal and state assistance to rural areas. The name has been changed to National Initiative on Rural America, and most states have joined the program. Each state is organized differently, and the approach has met with varied success. At the same time, an increase in communication among Federal agencies at the state level and between Federal, state and local agencies has been evident.

With the end of revenue sharing, the federal government has partially shifted fiscal responsibility to state and local govern-

ments and has reduced the outlay of federal dollars. Funds for economic development activity in both urban and rural areas were cut by more than 50 percent between 1980-88.

The latest piece of federal legislation, the Omnibus Budget Reconciliation Act of 1993, includes a provision for three rural Empowerment Zones (EZ) and 30 rural Enterprise Communities (EC) to be administered by the USDA. The law also provides for six urban EZ and 65 urban EC to be administered by the Department of Housing and Urban Development (HUD). This pilot program is available to only a few areas, which are primarily those more densely populated and poor. It represents a significant change in the approach to rural development including the following:

- It is driven by an extensive local strategic planning effort generated with broad local participation.
- It concentrates significant federal resources in targeted areas (Social Service Block Grants of \$40 million in each EZ and \$3 million in each EC).
- Federal agencies will have authority to waive certain requirements of existing programs to adapt to the strategic plan.

Other provisions of the approach include wage tax credits, Tax Exempt Facilities Bonds for select private business activities and special consideration in competition for other programs. While provisions limit participation by many stressed rural areas, the approach is tailored to local

needs. It should provide valuable information for future rural development policy.

Issues

Several issues are critical to rural America. Unfortunately, they come under the jurisdiction of several congressional committees and federal agencies with most having only a minor interest in rural issues. This discussion focuses on those issues coming under the jurisdiction of the agricultural committees and the USDA, which are the committees and the agency with a primarily rural constituency.

■ **Sparse income and employment alternatives.** Most rural areas lack the economic base necessary to provide adequate income and employment alternatives for existing residents; however, there are exceptions. Some counties near metropolitan centers and some counties dependent upon the retirement and recreation industries have generated adequate income and employment opportunities.

■ **Institutions not designed to deal with current rural issues and rural service needs.** The government and private institutions serving rural America were designed when agriculture was the primary industry and often when populations were growing. As other industries have become more important, new organizations representing these interests have been slow to develop. The agricultural organizations have not broadened their agendas to include emerging issues. Simultaneously,

government agencies and organizations are finding delivery of public services to a declining rural population more difficult. Hospital, public utility and school districts are experiencing increasing difficulty providing services economically with declining tax and clientele bases.

■ **Shortage of human capital to provide leadership for government and businesses.** The selective outmigration from rural areas has left many areas short of leadership for government and business organizations. The sparse population, lower percentage of the population in prime working age categories and lower educational attainment levels all work against rural areas. While metropolitan areas have many individuals in leadership positions, rural areas have single individuals holding many leadership positions. Additionally few training opportunities for new leaders are available.

■ **Obsolete, deteriorating and inappropriate infrastructure.** Much of the infrastructure in rural America, as with the institutions, was designed to address different circumstances than exist today. Highways, roads, bridges, water and sewer systems are often old and deteriorating. In areas experiencing population growth, the new residents often require system expansions that raise the costs for all tax payers. In areas of population decline it is almost impossible to maintain existing infrastructure. The emerging telecommunications technology holds the promise of shrinking distances and bringing rural areas into the mainstream. This will occur only to the extent that rural areas are connected and rural people gain the skills and over-

come any cultural barriers to using the new technology. Urban areas are better equipped to take advantage of this new technology. This breakthrough could result in further isolation of rural areas.

Policy Alternatives and Consequences

Rural development policy issues concern all levels of government. State and local governments can offer flexibility needed to meet the diverse issues facing rural areas. The federal government can play a role in creating a national environment conducive to economic growth; providing leadership in setting general policy goals, establishing approaches, and creating institutions; coordinating programs across levels of government; achieving efficiencies not attainable by state and local government; facilitating multi-state or regional approaches to solving rural issues; and distributing the costs and benefits of development activity equitably.

There are four basic approaches for rural development policy, and each will be briefly discussed.

