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The Emerging Merger of Agricultural and Environmental Policy: Building a New Vision for the Future of American Agriculture

by

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THE EMERGING MERGER OF AGRICULTURAL AND ENVIRONMENTAL POLICY: BUILDING A NEW VISION FOR THE FUTURE OF AMERICAN AGRICULTURE

Michael R. Taylor*

I.	ABSTRACT.....	170
II.	INTRODUCTION.....	170
III.	U.S. AGRICULTURAL POLICY IN THE PAST	172
	A. <i>Supporting Farmer Income and Abundant Production</i>	172
	B. <i>Economic Rationale</i>	174
	C. <i>Political Rationale</i>	174
IV.	CONSEQUENCES OF U.S. AGRICULTURAL POLICY	175
	A. <i>Abundant Food at Low Cost</i>	175
	B. <i>Larger and Fewer Farms</i>	175
	C. <i>Environmental and Natural Resource Costs</i>	176
	D. <i>Undercutting Market Opportunities for Developing World Farmers</i>	177
V.	THE BEGINNING OF CHANGE IN U.S. AGRICULTURAL POLICY.....	178
	A. <i>Elevating the Priority of Conservation as a Farm Policy Goal</i>	178
	B. <i>Producing for the Market: The Decoupling of Income Support and Planting Decisions</i>	181
VI.	FORCES THAT WILL SUSTAIN CHANGE	182
	A. <i>Market Liberalization</i>	183
	B. <i>Food Security and Developing World Agriculture</i>	184
	C. <i>Agricultural Sustainability and Long-Term Food Security</i>	184
	D. <i>Where Are We Going and Why?</i>	186
VII.	TOWARD A NEW VISION FOR AGRICULTURE: QUESTIONS WORTH ASKING	186
	A. <i>What is economic success for agriculture?</i>	187

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B. <i>What is society's duty to farmers?</i>	187
C. <i>What do we really mean by environmental sustainability?</i>	187
D. <i>Who is responsible for the environmental sustainability of agriculture?</i>	188
E. <i>What is the proper role of U.S. agriculture in the global food system?</i>	188
F. <i>What is the proper U.S. role in achieving global food security?</i>	189
G. <i>What should be the priority drivers of U.S. agricultural policy?</i>	189
VIII. CONCLUSION	190

I. ABSTRACT

Over the past twenty years, a virtual revolution has occurred in the public policy environment surrounding American agriculture. Market liberalization has become a central theme of agricultural policy, challenging longstanding price support programs and direct income subsidies for farmers; conservation and environmental issues have moved from the periphery to the center of farm policy debates; and the public is paying increasing attention to agriculture as controversies about biotechnology, the "industrialization" of agriculture, and globalization spill over into the mass media. This revolution is just beginning. Change will continue to be propelled by domestic political pressure and by the persistent logic and momentum of the increasingly global food economy. The pressure for change will certainly challenge American agriculture, but it also provides the opportunity and impetus to formulate a new vision for agriculture – one that respects and harnesses markets, conserves our natural resources, protects the environment, and makes the United States a positive contributor to a successful global food system. This essay argues that one element of such a vision is likely to be the continued convergence of agricultural and environmental policy. It describes the forces pushing in that direction and identifies some of the critical questions that underlie the construction of a new vision for American agriculture – one that merges the economic interests of American farmers with the public interest in an environmentally and socially sustainable agricultural system.

II. INTRODUCTION

Throughout history, no human enterprise has been more

fundamentally important to the survival and welfare of societies than agriculture. Without successful agriculture, there is no civilization, no Industrial Revolution, and no food on the table. That is why, for thousands of years, organized societies all around the world have grappled with fundamental questions of "food security."¹ Who controls the land and other productive resources? Is enough food being produced, consistently over time? Is it of acceptable safety and quality? Is food physically and economically accessible to all people?

Beyond its role in meeting basic food needs, agriculture is one of human society's most pervasive and consequential environmental interventions. Agriculture harnesses the natural resources of soil, water, and seed to produce food and fiber on a massive scale. Modern agriculture achieves this production by inserting into the environment large quantities of fertilizer and pesticides, consuming energy from largely non-renewable sources, and building dams, irrigation systems, and other physical infrastructure. As environmental values have become part of the mainstream public ethos, fundamental questions are being asked about the impact of agriculture on the environment: is agriculture imposing unacceptably high costs on the health and welfare of society through its intensive use of fertilizer, chemical pest control agents, and energy? Are we using the natural resources (land, soil, water, and energy) in a way that jeopardizes the ability of future generations to produce the food they will need? Are there alternative ways to produce the food we need? These questions relate to what is now commonly called "agricultural sustainability."²

Because society depends on agriculture for a secure and sustainable food supply, agriculture has been and will continue to be a legitimate subject of public policy. In a world whose economic and social structures are changing so rapidly, it is not surprising that society's relationship with agriculture is changing.

We are in the midst of a virtual revolution in agricultural policy.

¹ Food security exists in a community when all people at all times have physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life. See *Food and Agric. Org. of the U.N., Report of the World Food Summit 13-17th Sess.*, pt. 1, U.N. Doc. WFS 96/REP (1997) [hereinafter *World Food Summit*].

² "A sustainable agriculture is one that, over the long-term, enhances environmental quality and the resource base on which agriculture depends; provides for basic human food and fiber needs; is economically viable; and enhances the quality of life for farmers and society as a whole." This definition was published by the American Society of Agronomy. See *Decision Reached on Sustainable Agriculture*, AGRONOMY NEWS, Jan. 1989. A similar, slightly expanded, definition was adopted the next year by Congress in the Food, Agriculture, Conservation and Trade Act of 1990, Pub. L. No. 101-624, 104 Stat. 3359 (1990) (codified as amended at 5 U.S.C. § 3132; 7 U.S.C. § 71 (2000)).

Government programs to support prices, manage production levels, and provide direct income assistance to farmers are being challenged by calls for market liberalization, with the government having already taken some initial, albeit halting, steps to reduce such government interventions. Conservation and environmental protection have, over the past 20 years, moved to the center of farm policy debates. And the public's interest in food safety, pesticides and biotechnology are putting production agriculture in the public policy spotlight in entirely new ways.

