Environmental Analysis of the Federal Farm Program

by

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ENVIRONMENTAL ANALYSIS OF THE FEDERAL FARM PROGRAMS

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> Most farmers are forced by economics to discount the future very heavily. Income in the current year is far more important to the individual farmer than income 20 years in the future. . . . Society should have a long planning horizon. The public has a responsibility to future generations to maintain the productive capacity of the soil.[1]

After nearly twenty years of regulating environmental pollution in the United States, there is credible evidence that the quality of the environment, as measured by the usual technical criteria, is deteriorating rather than improving.[2] As Congress and federal agencies reconsider our environmental quality strategy, there will inevitably be much debate over how to deal with two water quality issues which are currently excluded from comprehensive regulation: groundwater[3] and surface-water contamination from nonpoint sources.

For at least the last eighty years, nonpoint sources of surface water pollution have been recognized as a major source of water pollution in many parts of the United States.[4] The domestic agricultural industry is a principal source of nonpoint pollutants. Twenty-seven states have explicitly recognized agriculture as the primary cause of nonpoint source problems on rivers, and twenty-four states have found agriculture to be the largest nonpoint source polluting lakes.[5] More specifically, this cause of nonpoint pollution accounts for 64% of the pollution on all impacted river miles, and 57% of the pollution from nonpoint sources on impacted lake

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[1] Schrader, Effect of Erosion and Other Physical Processes on Productivity on U.S. Croplands and Rangelands 1 (unpublished manuscript).

[2] Commoner, *Failure of the Environmental Effort*, 18 Envtl. L. Rep. (Envtl. L. Inst.) 10195 (June 1988); Pedersen, *Turning the Tide on Water Quality*, 15 Ecology L.Q. 69 n.4 (1988).

[3] *See, e.g.*, Myers, *Groundwater Issues Emerge as Focus of FIFRA Reform*, 5 Agric. L. Update 4 (1988).

[4] Williams, *Soil Conservation and Water Pollution Control: The Muddy Record of the United States Department of Agriculture*, 7 B.C. Envtl. Aff. L. Rev. 365, 366 (1979). *See also* V. Novotny & G. Chesters, Handbook of Non-Point Pollution (1981).

[5] C. Meyers, A. Tarlock, J. Corbridge & D. Getches, Water Resources Management: A Casebook in Law and Public Policy 320 (2d ed. 1988).

acres.[6]

Nonpoint sources of pollution are estimated to be responsible for as much as 73% of the total biochemical-oxygen-demand loadings, 99% of the suspended solids, 83% of the dissolved solids, 88% of the nitrogen, 84% of the phosphorus, and 98% of the bacteria loads in United States waterways today.[7] Soil erosion is undoubtedly the major nonpoint source of pollution, and most soil erosion can now be traced to agricultural practices.[8] Soil erosion and nonpoint source pollution are the same issue.

It has been estimated that annual soil loss in the United States exceeds six billion tons, with 20% of the loss attributable to wind erosion and the balance caused by various forms of water erosion.[9] Most of this soil loss comes from agricultural lands.[10] Erosion is not uniform across the country, however. On 66% of the nation's 413 million acres of cropland, erosion averages less then five tons per acre per year. On another 22% of the cropped acreage, soil loss ranges from five to fourteen tons per acre per year. On the remaining 12% of cropland, annual soil loss exceeds fourteen tons per acre.[11] An annual loss of five tons per acre translates into the loss of an inch of topsoil every thirty years.[12] Unfortunately, much of the nation's most productive cropland is highly erodible.[13]

Nonpoint source pollution from agriculture also contributes to the nation's groundwater pollution problem. Nitrates attributable to commercial fertilizers have been found in groundwater in every agricultural region of the United States.[14] California, which uses

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[6] Ass'n of State and Interstate Water Pollution Control Admin., America's Clean Water: The States' Nonpoint Source Assessment 1985 7-8 (1985). It is worth noting that sediment in surface water costs the nation $4 billion to $16 billion annually. Crosson & Ostrov, *Alternative Agriculture: Sorting Out Its Environmental Benefits*, Resources for the Future, Summer 1988, at 15.

[7] E. Clark, J. Haverkamp & W. Chapman, Eroding Soils: The Off-Farm Impacts 8 (1985) [hereinafter Eroding Soils].

[8] *Id.* at xiii, 3.

[9] *Id.* at xiii, 2.

[10] *Id.* at 3. *See also* R. Beasley, J. Gregory, & T. McCarty, Erosion and Sediment Pollution Control 3 (2d ed. 1984); Arts & Church, *Soil Erosion: The Next Crisis?*, 1982 Wis. L. Rev. 535, 542. The EPA's 1986 report to Congress states that "[b]y far the most common nonpoint source reported by the States in 1986 is agricultural runoff." Office of Water, Envtl. Protection Agency, National Water Quality Inventory: 1986 Report to Congress 80 (1987). *See generally* Smith, Alexander & Wolman, *Water-Quality Trends in the Nation's Rivers*, 235 Science 1607, 1611-12 (1987).

[11] *See* Eroding Soils, *supra* note 7, at 5.

[12] *Id.*

[13] Arts & Church, *supra* note 10, at 538-39.

[14] *See* Hallberg, *From Hoes to Herbicide: Agriculture and Groundwater Quality*, 41 J.

more groundwater than any other state, has also reported significant increases[15] and Iowa, the second largest consumer of nitrogen fertilizer, has concluded that nitrates in groundwater is a pervasive problem.[16] In the southeastern portion of Minnesota, it is reported that nearly one quarter of the population drinks water that does not meet the relevant drinking water standards for nitrates.[17]

While pesticides are not as prevalent as nitrogen in groundwater, it is clear that they are reaching groundwater in increasing amounts.[18] Monitoring reports have found pesticides from routine agricultural use in a growing number of states, including New York, Wisconsin, Florida, Nebraska, Pennsylvania, South Dakota, Maryland, Ohio, and California.[19] A recent Minnesota study sampled over 500 wells in an agricultural region where groundwater was known to be susceptible to contamination. The study found fourteen compounds present, eleven herbicides and three insecticides, and detected one or more pesticides in 38% of the wells sampled. The report concluded that, although concentrations were low, the frequency of positive findings and the number of compounds detected were "higher than anticipated."[20] Similarly, geologists in Iowa recently reported that regular findings of pesticides in susceptible aquifers is a "state wide" phenomenon.[21]

In order to demonstrate that we have learned how to control nonpoint source pollution from agricultural practices, section I of this article details the soil conservation policies of the 1930s fol-

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Soil & Water Conservation 356 (1986); Hallberg, Overview of Agricultural Chemicals in Ground Water (paper presented at the conference on Agricultural Impacts on Groundwater, Omaha, Neb. (Aug. 11-13, 1986)). *See generally* R. Patrick, E. Ford & J. Quarles, Groundwater Contamination in the United States (2d ed. 1987).