Increasing income and employment

This involves expanding the alternatives (markets) available to rural businesses, filling the unique capital needs of rural areas and targeting training and technical assistance to rural business owners and managers.

Examples of programs that expand the markets available to rural businesses include the following objectives: targeting federal procurement dollars for businesses in rural areas; identifying and developing foreign markets for rural-based businesses; and supporting research to develop new products from resources available in rural areas. The economic activity in rural areas is small compared with that generated by urban businesses. In 1992, 84 percent of personal income and 82 percent of employment in the United States were generated in metropolitan counties. Therefore, the business diverted by this targeting would have small impact on urban businesses. Also, some business based on exclusively rural resources would not be readily available to urban businesses. Historically, policy makers have found targeting necessary to direct business activity to smaller businesses. The consequence of not targeting rural businesses is that most of the opportunities generated will go to urban-based firms because of their superior access to information.

One additional approach to increasing income and employment is industrial or business recruiting. This involves attracting a business that brings with it an established or potential market opportunity. While some rural areas have used this strategy successfully, most have not. Within the United States, this involves attracting a business from one area to another. This may be a benefit to the area capturing the firm but it is a zero sum game (no overall gain) nationally. Attracting businesses internationally may offer promise but not for most rural areas.

The shortage of employment and income opportunities is attributed in part to a lack of capital for businesses. Research suggests that there is not a general lack of capital in all rural areas. For example, rural banks are operating efficiently. The capital shortfall affects selected types of capital in specific locations. There is a lack of equity capital, long term debt capital, micro loans, and start-up debt capital in rural areas. A shortage of debt capital also occurs when there is a mismatch between the size of the business seeking capital and the financial institution and instances when the area is dominated by a single type of business. Hence, Congress created the Farm Credit System (FCS) to address this latter problem in areas dominated by agriculture.

Several tools could address this shortfall. Private-public partnership arrangements could establish revolving rural capital pools to share in the gains or losses from new rural business ventures. Bank Community Development Corporations (CDCs) could be used to structure this private-public partnership. Bank CDCs can receive funding from a variety of public and private sources. Banks could be allowed to invest up to 10 percent of their assets in the CDC. Both bankers and business people frequently face financing requests that are turned down because of under capitalization. Focusing on the longer term and venture capital needs of rural businesses should increase both the volume of fundable loans for local banks as well as the business activity in the area. The Bank CDC has the additional advantage of being able to provide or make management advice part of the financing package. This is something banks

cannot do without putting their collateral at risk. Some urban banks have used Bank CDCs, but rural banks have not.

FCS officials have been exploring expanding their charter to service all rural businesses. Just broadening the charter would place additional financial institutions in the rural nonfarm credit market competing with local banks for the existing pool of loans. Learning to make loans to nonfarm businesses would likely be expensive. Both the Farmers Home Administration (FmHA) and the Small Business Administration (SBA) experienced significant losses when FmHA began making nonagricultural business loans and SBA began making farm loans. Once the FCS portfolio became diversified, there was no particular reason to believe that this institution would function any differently than existing local banks. Allowing the FCS to enter the market only through Bank CDCs would create an incentive to establish Bank CDCs in rural areas. The FCS could diversify its portfolio and increase the fundable loan pool available to existing financial institutions.

Government loan guarantees through SBA and FmHA continue to have the potential of making debt capital available for rural businesses. Unfortunately, rural banks are notorious for their reticence to use these programs. The reason normally given is that the volume of these types of loans is so small that no one is trained to handle the paper work requirements. The bank CDCs suggested above could use these programs in putting financial packages together, thus making existing government programs more accessible to rural businesses.

Policy initiatives to help in creating higher paying jobs include

the establishment of small business educational programs designed to enhance entrepreneurial skills and management capacity; the development of pilot projects in business schools to educate potential and existing managers of rural businesses in modern business management practices; the expansion of technical planning assistance; and the establishment of service centers for essential business services that could be located in existing rural governmental offices.