The revolution in agricultural policy is indeed underway. It is a gradual revolution, likely to be unfolding over the next decade or more. And its outcome is far from certain. It will continue to be fueled, however, by fundamental social, economic and political forces and by the real world intersection between agriculture—humanity's most essential enterprise—and the environment—on which we all rely for survival. The questions are: where is this revolution in agricultural policy taking us? Where *should* it be taking us?

This essay will briefly describe agricultural policy in the United States and some of its consequences, the forces driving change, the nature of the change to date, and the need for a new, positive vision to guide agriculture's future. It will then identify some of the questions that need to be addressed to formulate and fulfill a vision that respects and harnesses markets, conserves our natural resources, protects the environment, and makes the United States a positive contributor to a successful global food system.

III. U.S. AGRICULTURAL POLICY IN THE PAST

A. Supporting Farmer Income and Abundant Production

Modern U.S. agricultural policy has its origins in the experience of the Great Depression of the 1930s. Farms were failing, and people were hungry. The New Deal government of Franklin Roosevelt settled on massive public investment and market intervention to bring the country's economy back to life and provide a social safety net. The Agricultural Adjustment Act of 1938³ was part of the recovery package and opened the modern era of extensive government intervention in the agricultural marketplace.

Agricultural production boomed during World War II, and the

³ Agricultural Adjustment Act of 1938, Pub. L. No. 75-430 (codified as amended at 7 U.S.C. § 1311).

postwar years brought a new concern: that expanding production in the U.S. and in Europe, Australia and South America would depress prices and, in turn, farm income. Congress responded with the Agriculture Act of 1949, which amended the 1938 Act and remains the permanent authority for the government's major commodity programs.⁴ Until the 1996 enactment of the so-called Freedom to Farm Act,⁵ the 1938 law and subsequent amendments provided the core conceptual framework for U.S. agricultural policy.

The basic idea of these laws was to maintain farm income and keep farms in business by insulating farmers from market risks, principally in the form of low prices. The 1938 Act and subsequent farm legislation have attempted to do this through various mechanisms designed to manage supplies, support farm prices, and directly supplement farm incomes.⁶ For example, the prices dairy farmers receive for their milk have often been supported above market levels by government purchases of processed dairy products that do not clear the market at a government determined support or "floor" price.⁷ Similarly, beginning in the 1970s, producers of certain commodities (most prominently corn, wheat, cotton and rice) have had their incomes directly supported through a system of deficiency payments, under which the government pays farmers the difference between the price their crops receive in the market and a government set target price.⁸ The government has also attempted to limit the supply, and thereby bolster the price, of certain commodities through, for example, acreage reduction programs for major crops, acreage allotments (as on tobacco), and marketing quotas (for peanuts), or by limiting deficiency payments to crops grown on some percentage of the farmer's "base" acres in that crop.⁹

No other sector of the American economy has received this high degree of direct government economic support and market intervention. From 1985 to 1994, deficiency payments for growers of feed grains (corn, barley, sorghum and oats), wheat, rice, and cotton

⁴ Agriculture Act of 1949, Pub. L. No. 89-439 (codified as amended at 7 U.S.C. § 1421).

⁵ Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, 110 Stat. 888 (codified as amended at 7 U.S.C. § 7201).

⁶ See generally ECON. RESEARCH SERV., U.S. DEPT OF AGRIC., [AGRIC. INFO. BULLETIN NO. 485] THE HISTORY OF AGRIC. PRICE-SUPPORT AND ADJUSTMENT PROGRAMS, 1933-84, (1984); WILLARD COCHRANE, THE DEV. OF AM. AGRIC.: AN HISTORICAL ANALYSIS (1979); Anne B. W. Effland, *U.S. Farm Policy: The First 200 Years*, AGRICULTURAL OUTLOOK, March 2000, at 21.

⁷ See COCHRANE, *supra* note 6, at 379.

⁸ See *id.*

⁹ See *id.*

totaled over \$75 billion.¹⁰ Net outlays for the dairy price support system during the same period totaled almost \$10 billion.¹¹ Over the past decade, USDA has spent on average about \$13.5 billion annually on economic assistance for farmers, with peaks in recent years as high as \$28 billion in response to "emergency" conditions.¹²

B. Economic Rationale

The traditional economic argument for supporting farmers in these ways is based on differences between farming and other businesses. Farmers are uniquely vulnerable to weather and to unpredictable changes in market conditions (especially prices) between the time they plant their crops and the time the crops are harvested and marketed. Moreover, demand for agricultural commodities is generally unresponsive to changes in price. For example, in high income countries like the United States, people do not increase their food purchases very much just because food is cheap. There are also practical limits on storage of most commodities on the farm, which means that farmers have to sell into the existing market whether prices are low or not. If farmers are left completely exposed to the risk of low prices, so the argument goes, many will not be able to stay in business, and the prosperity of the farm economy and our stable supply of low cost food will be in jeopardy.

C. Political Rationale

Coupled with this economic justification, there are political realities in the United States that make the government's involvement in agriculture, and its dedication to assisting farmers, a built-in fact of American life. Our history is deeply rooted in agriculture. When independence was declared in 1776, 90% of Americans lived on farms. When the basic economic support programs were established in the 1930s, about 20% of Americans still lived on farms, which were over six million in number.¹³ The demographics of agriculture have

¹⁰ See DAVID PEACOCK, U.S. DEPT OF AGRIC., FARM BUS. ECON. REPORT (ECI-1997), <http://www.ers.usda.gov:80/publications/ECI1997>.

¹¹ See RALPH M. CHUTE, CONG. RESEARCH SERV., DAIRY POLICY ISSUES, Report for Congress Issue Brief 97011 (2000), http://www.cnie.org/nle/ag-29.html#_1_6.

¹² See FOOD AND AGRIC. SECTION, CONG. RESEARCH SERV., FARM BILL ISSUES: OVERVIEW, Issue Brief 95058 (1996), <http://www.cnie.org/nle/ag-8.html>. Farm assistance varies widely, getting as high as nearly \$28 billion in FY2000. See JEAN YAVIS JONES, CONG. RESEARCH SERV., AGRIC. & THE 106TH CONG.: A SUMMARY OF MAJOR ISSUES, Issue Brief RS20452, (2000), <http://www.cnie.org/nle.ag-82.html>.