[15] P. Holden, Pesticides and Groundwater Quality: Issues and Problems in Four States 14 (1986).

[16] Interview with George R. Hallberg, Chief, Geological Studies, Iowa Geological Survey Bureau, in Iowa City, Iowa (June 17, 1987).

[17] Minn. Dep't of Health & Minn. Dep't of Agric., Minnesota Pesticide Monitoring Surveys: Interim Report (paper presented at the conference, "Pesticides and Groundwater: A Health Concern for the Midwest," in St. Paul, Minn. (Oct. 16, 1986)) [hereinafter Pesticide Monitoring].

[18] This is true because "pesticides are a key component of conventional agriculture. To the extent that pesticides pose environmental problems, conventional agriculture is the culprit." Crosson & Ostrov, *supra* note 6, at 13.

[19] Nielsen & Lee, *The Magnitude and Costs of Groundwater Contamination from Agricultural Chemicals: A National Perspective*, in Economic Research Services, U.S. Dep't of Agric., Agricultural Economic Rep. No. 576 1 (1987).

[20] *See* Pesticide Monitoring, *supra* note 17, at 8.

[21] *See* Hallberg, *From Hoes to Herbicide: Agriculture and Groundwater Quality*, *supra* note 14; Hallberg, Overview of Agricultural Chemicals in Groundwater, *supra* note 14.

lowing the Dust Bowl. Section II briefly sketches the major federal farm price support programs, and section III highlights the adverse environmental effects of these current farm policies. Finally, in section IV, recommendations are made as to how nonpoint source pollution from agricultural practices can be curtailed.

I. American Agriculture's First Environmental Crisis and the Lessons Learned

Despite the work of an energetic conservation movement and the growth of the land grant college system in this country, soil conservation was largely neglected as a public policy goal up to the 1930s.[22] This was so despite continuing recognition of the threat which soil erosion posed to our soils and waterways. Near the turn of the century sedimentation was identified as the major source of water pollution[23] and soil erosion was seen as a principal cause. No action was taken, however, until the occurrence of the great environmental crisis now known as the Dust Bowl. In the midst of a general economic depression, persistent drought conditions struck the Great Plains. The black blizzards, denuded fields, choked waterways, and demoralized human communities associated with this epic are written into the national history and need not be recounted here. What is important is that the nation turned to organized soil erosion control as a remedy.[24] In retrospect, while it cannot be said that these remedial efforts solved the soil erosion problem, this experiment most certainly taught us *how* to solve it.

Out of the 1930's experience there emerged a soil conservation establishment which has now evolved and developed into the Soil Conservation Service (SCS) in the United States Department of Agriculture (USDA). In its early days the SCS was energetic and innovative. The procedures and methods which it developed for dealing with Dust Bowl conditions now represent important advances in our understanding of how to address the soil erosion problem and, as a result, the problem of nonpoint source water pollution.

The 1930's effort began with research, including the development of basic measurement methodologies and the initiation of a system of surveys which identified the more critical erosion

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[22] R. Held & M. Clawson, Soil Conservation in Perspective 38-41 (1965).

[23] *See* Williams, *supra* note 4, at 365-66.

[24] Batie, *Policies, Institutions, and Incentives for Soil Conservation*, in Soil Conservation Policies, Institutions and Incentives 25-29 (H. Halcrow, E. Heady & M. Cotner eds. 1982).

problems.[25] The first major technique employed as an early form of erosion control was terracing. Although not a universal cure, it does remain one of the best tools against soil erosion.[26] Terraces are ledges of varying sizes constructed in the side of hills to capture water that would otherwise run downhill with sufficient force to carry away soil and nutrients.

Scientists also attempted to persuade farmers to cultivate their fields in a manner that deterred erosion and pollution. Cultivation of fields on the contour, like terracing, deters runoff and retains water, soil, and other nutrients on the hillside. In perhaps the most important soil conservation practice—crop rotation—farmers divide their farms into several acreages and alternate various crops among different plots from year to year. The greatest advantage of crop rotation is that it substantially reduces the need for pesticides and fertilizers by moving different crops from field to field. This practice prevents insect populations from accumulating around host crops, and it displaces weeds by following row crops with grasses, small grains, or pasture. Crops such as alfalfa and soybeans which add nitrogen to the soil may be rotated after nitrogen-depleting crops such as corn and cotton, thus reintroducing nitrogen to the fields without the need for extensive artificial fertilizer. These methods of cultivation proved very beneficial in the campaign to conserve soil and water.

Other innovations of the '30s and '40s included the use of grass waterways, that is, the seeding of low ground to stable grasses in order to better control flow of surface water. Farmers were also encouraged to convert more land to pasture use, particularly in fields where the soils were unstable or in need of rebuilding. The use of stubble mulch helped to reduce rill erosion. The development of tree nurseries allowed farmers to plant wind breaks (shelter belts) in order to protect soils from wind erosion and to conserve water on higher ground. Researchers developed new species of soil conserving crops and advocated the reintroduction of native species.[27]

Policy makers also recognized that the cooperation of private landowners was critical and, accordingly, sought out methods for gaining public acceptance of these soil conservation techniques. Many farmers received considerable financial assistance and other

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[25] Held & Clawson, *supra* note 22, at 60-61.

[26] *Id.* at 64.

[27] *Id.* at 64-66.

incentives were also available to promote government programs. The concept of the soil conservation special district was advocated in order to organize landowners and to develop common solutions to erosion problems. The "whole farm conservation plan"—an integrated plan of soil erosion control practices for an entire farming operation—was developed and complemented by the detailed soil capability classification. These same basic techniques were equally applicable to rangeland and, through the Taylor Grazing Act of 1934,[28] Congress moved to protect the public range as well.