Revitalizing rural institutions

Besides the creation of Council of Governments (COGs), rural government structures remain as they were created and that is to address historic conditions that do not exist today. The most commonly offered solution to rural institutions like school and hospital districts, is consolidation that carries with it the undesirable side effect of loss of community identity. Rural communities are often reluctant to cooperate with neighbors. However, federal leadership could facilitate this approach. Several alternatives are possible including the following solutions:

- Mandate exploration of multicomunity options.
- Develop procedures for sharing current program resources and responsibilities across jurisdictional lines.
- Provide education and technical assistance to identify the benefits from cooperative efforts, teach the necessary mechanisms, and overcome

the cultural resistance to cooperation.

- Increase the ease of government restructuring. State and federal legislative districts change regularly but there is no provision for restructuring local government.
- Institute government sunset provisions.

Policies facilitating the revitalization of rural governmental institutions would make existing programs more accessible to rural residents, particularly where small scale and dispersed population are the current limiting factors. Without one or more of these alternatives, consolidation will remain the primary option.

Enhancing the capacity of rural people

Rural policy has historically focused on infrastructure, business finance and industrial recruiting to the neglect of human capacity. The enhancement of human capacity is complementary to the effective use of infrastructure and capital as well as to the development of a skilled work force to take advantage of recruitment efforts. This area includes items like literacy training, primary and secondary education, adult education, job training and other work force services and health care. Aiding capacity building is a long-run development strategy designed to improve the general quality of the rural labor force. Spending more on literacy training and primary and secondary education reduces the need for job training of the uneducated in the future.

Most of this area is not under the purview of the 1995 farm bill.

However, offices of the USDA agencies are located throughout rural America, and some of these agencies are involved in nutritional programs and adult education. The proximity to rural people is important for reasons of both culture and distance. Effective delivery of certain types of services and training requires delivery close to the recipient's home.

For example, the Women, Infants and Children's program (WIC) has been effective in reaching low income, illiterate women with nutritional assistance. Several policy makers have suggested that a literacy component could be added to this program that already reaches a specific target audience. A more literate rural population would need less retraining. It would put rural areas in a more favorable position to compete for jobs in the expanding service and high-tech manufacturing sectors. Without reduced illiteracy, rural areas will continue to generate high levels of unemployment.

Adult education and job training could be added to the mission of the Extension Service that already provides similar training for those engaged in agricultural pursuits. Unlike modification of the WIC program, this would involve both broadening of the subject matter taught and an expansion of the target audience. In areas fortunate enough to have other service providers, coordination and cooperation would be key factors.

Delivering educational services through existing, compatible rural institutions may be an effective way to reach into areas not well served. This has been done before. During the late 1960s, the United States Department of Labor (USDL) contracted

with the Extension Service and other agencies in several states to deliver work force services in rural areas. The project, called Hitchhike, delivered programs like employment services, job counseling and job training. This may be an option as maintaining single purpose offices becomes more difficult in areas experiencing population loss. While health care and most education and work force services are not typically offered through the USDA agencies, these services may be provided through cooperative agreements.

Rural infrastructure development

Governments have traditionally played a key role in financing major public services and facilities such as highways, roads, bridges, sewer and water facilities and industrial sites or parks. Such facilities are essential for the movement of people and goods and for the operation of businesses whether in rural or urban areas. Without the adequate maintenance of infrastructure in rural areas, business growth will be limited. Meeting mandatory government standards for water quality, solid waste disposal and other regulatory demands may require federal assistance. Many rural areas do not have adequate tax bases to meet mandatory standards while satisfying other local needs. Matching grants could be allocated

for creative, multi-community approaches that may require the reorganization of local delivery systems to provide services more efficiently. Technical planning assistance will be necessary to help rural community leaders in developing such approaches. Access to modern telecommunication systems could be provided by federal assistance just as rural electric and telephone services have been in the past. Without access to modern telecommunication systems, business development in rural areas will be hampered. Furthermore, failure of rural areas to use this new technology could further isolate rural people rather than reduce the gap between rural and urban areas.

Conclusion

Designing a national rural policy to help rural residents and areas to realize their potential is no easy task.