¹³ See ECON. RESEARCH SERVICE, U.S. DEPT OF AGRIC., A HISTORY OF AM. AGRIC. 1776-1990, <http://www.usda.gov/history2/text3.htm> (last visited November 21, 2000) [hereinafter

changed drastically since then. Now only 2% of Americans live on about two million farms, most of which are part-time operations. In 1992, 63,000 farms (3% of the total) accounted for over 50% of all farm sales.¹⁴ Despite the declining number of small family farms, Americans continue to culturally identify themselves with farms and farmers. A substantial majority of Americans believe it is in the country's interest to preserve small family farms.¹⁵

The political clout of agriculture is grounded also in basic political science. The structure of government created by our founders gives farm states disproportionately high representation in Congress. Only 2% of Americans live on farms, but over half of the U.S. Senate comes from largely rural states in which agriculture is a key element of the economy and culture. As a result, farmers have a loud voice in Washington when they come with concerns about low prices or the harm done by bad weather or natural disasters, and they work hard to shape farm policy that has a direct economic impact on their lives. This adds up to substantial political weight.

IV. CONSEQUENCES OF U.S. AGRICULTURAL POLICY

A. Abundant Food at Low Cost

By some important measures, U.S. agricultural policy is a great success. American agriculture produces basic commodities – such as corn, wheat, rice, soybeans, and cotton – in abundance and with high efficiency. These crops provide key raw materials for most of our processed foods and animal feeds. Likewise, the dairy and animal production industries put high quality protein on American tables at low cost. All together, the productive base built up in the United States since the 1930s ensures that Americans can count on a stable, relatively low cost supply of food. Thus, U.S. food security, insofar as it is affected by the physical availability of food, has been assured.

B. Larger and Fewer Farms

On the other hand, productivity and efficiency come at a cost in

HISTORY OF AM. AGRIC.]. See also ECON. RESEARCH SERV., U.S. DEPT OF AGRIC., STRUCTURAL AND FIN. CHARACTERISTICS OF U.S. FARMS (December 1998), <http://www.ers.usda.gov/epubs/pdf/aib746/> [hereinafter STRUCTURAL & FIN. CHARACTERISTICS] (providing a detailed analysis of changes in farm structure, income, and management).

¹⁴ See STRUCTURAL & FIN. CHARACTERISTICS, *supra* note 13.

¹⁵ See M.G. Dalecki & C.M. Coughenour, *Agrarianism in American Society*, 57(1) RURAL SOC. 48, 56 (1992).

terms of the basic structure of agriculture and the welfare of individual farmers. Some argue that the system of deficiency payments for corn, wheat, rice and cotton producers is a major contributor to the concentration that has been occurring in agriculture over the past several decades.¹⁶ By limiting payments to a specified acreage planting base, it is argued, the system tied farmers to planting the same crop year after year and made ever-increasing yield per acre important to income growth.¹⁷ Efficiency and yield growth have also been an important focus of government sponsored agricultural research.¹⁸ This drive for efficiency places a premium on capital-intensive, high-volume, high-tech production techniques, which in turn requires larger and larger farm sizes over which to spread the cost. Farmers who have had the opportunity and resources to invest in technology and expand their operations have generally done well. Others have found it difficult to compete with the more efficient, large-scale operations and have been left behind economically or been forced off the farm.¹⁹ While many social and economic factors have affected the exodus from the farm, U.S. farm policies have played an important role.²⁰

C. Environmental and Natural Resource Costs

The intensive, monoculture approach to farming encouraged by past U.S. agricultural policy also has an environmental and natural resource cost. It tends to use large amounts of chemical fertilizer to replace soil nutrients and, by increasing the vulnerability of crops to plant diseases and pests, requires extensive use of chemical pest control agents.²¹ These chemicals can affect water quality and safety through run-off into streams and rivers and contamination of groundwater, and they pose hazards for farm workers and food safety that are difficult to fully

¹⁶ See RICK WELSH, HENRY A. WALLACE INST. FOR ALTERNATIVE AGRIC., REORGANIZING U.S. AGRIC.: THE RISE OF INDUS. AGRIC. & DIRECT MKTG. (1997), <http://www.hawiaa.org/pspr7.htm>; RICK WELSH, HENRY A. WALLACE INST. FOR ALTERNATIVE AGRIC., THE INDUS. REORGANIZATION OF U.S. AGRIC.: AN OVERVIEW & BACKGROUND REPORT (1996), <http://www.hawiaa.org/pspr6.htm> [hereinafter INDUS. REORGANIZATION].

¹⁷ See INDUS. REORGANIZATION, *supra* note 16.

¹⁸ See KEITH FUGLIE ET AL., U.S. DEPT' OF AGRIC., AGRIC. ECON. REPORT NO. 735, AGRIC. RESEARCH AND DEV.: PUB. & PRIVATE INV. UNDER ALTERNATIVE MARKETS AND INST., (1996).

¹⁹ See INDUS. REORGANIZATION, *supra* note 16.

²⁰ See *id.*

²¹ See TRACY IRWIN HEWITT & KATHERINE R. SMITH, HENRY A. WALLACE INST. FOR ALTERNATIVE AGRIC., INTENSIVE AGRIC. & ENVTL. QUALITY: EXAMINING THE NEWEST AGRIC. MYTH (1995), <http://www.hawiaa.org/iaeq.htm>.

assess and prevent.²² Large-scale monoculture also contributes to soil erosion and consumes water and energy in large amounts, to the point that some question its long-term sustainability from an environmental perspective.²³

A similar increase in the scale and environmental impact of agricultural operations has occurred in the production of cattle, hogs and poultry. Large-scale, confined animal feeding operations (“CAFOs”) generate large quantities of waste in relatively small areas, which may pose serious solid waste, water pollution, and air quality issues if not properly managed.²⁴

From a policy perspective, a notable feature of the current U.S. agricultural system is that the full environmental costs of producing food are not, in the jargon of economists, internalized. For example, nitrogen run-off into streams and rivers (the result of heavy fertilizer use to maintain yields on nitrogen-depleted soil) imposes economic costs on society in the form of harm to aquatic species, water purification costs, and potential human health impacts.²⁵ These costs are not borne directly by farmers or other participants in the food production system (and thus are not reflected in the price of food), rather they are borne instead by taxpayers who foot the bill for cleanup or by those whose economic activity is harmed by poor water quality. These costs are externalities. Because the environmental costs of fertilizer use, for example, are shifted to others, those who impose the costs and enjoy the benefit most directly – fertilizer manufacturers and farmers – have little or no market-based incentive to change practices. The same basic analysis applies to other resource and environmental impacts of agriculture, such as the air and water quality impact of CAFOs, the health costs associated with worker and consumer exposure to pesticides in the field and in food, and the contribution of agriculture to carbon dioxide emissions.