These soil conservation measures were generally successful where they were used, but the program ultimately failed because it was not universally adopted. Possible explanations for this failure include the agricultural prosperity which followed the end of the drought, the post-war consolidation of agricultural land holdings, and the general economic growth associated with the conclusion of a war. It has also been argued, however, and with some considerable proof, that the primary reason for agriculture's general abandonment of soil conservation practices is that the lead federal agency, the SCS, shifted its emphasis from soil erosion control to production enhancement and land management practices. As Held and Clawson conclude:

> Gradually during the general period 1935 to 1950, and to some extent subconsciously, the emphasis of the whole group of soil conservationists, in both public and private programs, shifted from the control of soil erosion to the management of the land for greater productivity. This was in many respects a natural evolution, yet it greatly changed the basic purpose of the soil programs, especially when viewed from a national or social point of view.[29]

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[28] 43 U.S.C. §§ 315-315r (1982 & Supp. IV 1986).

[29] Held & Clawson, *supra* note 22, at 69-70. A good example of financing production enhancement in the name of conservation is the following:

> The ASCS will pay 50 to 75 percent of a livestock owner's cost of restoring a water source, or digging a new well, when the drought has destroyed his regular source.
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> Or, the federal money will pay part of the costs when a rancher needs a new well to open a new pasture.
>
> The funds, however, hang on the conservation limb of the ASCS money tree. They come from the Agricultural Conservation Program and Emergency Conservation Program. That means you must squeeze a soil conservation justification into your water project before you get ASCS assistance.
>
> In most cases, the justification is that digging a new well, or restoring a spring or spring-fed pond, will permit a pasture to be used. You need a water source to use a pasture. Opening the new pasture prevents overgrazing a pasture that already has a water source, so the new well reduces erosion on the pasture that is already being grazed. Simply drilling or restoring a well on a farmstead doesn't make the grade.

By shifting its emphasis to land management and production techniques, the SCS encouraged farmers to abandon crop rotation and the other major soil conservation techniques. While millions, or perhaps billions, of dollars were being spent to support land management and production enhancement practices under the name of soil conservation, the lessons of the first agricultural crisis were forgotten.

This brief history suggests that, if we are to regulate agriculture's effects on the environment, we must consider whether and to what extent our current farm price and income support programs encourage or discourage farmers from applying soil erosion control methods.

Currently, within the USDA, twenty-seven separate conservation programs are administered by eight separate agencies.[30] The two major agencies within the USDA that have substantial soil erosion responsibilities are the SCS and the Agricultural Stabilization and Conservation Services (ASCS). For the most part, the federal programs have been limited to conservation incentives in the form of technical assistance and cost sharing.[31] Nonetheless, the fact is that we know how to control soil erosion and pollution from agricultural lands; the lessons have been learned. The only question is whether it is now possible to get farmers to do what needs to be done.

II. An Overview of the Farm Price-Support Program

The federal farm programs are of three types: (1) price support, (2) income support, and (3) supply management or control.[32] It is worthwhile to list and briefly describe the more important ones.[33] Although program details vary from commodity to commodity,

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ASCS does not find sufficient conservation purpose in home or farmyard water projects.

Government Can Be Tapped for Stock Water Problems, Agweek, Sept. 19, 1988, at 24, col. 1.

[30] K. Meyer, D. Pedersen, N. Thorson & J. Davidson, Agricultural Law: Cases and Materials 776 (1985); Held & Clawson, *supra* note 22, at 86-88.

[31] Williams, *supra* note 4, at 379-381.

[32] Devine, *Understanding the Current Crisis With the ASCS*, 9 J. Agric. Tax & L. 195, 196 (1987).

[33] For a more detailed description of current federal farm programs see N. Harl, 11 Agricultural Law, chapters 90-92 (Supp. 1988); Pickard, *Price and Income Adjustment Programs*, in 1 Agricultural Law §§ 1.01-1.25 (J. Davidson ed. 1981 & Supp. 1987). The standard history of the early farm programs is M. Benedict, Farm Policies of the United States 1790-1950 (1953 & reprint ed. 1975).

there is a finite number of devices which are used to support farm prices and income.

A. Price Support Through Purchases

Whenever the price of a commodity drops below a particular level, the federal government intervenes to support prices by making purchases through its Commodity Credit Corporation (CCC).[34] At present these government purchases are an essential part of support programs for milk[35] and honey.[36]

B. Price Support Loan Levels

The CCC also purchases crops indirectly by making nonrecourse loans to farmers whenever the commodity price falls below an established loan rate. The loan rate then operates as a floor on market prices. Nonrecourse loans are currently authorized for wheat, rice, peanuts, cotton, feed grains, and soybeans.[37]

A farmer is able to borrow from the CCC using his crop as collateral. The nonrecourse loan rate defines the amount of the loan. If the commodity market prices go above the loan rate the farmer can sell on the market and repay the CCC with interest. If the price is below the loan rate when the farmer needs to sell, the farmer simply forfeits the collateral crop to the government and the loan is cancelled in full.[38] Grain forfeited under CCC loan programs is the major source of government stocks of farm commodities.

C. Target Prices and Deficiency Payments

Congress introduced the concept of target prices in 1973.[39] Once a target price is set, it is intended to serve as a goal of the farm programs. If market prices fail to rise to the level of the target price, farmers who are participating in the program receive deficiency payments equal to the difference between the target price and the market price. The maximum deficiency payment is equal

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[34] 15 U.S.C. §§ 714-714p (1982 & Supp. IV 1986).

[35] 7 U.S.C. § 1446(c)-(d) (1982 & Supp. IV 1986).

[36] *Id.* § 1446(b) (1982 & Supp. IV 1986).

[37] 7 U.S.C. §§ 1445b-3 (wheat); 1441-1 (rice); 1445c-2 (peanuts); 1444-1 (upland cotton); 1445e (wheat and feed grains); 1446(g)(1) (soybeans) (1982 & Supp. IV 1986).

[38] *See, e.g.*, 7 U.S.C. § 1425 (1982 & Supp. IV 1986).

[39] Agriculture and Consumer Protection Act of 1973, Pub. L. No. 93-86, 87 Stat. 221 (1973) (codified at 7 U.S.C. § 612c (1982 & Supp. IV 1986)).

to the difference between the target prices and the loan rate since the loan rate sets an effective floor on the market price. Target prices are used for feed grains, wheat, and upland cotton.[40]

D. Set-Asides and Acreage Limitations

The Secretary of Agriculture (Secretary) may require farmers to participate in either a set-aside[41] or acreage limitation[42] of certain cropland as a condition for participation in farm programs, including nonrecourse loans, purchases, and deficiency payments. The set aside and acreage limitation programs are different in that the former focuses on overall farm production whereas the acreage limitation program focuses on specific commodities. However, both programs limit the number of acres that a farmer can plant in a given year.