The challenge as stated by Reid and Lovan is as follows:

"...it has become increasingly clear that the future viability of rural communities depends on numerous aspects of social and economic life, not merely those few (mainly infrastructure development and business finance) that have

dominated rural policy in the past. Stated in the simplest terms, there are no 'silver bullets.' Development stems from parallel advances in the competitiveness of industries and the skills of workers, from the quality and quantity of service and amenities, the skill and diligence of community leaders, from the availability of capital, and from democratic institutions that are able to produce a meaningful consensus on goals and means."

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Animal Rights and Animal Welfare

Harold D. Gulther, University of Illinois
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Background

The animal rights movement has emerged from old ideas but with new philosophical perspectives that emphasize moral and ethical standards for how humans should relate to and treat animals. Although similar attempts to revolutionize societal values concerning animal use have occurred in the past, conditions were not ripe for the movement to be taken seriously. One philosopher describes the current movement as "a major revolution in social concern with animal welfare and the status of animals."

The major conflicts of values concerning animal use have arisen from a society that has changed dramatically during the 20th century. With the loss of an agrarian ethic, increased industrialization, and a society concentrated in an urban environment, people do not interact with animals in the same way or for the same purpose as in previous generations.

Production efficiency and technology have allowed consumers to be more distant from food production and other animal products. At the same time, pets have become a more important dimension of our life-styles. Under these conditions, a diversity of

attitudes, philosophies and ethics regarding animal use have developed.

Traditional values of animal care and use are being questioned by society. Animal advocacy and the promotion of a new animal ethic pose challenges to individuals who work directly with animals in any phase of business, profession, or leisure activity. These conflicts will affect how society dictates the use and care of animals in the future. And regardless of the problems in determining the status of animals in western society, the movement to recognize and protect animals will continue to grow. For owners, users and consumers of animal products and services, these new values may indeed defy conventional ways of doing business, and challenge contemporary life styles. Issues related to the environment, food safety, diet and health have also attracted animal activists to join with groups sharing these concerns.

Animal welfare is based on principles of humane care and use. Welfare positions are founded on the basic premise that animals can and will be used to benefit humans, and the responsibility of use carries certain obligations to the animals. Generally, animal use obligations include appropriate husbandry; provision of essential food, water and shelter; health care and maintenance; alleviation of pain

and suffering; and other needs.

Obligations to animals under a welfare ethic continue to evolve with society's expectations and scientific understanding of animals. However, definitions of animal welfare obligations vary. In the traditional sense, humane treatment is the primary concern, with little or no consideration of the ultimate use. But recent shifts in attitudes have challenged the traditional definition. The ultimate use of the animal is now also a concern.

Some assert that there are essential (biomedical research) and nonessential uses of animals (entertainment). These animal welfare advocates will ardently support animal use practices that are perceived to produce widespread benefits to society, thus justifying required use of animals, but reject support for nonessential use.

Animal rights includes some fundamental differences from animal welfare. Animal rights, in its purest form (animal liberation) is not concerned with humane care and use of the animal. Rather, it focuses on whether humans have the right to view and use animals as resources and what rights animals are entitled to as living, feeling beings.

These rights are determined regardless of human benefits from animal use. Use is not a consider-

ation. However, most animal rights supporters are more pragmatic in their approach to instituting change by working to abolish cruel or abusive situations to eliminate animal suffering. Support for animal use can be found where mutual benefits are perceived for both animal and human, such as pet keeping. However, a segment of rights advocates believe that nonhuman animals are not to be used for any purpose by humans — that animals are “not ours to eat, wear, or experiment on.”

Implementing this philosophy would mean eliminating all uses of animals for food, clothing, leisure, or research purposes. In effect, this implies the adoption of vegetarian diets; the elimination of wool, leather, or fur for clothing or ornamental purposes; and the abolition of animals used for leisure activities, such as in hunting, horse and dog racing, zoos, circuses, or aquariums.

Animal rights in the political context can mean almost anything from a campaign to achieve the liberation of all animals, including pets, to much more limited goals pursued through horse-trading and compromise in the policy making process.

Reformist or Abolitionist?

Animal activists may be identified as reformists or abolitionists. The reformists usually include those who believe in the views of philosophers but want to work within the system to improve the conditions under which animals are treated.

The abolitionists work to eliminate all uses of animals that they see as causing pain and suffering. Efforts to destroy the fur apparel industry, stop veal production, stop laboratory animal research and product testing,

promote vegetarian diets, and ban hunting, are a few goals of abolitionists.