D. Undercutting Market Opportunities for Developing World Farmers

Finally, by insulating U.S. farmers from the market risk of low prices and attendant market signals to produce less, U.S. agricultural policy effectively subsidizes chronic overproduction of basic

²² See *id.*

²³ See *id.*

²⁴ See INDUS. REORGANIZATION, *supra* note 16. It is important to note that small-scale operations also have environmental impacts, such as non-point source pollution of waterways from agricultural run-off, and are not subject to the same regulatory controls as some larger facilities.

²⁵ See HEWITT & SMITH, *supra* note 21.

commodity crops in relation to domestic demand. This policy contributes to a global economic structure for agriculture that is neither efficient nor fair. U.S. surpluses seek outlets in world markets through export sales and food aid, which tends to depress global prices for basic commodities and undercut incentives for investment in agriculture elsewhere, including in developing countries.²⁶ This system is inefficient to the extent that public funds are being used to sustain U.S. producers and production that would not be viable in a free market. It is unfair to the extent that this use of American wealth is impeding the development of agriculture in the poor countries of Africa and elsewhere.²⁷

It is important to note that the United States is not alone in subsidizing its farmers to the potential detriment of farmers in developing countries. Indeed, countries in Europe have historically been more aggressive than the United States in subsidizing farmers.²⁸ This simply underscores the fact, however, that agricultural policy is global and the impact of U.S. policy has to be understood and assessed from a global as well as a domestic perspective.

V. THE BEGINNING OF CHANGE IN U.S. AGRICULTURAL POLICY

As indicated at the outset, the revolution in U.S. agricultural policy has already begun with respect to both conservation and economic issues.

A. *Elevating the Priority of Conservation as a Farm Policy Goal*

As part of the 1985 Food Security Act,²⁹ Congress adopted three measures to help combat soil erosion. The most important involved use of the Conservation Reserve Program ("CRP") to stem erosion on millions of acres of highly erodible land ("HEL") by paying farmers to

²⁶ See FOOD AND AGRIC. ORG. OF THE U.N., SUSTAINABLE AGRIC. AND RURAL DEV.: REPORT OF THE SECRETARY-GENERAL (2000), <http://www.un.org/documents/ecosoc/cn17/2000/ecn172000-7.htm>.

²⁷ See PETER M. ROSSET, FOOD FIRST/THE INST. FOR FOOD & DEV. POLICY, THE MULTIPLE FUNCTIONS & BENEFITS OF SMALL FARM AGRIC. IN THE CONTEXT OF GLOBAL TRADE NEGOTIATIONS 15-16 (1999).

²⁸ See ECON. RESEARCH SERV., U.S. DEP'T OF AGRIC., ESTIMATES OF PRODUCER AND CONSUMER SUBSIDY EQUIVALENTS: GOV'T INTERVENTION IN AGRIC., 1982-92 (1994). See also FREDERICK J. NELSON, U.S. DEP'T OF AGRIC., MEASURING DOMESTIC SUPPORT FOR U.S. AGRIC. (1997), <http://151.121.66.126/Briefing/wto/AMS/august.htm>; ORG. FOR ECON. COOPERATION AND DEV., AGRIC. POLICIES, MARKETS AND TRADE IN OECD COUNTRIES: MONITORING & EVALUATION (1996).

²⁹ Food Security Act of 1985, Pub. L. No. 99-198 (1985).

take the land out of production.³⁰ The CRP also provides farmers economic and technical assistance to plant vegetation that will protect idled land from erosion. According to the Congressional Research Service, over thirty-three million acres are expected to be enrolled in the program by the end of fiscal year 2000, at an annual cost of \$1.6 billion.³¹ This is almost 9% of the 375 million acres being used for crop production in the United States.³² Since 1985, the CRP has been amended to encompass environmental concerns beyond soil erosion, such as wildlife habitat, surface water protection, and air quality.³³

The other two soil erosion programs adopted in 1985 were the Sodbuster and Conservation Compliance programs, both of which remain in place.³⁴ These programs tie a farmer's eligibility for farm program benefits to his or her practices on certain categories of highly erodible land. Under Sodbuster, farmers who cultivate HEL that had not been cultivated between 1981 and 1985 lose eligibility for price supports and other benefits. Under Conservation Compliance, farmers who are cultivating HEL must do so under a USDA approved conservation plan or they lose their farm program benefits.

The 1985 Act marked an important shift in agricultural policy because it brought conservation and environmental issues into the heart of the farm bill debate and, very importantly, created a direct linkage between farmers' conservation practices and the economic benefits they receive from government. The CRP has grown to be, by far, the largest agricultural conservation program in terms of both

³⁰ See RESOURCE ECON. DIV., U.S. DEPT OF AGRIC, AGRIC RESOURCES AND ENVTL INDICATORS, 2000; JEFFREY A. ZINN, CONG. RESEARCH SERV., SOIL & WATER CONSERVATION ISSUES, Issue Brief IB96030 (2000).

³¹ JEFFREY ZINN, CONG. RESEARCH SERV., CONSERVATION RESERVE PROGRAM: STATUS & CURRENT ISSUES, Report 97-673 (2000), <http://www.cnie.org/nle/ag-65.html> [hereinafter CONSERVATION RESERVE PROGRAM].

³² NATURAL RESOURCES CONSERVATION SERV., U.S. DEPT OF AGRIC, 1997 NATIONAL RESOURCES INVENTORY, <http://www.nhq.nrcs.usda.gov/NRI/1997/>.