E. Diversion Payments

Diversion payments are cash payments made to farmers who agree to divert to conservation uses a percentage of cropland in addition to set aside or acreage limitation requirements.[43] Land diversion payments are structured as contracts between the producer and the government. One popular form of diversion payments is the conservation reserve program which pays farmers to set aside highly erodible land for ten years.[44]

F. Marketing Loans

In 1985 a new provision for the repayment of nonrecourse loans was added which applies to wheat, feed grains, upland cotton, and rice. Known generally as marketing loans, they allow for redemption of loans at levels below domestic or world prices, that is, at less than the original amount of principal borrowed.[45] Their purpose is to permit domestic market prices to seek lower levels, thus

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[40] *E.g.*, 7 U.S.C. § 1445b-3 (1982 & Supp. IV 1986).

[41] *See, e.g., id.* §§ 1445b-1(e)(1), (3) (wheat); 1444d(e)(1), (3) (corn and other feedgrains) (1982 & Supp. IV 1986).

[42] *See, e.g., id.* §§ 1441(i)(5)(A) (rice); 1444(g)(9)(A) (upland cotton); 1444d(e)(1)-(2) (corn and other feed grains); 1445b-1(e)(1)-(2) (wheat) (1982 & Supp. IV 1986).

[43] *See, e.g., id.* §§ 1441(i)(5)(B) (rice); 1444(g)(9)(B) (upland cotton); 1444(h)(8)(B) (extra long staple cotton); 1444e(f)(5) (feedgrains) (1982 & Supp. IV 1986).

[44] 16 U.S.C. §§ 3811-36 (Supp. IV 1986). *See infra* notes 122-126 and accompanying text.

[45] 7 U.S.C. §§ 1445b-3(a) (wheat); 1444d(a) (feed grains); 1444-1(a)(5) (upland cotton); 1441(i) (rice) (1982 & Supp. IV 1986).

making these commodities available for export at more competitive prices, while compensating farmers for losses caused by the drop in domestic prices.

G. Quotas

National marketing quotas may be established by the Secretary for specific commodities.[46] Quotas must first be approved by referendum of all farmers who produce the commodity.[47] Quota acreage is then apportioned among the states and individual farmers, primarily on the basis of historical production. Producers who plant in excess of the allotment are subject to statutory penalties.[48]

H. Payment In Kind Programs

The Secretary has legislative authority to supplement existing acreage reduction programs for wheat, corn, sorghum, rice, and upland cotton.[49] The Payment In Kind Program is open to farmers who participate in existing acreage reduction programs and offers farmers who divert additional acres from production payment in kind of the crop that would normally be produced on the diverted acres. The primary goal of the Payment In Kind program is to lower existing government stocks of a commodity, and to limit its further production, without expending any government funds.

I. Farmer Owned Reserve

The Farmer Owned Reserve program authorizes low-interest three-year loans and storage payments to farmers who agree to construct storage facilities and store their grain for a three-year period.[50] Producers may not redeem their grain from storage prior to the end of the term unless market prices exceed a trigger price that is established by the Secretary.[51] Once the market price exceeds the trigger price, the government begins to charge interest on the loan and no longer makes storage payments, giving the farmer the incentive to redeem the grain. If the price of the grain reaches

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[46] *See, e.g., id.* § 1332 (1982 & Supp. IV 1986) (wheat).

[47] *Id.* § 1336 (1982 & Supp. IV 1986).

[48] *Id.* § 1339(a)(1) (Supp. IV 1986).

[49] *Id.* §§ 1445b-1 (wheat); 1444b (corn and sorghum); 1441 (rice); 1444 (cotton) (1982 & Supp. IV 1986).

[50] *Id.* § 1445e (1982 & Supp. IV 1986).

[51] *Id.* § 1445e(b).

a call level the farmer must redeem the commodity.[52]

J. Indemnity Payment Programs

Indemnity payments are made to dairy farmers and bee keepers who suffer losses, either because of contamination by pesticides in the case of dairy payments, or destruction of bees by pesticides in the case of bee keeper payments.[53] Indemnity payments are available only if the farmer has no other legal recourse to recover his losses.[54]

K. Emergency Programs

If a livestock producer suffers the loss of a feed supply due to natural disasters, the CCC is authorized to sell grain to the producer at a loan rate or pay a portion of the cost of that feed purchased under emergency circumstances.[55] This is one of the few programs that aids livestock producers.

L. Crop Insurance

The Federal Crop Insurance Act of 1980[56] expanded crop insurance coverage to virtually all major crops in the United States. Crop insurance protects against loss from adverse weather conditions, disease, insect infestations, and similar hazards. The goal of the program is to phase out disaster payment programs altogether.

M. Import Restrictions

The President is authorized to impose import fees and quotas on agricultural products if the importation of such products will interfere with the operation of domestic agricultural programs.[57] In addition, bilateral agreements limiting the importation of meat products have been negotiated with some producing nations.

N. Export Programs

There are many programs which assist the agricultural industry

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[52] *Id.*

[53] *Id.* § 450j (1982).

[54] *Id.*

[55] *Id.* § 1427 (1982 & Supp. IV 1986).

[56] Pub. L. No. 96-365, 94 Stat. 1312 (codified in scattered sections of 7 U.S.C. (1982 & Supp. IV 1986)). Particular attention should be paid to § 1508.

[57] 7 U.S.C. § 624 (1982).

by promoting exports of agricultural commodities. The CCC may make its stocks available for export, or it may subsidize individual exporters.[58] The CCC also finances export sales of agricultural commodities from private stocks, usually on a short-term basis but sometimes for terms up to ten years.

O. Conservation Provisions

The Food Security Act of 1985[59] added several significant conservation sections to the farm program. The "Sodbuster"[60] and "Swampbuster"[61] provisions deny all price support payments, farm storage facility loans, federal crop insurance, disaster payments, and Farmers Home Administration (FHA) credit to farmers who bring wetlands or highly erodible land into production.

Highly erodible land that was in production in 1985 can retain eligibility for farm programs through 1989, but farms with highly erodible land must have a soil conservation plan by January 1, 1990, in order to continue to obtain farm commodity benefits, and must be operating in compliance with the plan by January 1, 1995.[62]

A conservation reserve program was also established which pays farmers to take highly erodible land out of production for ten years and to plant the ground with grass, trees, or shrubs.[63]

Several reasons for the existence of these far-ranging programs are traditionally offered: (1) the need to raise farm income, (2) the need to secure an adequate and inexpensive food supply for the American public, (3) the need to assure a safe food supply, and (4) the need to preserve resources for future generations.[64] Underlying these justifications is a general perception of the importance of agriculture to the United States economy. It is true that some of these objectives have been achieved with a fair degree of success. However, the factual picture drawn in this introduction suggests that, at least with respect to the maintenance of soil and water resources, the programs have not been beneficial.