Current Situation and Forces of Change

The animal protection movement has evolved into three types of organizations: (1) local humane societies and societies for the prevention of cruelty to animals; (2) national and state organizations with a range of objectives and differing degrees of reformist and abolitionist goals, and; (3) grassroots activist organizations encouraged by the leading animal rights and animal welfare groups. Groups 2 and 3 are most involved in influencing public policies affecting animal care and treatment.

Most attempts to make national policy have occurred since World War II. The following legislation identifies successful efforts of animal welfare advocates to influence policy:

The Federal Humane Slaughter Act of 1958, with amendments in 1978, required federally-inspected meat plants to comply with humane slaughter conditions.

The Animal Welfare Act of 1966, with amendments in 1976, regulated transportation, sale and handling of dogs, cats and certain other animals used for research, and prohibited animal fighting ventures.

The Marine Mammal Protection Act of 1972 prohibits killing, capturing and harassing of any marine mammal without a permit.

The Health Research Extension Act of 1985, an amendment to the Public Health Service Act, established animal research standards, including animal care committees, and required research plans for the reduction of animal use, alternatives to animals, or the reduction of pain and discomfort to animals used in research.

The 1985 farm bill set precedent for including animal welfare issues in omnibus farm legislation and required the Secretary of Agriculture to set standards governing the humane care, treatment, and transportation of animals by dealers, research facilities, and exhibitors. These standards were to describe minimum requirements for handling, housing, feeding, watering, sanitation, ventilation, shelter from extremes of weather and temperature, adequate veterinary care, separation by species, exercise of dogs, and an adequate enriched environment to promote psychological well-being for nonhuman primates.

Each research facility must establish at least one committee of not fewer than three members to assess animal care and practices, and reflect in animal care practices society's concerns regarding animal welfare. It must also provide training for its scientists, animal technicians, and other personnel involved with animal care and treatment. The National Agricultural Library was mandated to establish an information service on employee training and animal

experimentation to reduce animal pain and stress.

The 1990 Farm Bill provided that a dealer may not obtain any live dog or cat from a source other than a city, county or state pound; a private entity under contract with a local agency, a registered research facility or an individual who bred and raised the animals. Any animal sold by a dealer must have valid certification.

The Animal Facilities Protection Act of 1992 was supported by animal users and the animal industry to stem increased incidents of vandalism, theft, and threats to research workers. After several years of effort, Congress passed a bill that made destruction of animal research or production facilities a federal offense if damage exceeded \$10,000.

Animal Welfare and Animal Rights Issues

The issues encompassing animal welfare and animal rights cover animals used for food, in research, and for pleasure and leisure activities. Animal rights and animal welfare organizations often focus their attention on a few specific issues such as fur animal production, housing and feeding veal calves, use of animals in research, egg production from hens in cages, or pet overpopulation. The issues that will most likely come up in future legislative debates include the following:

- **Humane management practices.** To what extent should government dictate management practices under which food and research animals are produced and cared for? For example,

legislation has been proposed to establish management practices for veal production. In Europe, certain management practices and space requirements have been written into law. For example, in Sweden no more than three laying hens can be kept in one cage and dairy cows must be kept on pasture at least one month each year. In the United Kingdom, the Farm Animal Welfare Council has recommended a stocking rate for broiler chickens not exceeding 34 kilograms per square meter during the growing period.

- **Humane treatment criteria.** Under what criteria will humane treatment of animals be measured if humane treatment is the objective of government rules and regulations dealing with animal care?
- **Genetically altered animal species.** Should public funds be used to develop genetically altered animal species and under what conditions should their introduction and reproduction be permitted?
- **Damage control.** Should poisoning, trapping, or shooting of animals be permitted to protect domestic livestock and crops?
- **Hunting and trapping.** Under what conditions should hunting be permitted on public lands and interference of hunters be allowed? Should the steel leg hold trap be made illegal nationwide?

- **Endangered species.** Should an economic impact assessment be required when restrictions on the use of public and private lands are considered because a species of animal or bird is threatened or endangered?
- **Animals in research.** Under what conditions and for what purposes should animals be used in research? Animal research is now subject to regulation and control. Some groups advocate prohibition of all animal research.