³³ See CONSERVATION RESERVE PROGRAM, *supra* note 31. The Farm Services Agency uses an Environmental Benefits Index (EBI) to compare all CRP bids. The components of the EBI are evolving, and they include attention to riparian buffers, filter strips, wetlands, on-farm benefits, long-term benefits (e.g. tree planting), and others. Zinn notes one of the controversial directions the EBI may evolve: consideration of effects on sequestration of carbon dioxide. See R. Lal et al., *Managing U.S. Cropland to Sequester Carbon in Soil*, JOURNAL OF SOIL AND WATER CONSERVATION, First Quarter 1999; R. LAL ET AL., THE POTENTIAL OF U.S. CROPLAND TO SEQUESTER CARBON AND MITIGATE THE GREENHOUSE EFFECT (1998).

³⁴ For program descriptions, see JEFFREY ZINN, CONG. RESEARCH SERV., CONSERVATION COMPLIANCE FOR AGRIC.: STATUS & POLICY ISSUES, Report for Congress 96-648 (1998), <http://www.cnie.org/nle/ag-45.html>; and JEFFREY ZINN, CONGRESSIONAL RESEARCH SERV., SOIL AND WATER CONSERVATION ISSUES, Issue Brief IB96030 (2000), <http://www.cnie.org/nle/ag-18.html>.

budget and acres affected, due, no doubt, to its dual purpose. By paying farmers to take erodible and environmentally sensitive land out of production, the CRP not only protects the land but also provides economic assistance to farmers in the form of price support (through reduced production) and direct income payments. This dual purpose is politically appealing but makes "success" more difficult to define and evaluate. On the other hand, the Sodbuster and Conservation Compliance programs address only the goal of conservation. Importantly, the latter sets the precedent of using economic incentives to induce sound conservation practices *on land that is being farmed* rather than inducing farmers not to farm.

In the 1985 Act and subsequent farm legislation, Congress established many more conservation and environmental programs on topics beyond soil erosion. Among those with the most impact have been two programs to protect agricultural wetlands from damage or destruction.³⁵ The Wetlands Reserve Program ("WRP") is a voluntary program to preserve wetlands. Landowners can establish either permanent or thirty year conservation easements in exchange for payments up to the agricultural value of the land. They can also enter cost-share restoration agreements of ten years or longer. Another important wetlands program is called "Swampbuster." Similar to the Sodbuster program for highly erodible land, Swampbuster forbids farm program benefits from being paid to farmers who convert wetlands to crop production.

Congress has also established programs to protect wildlife habitat,³⁶ conserve and improve private grazing lands,³⁷ protect rivers, streams, and groundwater from contamination with pesticides and other agricultural run-off (nonpoint source pollution),³⁸ and address waste

³⁵ For descriptions of both, see AGRIC. RESOURCES AND ENVTL. INDICATORS, 2000, *supra* note 30, especially ch. 6, § 5, *Wetlands Programs*, and § 4, *Water Quality Programs*. See also JEFFREY ZINN & CLAUDIA COPELAND, CONG. RESEARCH SERV., WETLAND ISSUES, Issue Brief IB97011 (2000).

³⁶ The Wildlife Habitat Incentives Program provides financial incentives to develop habitat for fish and wildlife on private lands. USDA shares the cost of implementing a wildlife habitat development plan. See NATURAL RESOURCES CONSERVATION SERV., U.S. DEPT OF AGRIC., USDA CONSERVATION PROGRAMS, <http://www.nrcs.usda.gov/NRCSProg.html>. See also ZINN & COPELAND, *supra* note 35.

³⁷ The Conservation of Private Grazing Land Initiative provides technical and educational assistance to owners of private grazing lands. See USDA CONSERVATION PROGRAMS, *supra* note 36. See also AGRIC. RESOURCES AND ENVTL. INDICATORS, 2000, *supra* note 30, especially ch. 6, § 1, *Overview of Conservation Programs and Expenditures*.

³⁸ Various voluntary programs reward farmers for taking measures to protect ground and surface water. The Environmental Quality Incentives Program ("EQIP"), for example, provides technical, educational, and financial assistance to farmers who implement conservation plans.

management practices at feedlots.³⁹ While most of these programs involve voluntary participation by farmers and various approaches to cost sharing and technical assistance, they further reflect the emergence of conservation and environmental issues as important elements of agricultural policy.

B. Producing for the Market: The Decoupling of Income Support and Planting Decisions

Beginning in the 1980s, farmers and policy experts realized that the system of income support for corn, wheat, rice, cotton, and other basic commodities, which tied payments to the continuation of established planting patterns and government-imposed acreage reductions, hindered the ability of U.S. farmers to respond to signals from the increasingly global market for agricultural commodities. The result was oversupply and reduced prices for some crops and, in other cases, an inability to capitalize on market opportunities.⁴⁰ In the 1990 farm legislation, Congress took an initial step toward building some planting flexibility into the income support program,⁴¹ however, in 1996, Congress made a more significant shift toward a market oriented agricultural policy.

In the 1996 farm legislation, dubbed the Freedom to Farm Act, Congress ended the link between income support payments and planting decisions for "contract crops" (wheat, corn, rice, upland cotton, grain sorghum, barley, and oats).⁴² Farmers were required

Such plans may include integrated pest management to reduce pesticide use, filter strips along streams to catch run-off from fields, animal waste management plans, fertilizer management, wildlife habitat, tree planting, and other measures. See USDA CONSERVATION PROGRAMS, *supra* note 36. See also, JEFFREY ZINN, CONG. RESEARCH SERV., ENVTL. QUALITY INCENTIVES PROGRAM (EQIP): STATUS & ISSUES (1998).

³⁹ Before the 1996 Farm Bill, animal waste issues were not explicitly addressed by conservation programs, though some indirectly addressed them under water quality. The 1996 bill still addresses them only indirectly, though explicitly, through the water quality provision in the EQIP. However, in 1998 the USDA and the EPA jointly created a Unified National Strategy for Animal Feeding Operations (draft published in Federal Register, September 21, 1998) as part of the President's Clean Water Action Plan. Also in 1998, USDA instituted the Task Force on Agricultural Air Quality, with a mandate to examine animal waste management issues besides water quality. The Task Force recently issued its report. See AIR QUALITY RESEARCH & TECH. TRANSFER WHITE PAPER & RECOMMENDATIONS FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (2000), <http://www.nhq.nrcs.usda.gov/faca/Policies/CAFO.htm>.