There are additional problems with our farm price-support pro-

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[58] *Id.* § 1707a (1982 & Supp. IV 1986).
[59] Codified in scattered sections of 7 and 16 U.S.C. (1982 & Supp. IV 1986).
[60] 16 U.S.C. § 3812(b) (Supp. IV 1986).
[61] *Id.* § 3821 (Supp. IV 1986).
[62] *Id.* §§ 3811-12 (Supp. IV 1986).
[63] *Id.* § 3831 (Supp. IV 1986).
[64] Devine, *supra* note 32, at 195.

grams. First, the farm programs are incredibly complex. Many of the programs' details have developed through practice and custom in local ASCS offices and are now outdated. These labyrinthine rules and procedures vary for different crops and are changed from year to year. Descriptions of the various farm programs are usually cursory and unclear, if they exist at all. As a result, the complexity of these programs prevents an easy understanding of the regulations.

Second, the pervasive administrative structure that underlies the farm programs requires comment. These programs are administered by the ASCS in offices staffed by career USDA employees and located in nearly every county in the United States. Farmers who participate in one or more of the farm programs—and most do—are under the supervision of the local ASCS official and the elected local Committee. Thus, it would not be an exaggeration to say that the USDA directly supervises the farming economy in the United States, and that the price support programs serve as the leverage for this supervision. In fact, there is probably no federal regulatory or support program that is comparable in the extent to which it directly involves itself in the operation of small dispersed private enterprises. While a federal bureaucracy is usually organized from the top down and operates out of large regional centers, the Department of Agriculture has trained supervisory personnel in nearly every county seat in the nation. This USDA presence at the local level is augmented by representatives of the SCS and FHA who supervise a number of separate but closely related government farm programs. Finally, county agricultural and home extension agents are present in most counties. Although employed through the state land grant college and extension systems, these agents also implement national agricultural policy.

III. The Environmental Effects of our Current Farm Policy

It is now a broadly accepted idea, at least among conservation and environmental policy-makers, that the government should study the environmental effects of its policies before implementing them. Thus, it should seem surprising that a regulatory and resources development policy as comprehensive as the agricultural price support program should be pursued relatively free of environmental planning duties.[66]

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[66] A partial explanation may be found in the fact that environmental regulatory laws en-

The concept of public environmental planning starts with a recognition that most state and federal agencies have discrete development missions. In pursuit of their primary goals, agencies can be expected to ignore the impact which their policies have on the environment. For example, a state or federal highway department knows how to plan and build highways, and will do so effectively. Efficient highway planning, however, may begin with the premise that the shortest distance between two points is a straight highway.[66] But that premise should determine the location of the highway only if it is assumed that economic and social efficiency is to be judged solely on the basis of its utility as a highway. If the highway planner is also expected to take into account social utility factors such as minimization of harm to the environment, protection of valuable natural resources, and respect for existing communities, then the planning process is altered radically.

On the federal level, the National Environmental Policy Act (NEPA)[67] requires that federal agencies consider the environmental effect of their actions. NEPA requires integration of natural and social sciences, consideration of "presently unquantified environmental amenities and values,"[68] and preparation of an environmental impact statement which considers the environmental impact of the proposed action, alternatives to it, and "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity. . . ."[69] Thus, there is a growing consensus that the federal government ought to consider environmental consequences prior to making any decision which would commit our natural resources or which would encourage development in a manner likely to incur indirect environmental costs. It is not the purpose here to argue for the application of NEPA environmental review procedures to USDA's price and income support programs, although a convincing argument can be made that there is an enforceable obligation.[70]

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acted in the last two decades have largely exempted agricultural activities. For example, the Clean Water Act expressly exempts agriculture from its permit requirements: "The [EPA] Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the Administrator directly or indirectly, require any State to require such a permit." 33 U.S.C. § 1342(1) (1982).

[66] I. McHarg, Design with Nature 32-34 (1969).

[67] 42 U.S.C. §§ 4321-4370a (1982 & Supp. IV 1986).

[68] *Id.* § 4332(2)(B).

[69] *Id.* § 4332(2)(C)(iv).

[70] NEPA requires that an environmental impact statement accompany all "proposals for legislation or other major Federal actions significantly affecting the quality of the human

Instead, this article offers the modest proposal that the time has come to consider whether these enormous support programs are neutral, beneficial, or harmful to the environment. Such an analysis will be difficult because of the lack of current research, the complexity and diversity of the programs, and the economic reliance upon the programs that have developed in American agriculture.

A. Acreage Limitations and Deficiency Payments

One of the primary goals of current farm policy is to limit production of certain commodities in years when the Secretary anticipates overproduction. The two basic mechanisms used to achieve this goal are (1) set-asides and (2) acreage limitations. As a condition of being eligible for nonrecourse loans, purchases, and farm program payments, the Secretary is authorized to require farmers to participate in a set-aside of cropland which is normally planted to feed grains, wheat, upland cotton, or rice. A base acreage is established for each farm, based on the number of acres planted in a normal year. Farmers must then withhold production on a specified percentage of base cropland during the set-aside year. Set-asides, however, are not commodity specific; thus, while they restrict the total number of acres in production, they do not limit the acreage of specific crops. The Secretary may use set-asides only when he determines that production, absent a set-aside, would be excessive in relation to demand.[71] Typically, set-aside land must be planted to conserving uses,[72] but farmers have considerable flexibility in determining which land to set aside. Largely because of increased incidents of "slippage," Congress and the Secretary have in recent years favored acreage limitations over set-asides.[73]

Acreage limitations, established prior to planting, restrict the amount of cropland a farmer may plant to a specified crop and still remain eligible for farm program payments. An acreage limitation (or acreage reduction) is a uniform, fixed percentage of the average number of a farmer's acres planted to a particular crop over the prior five years.[74] This average, the acreage base, is then reduced

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environment." *Id.* § 4332(2)(C). If the Secretary's decisions on price and income support levels also have important environmental consequences, then a strong argument can be made that an EIS is required for such decisions.

[71] *See, e.g.*, 7 U.S.C. § 1445b-1(e)(1) (1982 & Supp. IV 1986) (wheat).