Policy Alternatives and Consequences

Control and Regulation of Management Practices

Individual producers now have almost complete freedom to choose those management and production practices that they believe will give most efficient production and lowest cost per unit produced. Policy choices include the following:

- Let producers decide what they believe are the best management and production practices. The traditional criteria by which livestock and poultry well-being has been measured in the past — growth patterns, weight gains and appearance — are being questioned. Such standards may not be acceptable to the animal rights advocates.

- Establish boards or commissions, as the European Union and some individual European countries have done, to establish acceptable “humane” practices for producing livestock and poultry. Educate producers and encourage compliance with these recommended practices. Questions are not only emanating from the animal advocacy community, but have been developing within the scientific community as well. However, the intention of each community for the development and use of animal welfare information is different. The commission would reconcile these different views to the benefit of all societal segments.
- Establish rules and regulations through the public hearing process and enforce compliance through law enforcement officials and levy fines for noncompliance.
- Require labeling of animal, dairy and poultry products to indicate the type of production practices used.

The development of “acceptable humane practices” could result in 1) the development of more rigid systems of production that would be viewed as more humane, and more easily enforced, or 2) the development of systems that could provide optimal animal production and enhanced animal welfare under a variety of production conditions. If humane standards were established and enforced by government rules and regulation, the outcome could bring higher production and

marketing costs, lower returns and reduced incentives for investment in the animal industry. Considerable disagreement as to what practices are really humane could result.

Agribusiness firms have an important stake in policy decisions that affect management and production practices. If new facilities were required, the production and marketing of the new facilities and equipment would benefit agribusiness. However, if regulations and restrictions reduce production, those involved in processing and marketing these products would suffer reduced business.

New policies that would increase costs and reduce supplies of animal, dairy or poultry products could raise food costs for consumers. However, some consumers will pay more for a product that has been produced under what they believe is more humane conditions. In Europe, many stores feature “free-range” eggs from hens allowed to run out in open lots. Prices reflect the higher costs as in the case of organic foods in the United States.

New policies that bring about new regulations also add up to more bureaucracy, more civil servants to implement the policies, and more costs to taxpayers. The alternatives are not just more or less regulation, but what values the public believe are important enough to pay the cost of such policies.

Genetically engineered livestock and poultry

Policy choices include the following:

- Prohibit all research with animals to develop new

genetically engineered strains.

- Permit research on genetically engineered strains but allow no patenting of genetically developed strains.
- Permit both private industry and publicly funded genetic research and permit patents for successfully developed new strains.

Genetically engineered strains of livestock and poultry could mean increased efficiency and profits for some producers. However, if patent restrictions limit a producer’s rights to reproduce and sell these new strains or types of animals, the economic benefits may accrue mostly to the developers and patent holders.

Biotechnology could open new markets and opportunities for the agribusiness community. New animal strains, growth hormones, or other products that enhance production would be quickly adopted by producers. The agribusiness firms and dealers marketing these products would see expanded growth and business volume.

One concern of environmental groups is the effect of new genetically engineered plant or animal products upon the purity and diversity of the total ecosystem.

Control of predatory wild animals

Predator control has become a policy issue in part because efforts to poison predatory animals have also resulted in poisoning of non-targeted animals. Policy alternatives include the following:

- Give farmers and ranchers complete freedom to use poison baits and other means to control predators and protect their livestock.
- Restrict use of poison baits that will be harmful to other animals and birds.
- Prohibit use of all poison baits and other predator control measures.
- Develop baits that more specifically control the target predators without harming the non-targeted animals and birds.

Restrictions on damage control practices such as poisoning of predatory animals could mean greater losses for livestock producers and could discourage production in some parts of the country. Sheep producers in the west have been adversely affected by limits on poisoning of coyotes. However, further research is underway to find more targeted ways to control predatory animals, avoid harm to non-targeted creatures, and reduce predator control costs for producers.

Environmental concerns have resulted in limits on the poisoning of predatory animals. The predators could become threatened if too many were killed. Poison intended for the predators has caused losses of other valuable wildlife species that were not predators on domestic livestock.