⁴⁰ See C. EDWIN YOUNG & PAUL C. WESTCOTT, U.S. DEPT OF AGRIC., THE 1996 U.S. FARM ACT INCREASES MKT. ORIENTATION, Agric. Info. Bulletin No. 726 (1996).

⁴¹ See The Food, Agric., Conservation and Trade Act of 1990, Pub. L. No. 101-624, 104 Stat. 3359 (1990).

⁴² See YOUNG & WESTCOTT, *supra* note 40.

instead to enter into "production flexibility contracts" covering the 1996-2002 planting seasons under which they would be free to plant virtually what they want on as many acres as they want, presumably in response to market signals.¹³ Farmers would receive set payments through 2002 on a declining scale based on their historical base acreage, regardless of the gap between the market price and what under previous law might have been the target price.¹⁴ In short, farmers' exposure to market risk and market opportunity were both increased.

One impetus for this change in income support policy was budgetary pressure. Congress was still struggling in the mid-1990s to balance the budget, and cuts in farm support programs were considered inevitable to accomplish that purpose. Indeed, many proponents of reform advocated eliminating income supports altogether, in part to save money. From the perspective of farmers, the Freedom to Farm Act was a way to secure a predictable level of payments for seven years rather than run the risk of losing out in a budget battle.

From the perspective of long-term reform in agricultural and environmental policy, the important contribution of the Freedom to Farm Act is that, by decoupling income support payments and planting decisions, it provides policymakers an opportunity to devise policies that link government financial assistance for farmers to the achievement of other goals, including the goal of environmental sustainability.

VI. FORCES THAT WILL SUSTAIN CHANGE

The changes underway in U.S. agricultural policy have been driven largely by domestic political factors that are likely to persist in some form. Such factors include the following: ascendancy of free market political principles, budget pressures and public skepticism about subsidizing high-income farmers, and the increasing ability of urban and suburban voters to bring into the agricultural policy debate their concerns about food and water safety, as well as more general concerns about environment quality. The contest over the future of U.S. farm policy is, however, not over.

Just two years after the 1996 Freedom to Farm Act, when commodity prices fell, Congress retreated on its effort to gradually reduce direct income support and let farmers respond to market signals. With farmers in distress from low commodity prices, Congress

¹³ *See id.*

¹⁴ *See id.*

has, for the last two years, authorized "emergency" income support payments at record high levels.¹⁵ The 1996 Act also contained provisions, little noticed when enacted, that were intended to assist farmers in timing the marketing of their commodities to gain a favorable price. These provisions for nonrecourse marketing assistance loans and loan deficiency payments have turned out to be a major source of direct income support at times of low prices, thus further reflecting the struggle that persists as Congress attempts to move away from such direct intervention. The upshot is that U.S. farmers remain insulated from market signals to produce less.

As the tension between reform and the status quo lingers domestically, however, there are powerful forces operating at a global level that will reinforce the movement in U.S. agricultural policy toward increasing market orientation and greater focus on conservation and environmental concerns.

A. Market Liberalization

First, liberalization of agricultural markets by the World Trade Organization (WTO) will likely push the United States and Europe further away from price and income supports for farmers. The current Agreement on Agriculture under the WTO already requires reductions in certain trade-distorting farm subsidies, and future agreements are expected to place further limits on such subsidies.¹⁶ The U.S. is a leader in the market liberalization movement internationally and, to retain credibility in that role, will continue conforming its own farm policies to the market-opening requirements of international trade agreements. Absent a reversal, of course, by the United States in its approach to trade liberalization generally, it will be increasingly difficult in coming years to justify financial assistance to farmers that has the effect of subsidizing overproduction and low price exports of basic commodities.¹⁷

¹⁵ See RALPH M. CHITE, CONG. RESEARCH SERV.: EMERGENCY FARM ASSISTANCE IN THE FY2000 AGRIC. APPROPRIATIONS ACT (P.L. 106-78), Report RS20389 (1999); RALPH M. CHITE, EMERGENCY AGRIC. PROVISIONS IN THE FY1999 OMNIBUS APPROPRIATIONS ACT (P.L. 105-277), Report 98-952 (1998); RALPH M. CHITE, EMERGENCY FARM ASSISTANCE IN FY2000 APPROPRIATIONS ACTS, Report RS20416 (1999); RALPH M. CHITE, EMERGENCY FUNDING FOR AGRIC.: A BRIEF HISTORY OF CONG. ACTION, 1988-JUNE 1999, Report RS20269 (1999).

¹⁶ See COMM. ON AGRIC., WORLD TRADE ORG., PROPOSAL FOR COMPREHENSIVE LONG-TERM AGRIC. TRADE REFORM: SUBMISSION FROM THE U.S. (2000), http://www.wto.org/english/tratop_e/agric_e/negoti_e.htm.

¹⁷ The trade liberalization policies pursued under the auspices of the WTO have raised concerns about the impact of free trade on environment, worker welfare, and other important

B. Food Security and Developing World Agriculture

Second, there is building pressure in the international community to address poverty and hunger in developing countries and an increasing realization that this requires substantial improvement in the productivity and economic success of agriculture in these countries. The United States and Europe have joined in the commitment made in 1996 by most of the world's nations, under the auspices of the Food and Agriculture Organization of the United Nations, to cut undernourishment in half by 2015.⁴⁸ To be credible in this commitment, the U.S. and Europe will have to continue to steer away from subsidies that undercut agriculture in developing countries and toward policies that are more supportive of developing world agriculture.

Food aid from the United States and Europe can be essential to save lives in emergencies, but local food availability on a consistent basis and increased income are keys to food security in the poor countries of Africa and other developing regions. In developing countries, where as many as 80-90% of the population are directly dependent on agriculture for their food and livelihood, the success of agriculture is essential to the success of the economy and to food security. To be successful, however, developing country agricultural systems require investment at the farm level and in the relevant physical and social infrastructure (such as transportation, legal systems, and market mechanisms). This requires a market environment that provides farmers a fair opportunity to earn a return. A market environment in which the prices of basic commodities are artificially depressed by subsidized overproduction and exports from western industrialized countries is not such an environment.