[72] *See, e.g., id.* § 1445b-1(e)(3) (1982 & Supp. IV 1986).

[73] Devine, *supra* note 32, at 201.

[74] Current acreage limitations are located in 7 U.S.C. §§ 1445b-1(e) (wheat); 1444(g) (upland cotton); 1444(i) (rice); 1444d(e) (corn and other feed grains) (1982 & Supp. IV 1986).

by the application of the reduction percentage to determine how much land a farmer must divert from production.[75] The acreage diverted from production must be planted to a designated conservation use;[76] however, this diversion does not result in a lower crop base for the next year.

The acreage base also determines the extent of federal farm program benefits available to the farmer. In years when the Secretary determines that production controls are required, (which has been most years), farmers of the regulated crop (corn, wheat, rice, or cotton) must participate in the acreage limitation in order to take advantage of federal nonrecourse loans and deficiency payments. The key to maximizing income under the acreage reduction program, then, is maintenance of a high acreage base.

Assume, for example, that a farmer expanded his farm operation in 1983 by purchasing a quarter-section of land from his neighbor and has since planted eighty acres of this new land to feed corn. Thus, in 1988, the average acreage planted to corn for the previous five years was eighty, so the farmer's corn base is eighty acres. In a year (such as 1988) when the Secretary has announced a 20% reduction in corn acreage, the farmer will be required to remove sixteen acres from corn production but can select which of the eighty acres to retire. Furthermore, it may safely be assumed that this farmer, like all others, will retire his least productive sixteen acres, such as land that is flood prone or which has depleted soils. In exchange, the farmer will receive deficiency payments for sixty-four acres and his acreage base for 1989 will still be eighty acres, despite the reduction in 1988 acreage. Thus, the amount of money that the farmer will receive from the federal farm support programs will depend, at least in part, upon his corn base.

This corn base cannot be increased by changes in land management practices or techniques. For example, if our hypothetical

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[75] The law governing the establishment and maintenance of crop acreage bases for each program crop is at *id.* § 1464 (Supp. IV 1986).

[76] The statute provides that "[t]he acreage considered planted to a program crop shall include . . .

(C) acreage in an amount equal to the differences between the permitted acreage for a program crop and the acreage planted to the crop, if the acreage considered to be planted is devoted to conservation uses or the production of commodities permitted under section 1445b-3(c)(1)(K), 1444e(c)(1)(I), 1444-1(c)(1)(G), or 1441-1(c)(1)(G) of this title, as the case may be;"

Id. § 1464(b)(2)(C).

See also Fraas, *Federal Assistance Programs for Farmers* § 9.44 in The Missouri Bar, Missouri Farm Law (Supp. 1985).

farmer plants additional land to corn or converts grassland to row crops, he will not increase his five-year acreage base. The corn base can be lowered if the farmer reduces his corn planting, however. The only way to increase an acreage base is to remove the land from the price support program altogether for a full crop year and then re-enter the program the following year.[77] The base will then be measured by the number of acres planted in corn during the year prior to re-entering the program.

What is the effect on the acreage base if the farmer breaks new ground? Obviously, if the new ground is highly erodible or a wetland, the farmer is out of the program due to violation of either the sodbuster or swampbuster program.[78] But if the new ground is suitable for row-cropping, the farmer can petition the ASCS to exercise its discretion and approve admission of the land into the program.[79] If the ASCS admits this land, the farmer is barred for two years from setting aside these new acres in order to meet the set-aside obligation under the acreage reduction program. He can, however, grow corn on the new ground as part of his subsidized sixty-four acres. After two years, the new ground is in the program, but the farmer's corn base still does not increase. It can now, however, be used to meet the set-aside obligation. Thus, the farmer does benefit from bringing the new ground into production. Although not directly increasing his corn base, the addition will allow the farmer to meet acreage reduction obligations by retiring this recently obtained land. This will, in turn, make other land available for production of non-program crops.

Our farmer will also receive a deficiency payment. The amount of this payment is determined by this corn base and by the "yield," a figure reflecting the historical bushel per acre corn production on the eighty acre corn base.[80] The Secretary may choose one of several methods for calculating the yield, and the method chosen will be critical to most farmers. One method considers the historical production on the particular acres involved.[81] That is, if our farmer in recent years has averaged 110 bushels of corn per acre, that will be his yield for purposes of calculating deficiency payments. This method inevitably encourages the farmer to inten-

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[77] 7 U.S.C. § 1464(b)(3)(B).

[78] *See supra* notes 60-61 and accompanying text.

[79] 7 U.S.C. § 1464(b)(2)(E).

[80] *Id.* § 1466 (Supp. IV 1986).

[81] *Id.* § 1466(b)(1).

sify production by fertilizing heavily, using the best seed, and planting the crops in close formation; however, the Secretary will not permit major changes (such as new irrigation) to add to the yield.[82]

Under an alternative method for calculating the yield, the Secretary, if he "determines such action is necessary," may "establish national, State, or county program payment yields on the basis of (A) historical yields, as adjusted by the Secretary to correct for abnormal factors . . . or (B) the Secretary's estimate of actual yields for the crop year involved. . . ."[83] This method eliminates the need to maintain a separate yield record for each farm and, instead, allows ASCS offices to establish estimated yields which reflect general production in a given area. Under this method, the more productive the local and regional agricultural industry, the higher the yield and the higher the deficiency payments made to individual farmers in the area.

This acreage reduction system has a number of indirect economic effects on the nation's agricultural industry. One such effect is its influence on which crop an individual farmer chooses to produce. A farmer with a high acreage base for a certain crop is likely to be more interested in preserving that base than in growing alternative crops, even when the market signals that another crop (soybeans instead of corn, for example) might bring a higher market price.[84] The acreage reduction program largely insulates the farmer from market fluctuations so long as the farmer maintains his base. Because of the sharp changes in all commodity prices from one year to the next, the farmer will continue to maintain his acreage base in a given crop even in those years of short supply when the Secretary does not announce an acreage reduction program for that crop. This strategy will allow him to qualify for high deficiency payments in later years, when prices drop and the program is again active.[85]

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[82] *Id.* § 1444d(d) (1982).

[83] *Id.* § 1466(b)(4).

[84] Belsie, *Farmers' Choice: Safe Subsidies Keep Farmers from Soybeans*, Christian Science Monitor, April 6, 1988, at 6, col. 1.