Rules and regulations under the Endangered Species Act have affected the lumber industry more than animal production up to this time. However, future determinations could affect those who graze animals on public lands where endangered species are found.

Private land owners could also be affected if restrictions are placed upon how their land is used for farming purposes.

Hunting and Trapping

Although a long standing tradition in rural America, hunting and trapping are viewed as cruel and inhumane by many concerned with animal welfare and animal rights. However, the sale of hunting rights has become a significant source of ancillary income for some farmers. Policy alternatives include the following:

- Prohibit all hunting and trapping except among those who must depend upon these activities for food and economic survival.
- Prohibit hunting and trapping on public lands, but permit these activities on private land.
- Let states make their own policies regarding hunting and trapping.
- Let states set policies for hunting, but prohibit use of the leg hold steel trap or other devices that are considered cruel and unnecessary.

Public policies dealing with hunting and trapping could adversely affect those rural residents who have had relatively free choice in the hunting and trapping activities. Animal advocates generally oppose hunting and trapping. Conservation groups support controlled hunting to maintain adequate wildlife populations that can survive and reproduce. Restrictions on hunting and trapping that affect

threatened or endangered species would be supported by environmental groups.

Research with Food and Laboratory Animals

Current policies require oversight on research plans and implementation. It allows research approved by a committee or board to insure humane treatment to the greatest extent possible and the minimum number of animals needed to conduct the project while still producing valid results. This is the current policy under the Animal Welfare Act. The policy choices include the following:

- Allow unrestricted the use of food and laboratory animals for research purposes.
- Prohibit all biomedical, product testing and farm animal research.

Restrictions on use of animals in research or product testing could raise costs or restrict availability of new drugs or household products. Those who suffer from diseases or other ailments have very special concerns about restrictions that could affect their future health and well-being.

Conclusion

Animal rights and animal welfare issues are not likely to be the highest priority issues during the 1995 farm bill debate. However, animal activists will continue to pursue their goals and join with other groups that share common environmental, health and food safety concerns. Farmers,

agribusiness, consumers and their organizations need to be a part of this dialogue as part of the political process.

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Predator control has become a policy issue in part because efforts to poison predatory animals have also resulted in poisoning of non-targeted animals. Policy alternatives include the following:

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Environmental concerns have resulted in limits on the poisoning of predatory animals. The predators could become threatened if too many were killed. Poison intended for the predators has caused losses of other valuable wildlife species that were not predators on domestic livestock.

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- Prohibit all hunting and trapping except among those who must depend upon these activities for food and economic survival.
- Prohibit hunting and trapping on public lands, but permit these activities on private land.
- Let states make their own policies regarding hunting and trapping.
- Let states set policies for hunting, but prohibit use of the leg hold steel trap or other devices that are considered cruel and unnecessary.

Public policies dealing with hunting and trapping could adversely affect those rural residents who have had relatively free choice in the hunting and trapping activities. Animal advocates generally oppose hunting and trapping. Conservation groups support controlled hunting to maintain adequate wildlife populations that can survive and reproduce. Restrictions on hunting and trapping that affect

threatened or endangered species would be supported by environmental groups.

Research with Food and Laboratory Animals

Current policies require oversight on research plans and implementation. It allows research approved by a committee or board to insure humane treatment to the greatest extent possible and the minimum number of animals needed to conduct the project while still producing valid results. This is the current policy under the Animal Welfare Act. The policy choices include the following:

- Allow unrestricted the use of food and laboratory animals for research purposes.
- Prohibit all biomedical, product testing and farm animal research.

Restrictions on use of animals in research or product testing could raise costs or restrict availability of new drugs or household products. Those who suffer from diseases or other ailments have very special concerns about restrictions that could affect their future health and well-being.

Conclusion

Animal rights and animal welfare issues are not likely to be the highest priority issues during the 1995 farm bill debate. However, animal activists will continue to pursue their goals and join with other groups that share common environmental, health and food safety concerns. Farmers,

agribusiness, consumers and their organizations need to be a part of this dialogue as part of the political process.

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FARM BILL

Policy
Options

Consequences