C. Agricultural Sustainability and Long-Term Food Security

Third, there is an emerging realization that agricultural systems in both developed and developing countries face challenges to achieve long-term sustainability and food security, especially in light of growing populations.⁴⁹ The challenges vary geographically, but they

social values, especially in developing countries. As discussed below, these values need to be taken into account in crafting any viable vision of the future.

⁴⁸ The FAO estimates that 800 million people are undernourished and many more are food insecure to some extent, meaning they do not always have physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life. See *World Food Summit*, *supra* note 1, at 19. See also P. COLLOMB & J. DU GUERNY, FOOD REQUIREMENTS & POPULATION GROWTH in *World Food Summit*, *supra* note 1, at Technical Background Doc. 4.

⁴⁹ See GORDON CONWAY, THE DOUBLY GREEN REVOLUTION (1997).

include conserving and improving soil, making more efficient use of water, and protecting biological diversity. In the United States, this realization manifests itself in shifts toward integrated pest management, more sophisticated irrigation strategies, and organic agriculture – all techniques for reducing the use of energy-intensive, resource-consuming, off-farm inputs, and reducing the environmental footprint of agriculture.⁵⁰ To foster this trend, there is growing interest in the concept of “green payments” as a policy tool for encouraging more sustainable practices.⁵¹ Already, sustainable agriculture is more than a policy buzzword. It is an emerging practice that responds to both economic and public realities facing farmers and that, if nurtured and incentivized, could gradually transform agriculture.

In developing countries, agricultural sustainability has an even more acute importance. Soil erosion, poor soil quality, and poor management of water and land resources are, in some locations, serious obstacles to increasing agricultural productivity, and in extreme cases, to meeting the basic food needs of today. The Green Revolution of the 1960s – which brought improved seeds, fertilizer, chemical pest control, and irrigation to bear in developing countries – brought enormous productivity gains to agriculture and contributed to both food security and economic growth, especially in Asia and Latin America. These gains, which did not reach most of Africa, are tapering off; in addition, the environmental costs of the first green revolution are now recognized. Meeting the long-term food needs of a global population that is growing by eighty million annually will require a Doubly Green Revolution, one that emphasizes both productivity gains and conservation.⁵²

⁵⁰ See ALTERNATIVE FARMING SYSTEMS INFO. CENTER, U.S. DEPT OF AGRIC., SUSTAINABLE AGRIC.: DEFINITIONS & TERMS (1999), http://www.nal.usda.gov/afsic/AFSIC_pubs/srb9902.htm; WILFRID LEGG, ORG. FOR ECON. CO-OPERATION AND DEV., SUSTAINABLE AGRIC.: AN ECON. PERSPECTIVE (2000), <http://www.oecd.org/agr/News/index8.htm>; Dennis Keeney, *Sustainable Agric.: Definition and Concepts*, 3(3) J. PROD. AGRIC. 281 (1990).

⁵¹ HENRY A. WALLACE INST. FOR ALTERNATIVE AGRIC., DESIGNING GREEN SUPPORT PROGRAMS (Sarah Lynch ed.) (1994); Ralph Heinlich, “Green Payments” as a Policy Option, AGRIC. OUTLOOK (June 1995).

⁵² See CONWAY, *supra* note 49. Achieving such a doubly green revolution will require, among other things, a greatly increased investment in agricultural and environmental research to devise locally appropriate solutions, especially to meet the diverse needs of developing countries.

D. *Where Are We Going and Why?*

As political pressure continues to liberalize markets, address food security globally, and improve agricultural sustainability, where is U.S. agricultural policy going? What will drive the continued convergence of agricultural and environmental policy in the United States? In this author's view, the answer is grounded in the United States' practical political imperative to provide financial assistance to farmers. Even as we move away from direct income assistance and market-distorting efforts to manage prices and supplies, politicians will continue responding to farmers' demands for assistance. Public dollars will continue to be invested in agriculture and paid to farmers, but for what purpose? As the policy and political reasons discussed earlier indicate, a likely and constructive purpose would be to protect the environment and induce more sustainable farming practices.

This shift has already begun at a policy level, but if the public dollars now spent on direct income support were used to develop, promote, and reward more environmentally sustainable farming practices, the merger of agricultural and environmental policy would become a reality.⁵³ Farmers' incomes would be helped, not just as an end in itself, but also as a means of achieving a U.S. agricultural system that is economically successful, environmentally sustainable, and a positive contributor to the success of the global food system.

VII. TOWARD A NEW VISION FOR AGRICULTURE: QUESTIONS WORTH ASKING

The recent policy trends described in this essay have occurred in reaction to a complex set of changed circumstances. They have not occurred in furtherance of any coherent, shared vision of agriculture's future and the role of public policy in implementing that vision. It is one thing to aspire toward a system of agriculture that is economically successful, environmentally sustainable, and a positive contributor to the success of the global food system. It is quite another to reduce such generalities to practical policies and programs. It is unrealistic to expect unanimity on something as inherently contentious as the future of agriculture and agricultural policy. Nevertheless, asking the right questions about a vision for the future can help illuminate the path and define the issues that need to be studied and debated in coming years.

⁵³ Even with such a shift in resources, much creative work would be required to implement an agricultural policy that had environmental sustainability as its driving consideration. See R.E. Heimlich & R. Claassen, *Agricultural Policy at a Crossroads*, 27 AGRIC. & RESOURCE ECON. REV. 95, 95-107 (1998).

The following are some of those questions:

A. What is economic success for agriculture?

From society's perspective, the core economic function of agriculture is to produce the food crops and other goods people need at a price they can afford. On this view, agriculture is economically successful if it does that consistently and affordably. On the other hand, from the producers' perspective, economic success is measured with reference to producers' survival and income. What is economic success for purposes of public policy? What is the public interest in the number and size of farms or the degree of economic concentration in agricultural production? What is the public interest in the level of farm income? What contribution can and should agriculture make to the social and economic well-being of rural communities? What other social or economic goods does society want from agriculture, such as preservation of landscape and wildlife habitat?