[85] The 1988 crop year supports this conclusion that the farm programs influence planting decisions. The 1988 corn subsidy is high, whereas the alternative crop to corn growers—soybeans—is a non-program crop. Despite early signs that the price of soybeans would be high, corn growers chose to stay with corn, which, had there not been a severe drought, was destined to remain in surplus. The result is a shortage of domestic soybeans in the face of strong world market demand. Ingersoll, *Why is Oats Output Down, Demand Up? Blame 1985 Farm Law*, Wall St. J., June 10, 1988, at 1, col. 1.

The economic value of a high acreage base also contributes to an appreciated price of farmland. Farmland with a high acreage base generates a higher selling price and many farmers want to preserve the value of their land, particularly as they approach retirement. Related to this is the influence of lenders upon a farmer's production choices. Financial institutions encourage farmers to stay in the acreage reduction program because doing so will maintain high values on land which secures mortgages.[86] Thus, because the acreage limitation program is one that transfers income to farmers on the basis of the *status quo ante*, it discourages risk-taking and consideration of alternative farming practices.

There are also a number of indirect environmental effects of the acreage limitation program. These depend upon whether acreage limitation encourages or discourages farmers from employing those soil erosion control practices which reduce agricultural water pollution.

Preliminary attention must be given to the environmental problems associated with specialization in agriculture. Specialization nearly always means the abandonment of animal production and diverse cropping. As one observer states:

> In the fifties there was a diverse crop and livestock production system typically. You don't see so much of that anymore. Part of it is due to the fact that people don't like to work so darned hard twelve months of the year; feeding hogs, milking cows, picking and washing the eggs and all that sort of thing. So a lot of them have quit livestock. If you quit livestock, you forget the crop rotation. Your rotation becomes corn and soybean because you have no need for oats, straw, and alfalfa. So the rotation is out the window.[87]

Thus, when a farmer discontinues the raising of livestock and becomes a specialized grain farmer, the rotation typically becomes corn and soybeans only. An even more extreme form of specialization is the agricultural practice known as "continuous corn," which is the planting of corn in the same fields year-upon-year.[88] Grain specialization inevitably leads to a failure to rotate crops which, in turn, depletes the soil's nutrients and allows insect hosts to gather

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[86] *Id.*

[87] Interview with Gyles W. Randall, Agronomist, Southern Experiment Station, Univ. of Minn., in Waseca, Minn. (June 16, 1987).

[88] Farming "continuous corn" is described in B. Commoner, The Closing Circle: Nature Man & Technology 81-93 (1971).

more easily.[89] As a result, specialization requires more intensified application of fertilizers and pesticides and greatly increases soil erosion and water pollution.

Several factors have encouraged farmers to abandon crop rotation in favor of specialization. First, the multi-faceted farm operation is labor intensive while specialized grain farming requires only seasonal mechanized planting and harvesting.[90] Additionally, the market price for livestock has been relatively unstable in recent years.

It can also be argued that the acreage limitation and income support programs contribute to this damaging process of specialization. These programs reduce economic risk and uncertainty, pro-

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[89] At mid-century, the accepted method for successful farming was to grow a variety of crops as well as keep livestock. This helped to reduce soil erosion, conserve water in the field, and maintain high nitrogen levels naturally in the soil. On a typical midwestern grain farm, for example, fields would be planted to oats, wheat, alfalfa, corn and soybeans on an annual rotation which offered numerous benefits. Corn, which consumes large amounts of nitrogen and therefore rapidly depletes the soils, was planted after alfalfa or soybeans, plants which increased the amount of soil nitrogen as part of their natural life cycle. The oats, straw and alfalfa, although not particularly valuable in the cash marketplace, provided feed and bedding for livestock. Animal manure was returned to the fields as a natural source of nitrogen. The problem of weeds in row crops was reduced during years when oats and alfalfa were grown. Insects, which have a tendency to increase in one location from year-to-year were discouraged when their host crop was regularly rotated to other fields. Thus crop rotation, combined with a fair-sized livestock operation, tended to naturally dampen the demand for commercial fertilizers and pesticides, while at the same time contributing to the control of soil erosion.

[90] Consider the following passage from an editorial on the evolution of the modern American farmer's work habits:

> I don't even believe that many farmers work particularly hard.
>
> Oh I know that it makes farmers angry when you say they don't work very hard. But in my view, the worship of those kinds of myths let Midwestern agriculture get into the problems it faces today: mindless babble repeated by politicians so often that they and those who follow them began to believe it and make policy based on it.
>
> We've known for years that there is in fact a huge hidden unemployment in American agriculture. But no one has ever made much of it because the assertion results in such terrible political denunciations from those who like to believe in the noble, wise, terribly hard-working farmer.
>
> Moreover, until recent years it was a fundamentally harmless condition. But, in my view, that has changed because somewhere, somehow, we began making farm policy that was designed to make sure that a bunch of farmers made $50,000 or $60,000 a year for what amounted to no more than four or five months' real work.
>
> Every time I've raised this issue in the vicinity of a farmer, I've been instructed on how much capital has been invested, and what a dreadfully low return is being paid on it. That's always interesting but irrelevant. Labor and capital are different things: It just doesn't necessarily follow that a lot of work is going to make an unwise use of capital a good one.

Flansburg, The Des Moines Register, Oct. 24, 1986, at 15A.

vide income protection to farmers, and encourage continuous production of program crops. Moreover, crop specialization promotes intensive use of cropland which, in turn, further discourages diversity in farming operations.[91] The movement toward grain crop specialization will gain even more momentum if Congress creates a price support program for soybeans in the 1990 farm bill, as it is being urged to do.

It is true that, even without the acreage limitation programs, farmers would still have somewhat of an incentive to intensify production and grow the more lucrative row crops. Without the acreage limitation programs, however, other factors would exist to encourage the retention of cultivation practices such as rotation and strip-cropping. In the absence of government intervention, all crops would be subject to the vicissitudes of market price. Consequently, farmers would have a greater incentive to remain as diverse as possible so that when the price of one crop is low, the price of some other crop or livestock might be sufficiently high to protect the farm. For example, a farmer who is sensitive to market prices would be far more likely to raise livestock such as poultry, hogs, or cattle, since returns from their sale will offer a necessary buffer during those years when grain prices are low. Furthermore, there would be direct economic advantages from this crop diversification. Raising hogs, for example, is a good method of "processing" raw corn and obtaining a higher ultimate price from the crop. Animals consume hays and small grains which are a natural part of the crop rotation system, and their manures are returned to the fields in lieu of the more expensive (and more damaging) artificial fertilizers. Our current farm programs effectively remove all of these incentives which would otherwise encourage diversification and discourage specialization.