B. What is society's duty to farmers?

Family farms have been under economic pressure for many years, and the transition to more market-oriented policies and freer trade is increasing the pressure. What is the nature of the public interest in keeping family farms in business? Is there a public interest in insulating family farms from the risks of the market or keeping in business operations that are not viable in a competitive market? What is the right "social safety net" for farmers compared to the social safety net society provides other citizens? What is fair to expect of farmers in return?

C. What do we really mean by environmental sustainability?

In broad terms, agriculture can be said to be environmentally sustainable if it effectively minimizes negative impacts on health and environment and conserves natural resources so that future generations can produce the food they will need. This formulation is not meaningful for policy purposes, however, in the absence of a more specific definition of the goals and the development of practical tools for measuring and monitoring progress. What are the operational elements of a "sustainable" agricultural system? What is a sustainable rate of soil erosion? Level of water use? Input of chemical fertilizer and pest control agents? Ratio of energy input to energy output in crop production? Development of resistance in agricultural pests?

How do we measure performance and progress on these or other specific parameters of sustainability? Is "sustainable agriculture" a journey or a destination? How do we build into the public policy regime a recognition of geographic and temporal variability in conditions affecting the sustainability of an agricultural operation? What is the relationship between farm size and sustainability and how should public policy take that into account?

D. Who is responsible for the environmental sustainability of agriculture?

Farmers and society-at-large share an interest in ensuring the sustainability of agriculture, though their time frames differ. Farmers need to know they will be able to produce a competitive, profitable crop next year and the year after. All citizens, however, have an interest in whether agriculture will be able to meet the needs of their children and grandchildren. Long-term sustainability is thus, without question, a public good. Who is responsible for achieving it? In a competitive market for agricultural goods, there is constant pressure on farmers to reduce the cost of production and little or no economic incentive to make investments that do not provide a clearly foreseeable return. Farmers will readily reduce the use of chemical inputs if that will improve profit margins. They have less economic incentive to reduce inputs in the name of long-term "sustainability," especially on matters that are unlikely to have a direct effect on their farm's future productivity, such as preservation of wildlife habitat. Who should bear the costs of which aspects of agricultural sustainability? To what extent should they be imposed on farmers through regulation? To what extent should the costs be borne by the public through economic incentives or subsidies to farmers or other forms of public investment?

E. What is the proper role of U.S. agriculture in the global food system?

As a pure business enterprise operating in a free market economy, agriculture exists to produce the products the market demands, and by doing so, earns income for producers and a return on investment that justifies producers staying in business. Agriculture operates, however, in an economic environment that is heavily influenced by public policy in the form of supply and price management, income support, risk management assistance (through crop insurance), marketing and export assistance, and research and development support (through USDA research programs). These government policies and programs significantly affect the terms of trade and the economic structure for all of U.S. agribusiness, as well as the volume of U.S. exports of agricultural commodities. They thus affect global agricultural markets

and farmers in other countries. What impact does the economic structure of U.S. agribusiness have on the functioning of the global food system? What is the public's interest and proper role in overseeing private decisions that affect the structure of agribusiness (e.g., the degree of concentration at various stages of the food production chain)? What impact do U.S. government programs have on the global food system, including agricultural development in other countries? What is the U.S.'s interest and what is the proper role and responsibility of the U.S. in relation to those markets and farmers? Should the goal of U.S. policy be to promote the prosperity of U.S. agriculture by maintaining a high level of agricultural exports? To create a level playing field on which U.S. farmers can compete in world markets? To encourage the success of food systems in less developed countries?

F. What is the proper U.S. role in achieving global food security?

The United States is committed to the World Food Summit goal of cutting the number of undernourished people in the world in half by 2015. In pursuit of this goal, should the U.S. see itself primarily as a source of exports and food aid or as a partner with developing countries in building sustainable, local food systems? How should the U.S. balance the interests of American farmers in expanding exports with the interests of developing world farmers in expanding their own production? Under what circumstances should the U.S. provide food aid? Export credit assistance? Under what circumstances should the U.S. invest directly in the development of agriculture overseas?

G. What should be the priority drivers of U.S. agricultural policy?

Implicit in all of the preceding questions is the need to make choices among goals, interests, and values that, to some extent, compete with each other, and in every case, compete for scarce resources. Given the way our pluralistic democracy works, we can be assured that, in the end, the agricultural policy of the United States will encompass and attempt to balance many goals, interests, and values. Ideally, however, it will be developed not solely in reaction to shifting political and interest group pressures but on the basis of some common understanding of the goals, values, and priorities that should shape policy – in short, on a vision for the future.

For example, if global food security and long-term environmental sustainability were the overriding goals of U.S. policy, specific policies and programs could be developed, and budget resources allocated on that basis. Policies intended to affect the size, number, and income of

farm operations, for example, would be developed and justified as means to the end of food security and sustainability. It would still be necessary to make difficult choices and balance competing interests, but the choices could be debated and made with reference to the clearly articulated goals of food security and sustainability.

On the other hand, if the overriding goals of U.S. agricultural policy were to maintain a diversified U.S. production base, promote the economic welfare of American farmers, and preserve family farms, a different frame of reference and a different set of policy choices and justifications would result.

Of course, neither of these hypothetical alternatives captures all of the goals and values (and potential for positive contributions) that arguably should be part of a vision for the future of U.S. agriculture and agricultural policy. What roles can and should agriculture play in reducing the "greenhouse effect" and the threat of global warming (through carbon sequestration or emission reductions)? In helping society shift toward greater reliance on renewable energy sources (through harnessing of biomass)? In improving human nutrition and health (by producing nutritionally-improved crops and "nutraceuticals")?

VIII. CONCLUSION

The global food system is charging rapidly into a future that has the potential to change just about everything, including the basics of who is producing what, for whom, and in response to what set of economic incentives and social expectations. The United States, with the most innovative and productive agricultural economy in the world, will continue to play a central role. But what will that role be? What is the vision for the future? These questions are of vital importance not only to people who work in agriculture but to the public at large. By addressing them thoughtfully, in a way that respects the full range of American values and interests, the United States can take care of its own food needs in an environmentally and socially sustainable way and help build a global food system that provides sustainable food security for all.