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[91] One study prepared by the Office of Technology Assessment commented upon this trend:

> Commodity programs seem to have promoted specialization in farming by reducing economic risks and uncertainty for farmers and ranchers. Income protection afforded for acreage planted in programs crops adds a powerful incentive for farmers to put more acres into those crops than they would if they bore all the risks. This causes a decline in mixed-crop livestock operations in favor of less diverse cash-grain operations. Cropland specialization reduces the use of crop rotations including cover crops, and thus increases erosion and other land degradation processes.

Office of Technology Assessment, Impacts of Technology on U.S. Cropland and Rangeland Productivity 152 (1982) (citation omitted) [hereinafter Impacts of Technology]. *See also* The Conservation Foundation, Agriculture and the Environment in a Changing World Economy 35-36 (1986) [hereinafter Changing World Economy].

The acreage limitation programs penalize the use of crop rotation with the clear result that the use of chemicals is emphasized and basic soil erosion techniques are abandoned.[92] Even though crop rotation, strip-cropping, contour plowing, and terracing all mitigate the effect of farming on our soils and waters,[93] our farm programs instead reward continuous production of crops which, quite often, are the crops most threatening to the environment. Corn, for example, is the largest user of herbicides. By rewarding its production, we are in effect subsidizing practices which put chemicals in the groundwater, pollute the surface waters, and deprive soil of natural nutrients. Other programmed crops—particularly rice and cotton—are also intense users of pesticides and fertilizers.

There is also a danger that the price of basic farm commodities could increase above loan and target prices as happened in the early 1970s. If this situation recurs, the key provisions of the price and income support programs would again become inapplicable and there would be no legal constraints on farm practices. Responding to the strong worldwide demand for these commodities, farmers will plant fence-row to fence-row, with dire effects on our soil and water. Several technicians have predicted that, if crop prices were to regain the levels reached in the early 1970s, there would be a 70% increase in soil erosion.[94]

Our price and income support programs thus constitute an unusual farm policy. When commodity prices are high, farmers are free of any economic responsibility for environmental degradation, allowing soil erosion losses and water pollution costs to be externalized altogether. Yet, when prices drop and farmers rejoin the farm price and income support programs, we base the amount of financial support received by individual farmers on a simulation of the prior boom economy. In both situations farmers are encouraged to intensify the level of farming practice.

It is not easy to determine why our farm policy has evolved into what is, effectively, a system of subsidizing farmers. Initially, when the Roosevelt administration was attempting to sell the farming community on its proposed agriculture programs, it had to overcome farmers' resistance to the idea of receiving "welfare" from

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[92] *See* Changing World Economy, *supra* note 91, at 35-36; Impacts of Technology, *supra* note 91, at 152.

[93] Shrader, *supra* note 1, at 30-32.

[94] Eroding Soils, *supra* note 7, at 219.

the federal government. Eventually, this welfare pejorative was avoided by tying farm payments to individual farm production levels. The agricultural community accepted this approach as fairly based on the skill and industry of the individual farmer. Small farmers with poor land would receive less money, while more skillful farmers or farmers with more productive land would get higher payments. Thus, payments based upon a combination of planting history and yield came to be viewed as merit-based rather than welfare-based.

While this "merit based" system may have been politically justifiable at that time, it has outlived its usefulness. We have inherited a system in which we still measure skill and industry exclusively by how much corn (or other commodity) a farmer grows on a given farm. Under this system, we continue to reward farmers based solely upon their level of production, even if the farmer has harmed soil and water resources by abandoning proper conservation techniques. When that earlier generation of farm policy-makers first drew up this legislation, the activities of an industrious and economically expansive farmer were thought to parallel the broader public interest in every way. That public interest is now defined differently. Where one producer achieves high corn yields by shifting extensive environmental costs onto the public, it is inconsistent with the public policy of environmental protection to reward and encourage this producer through our price and income support programs.

B. Another Example: The Dairy Herd Indemnification Program

We have already seen that large commodity programs, such as acreage limitation, can operate in opposition to soil erosion and water pollution control. This opposition is found at numerous other places throughout farm legislation.

A good example is the Dairy Herd Indemnification Program which was tacked on to the Food Security Act of 1985.[95] Under this program which took effect in April 1986, the Secretary is empowered to reduce domestic dairy production by purchasing entire herds of dairy cattle for slaughter or export. To qualify, farmers must have been producing milk before January 1, 1985 and must refrain from re-entering the dairy business for a three, four, or five year period (as specified by the Secretary). All qualified farmers

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[95] 7 U.S.C. § 1446(d)(3) (Supp. IV 1986).

were permitted to submit a bid price for their herds. The Secretary then chose participants for the buy-out program based on these bids.[96]

Considered by itself, the buy-out program is a generous attempt to reduce over-production of dairy products; however, the government is also "buying out" the rotation of hay, alfalfa, and small grains which is closely associated with dairy farming. Farmers participating in this program are encouraged to abandon rotation in favor of specialized grain farming and its attendant environmental effects. In addition, the dairy herd buy-out program does not favor the purchase of dairy herds which threaten environmentally sensitive areas (such as erodible, wildlife, or riparian acreage). Although it might make sense to buy out a dairy herd that was producing on the shores of a valuable wetland such as the Everglades, the buy-out program does not focus its production control efforts as does the Conservation Reserve Program.[97] It is thus a prime example of the federal government failing to take into account the environmental consequences of its commodity production control strategy.

C. Federal Milk Marketing Orders: Making Milk in the Tropics

The price and income support programs are not the only federal programs which contribute to nonpoint source pollution by artificially sustaining a certain agricultural industry in a certain location. A device known as the marketing order also contributes to this problem. Marketing orders, authorized under the Agricultural Marketing Agreement Act of 1937,[98] regulate the handling (or dealing) of agricultural commodities in interstate or foreign commerce. This device is used extensively in the fruit, nut, vegetable, and milk industries.[99] Marketing orders ostensibly exist to promote orderly marketing of agricultural commodities so that consumers will receive an adequate supply of a commodity at stable prices.

This system also allows groups of farmers to form federally sanctioned cartels whose purpose is to maintain and enhance product prices by controlling the amount and quality of products that can

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[96] *Id.*

[97] *See infra* notes 122-124 and accompanying text.

[98] Ch. 296, 50 Stat. 246 (codified at 7 U.S.C. § 601-625 (1982 & Supp. IV 1986)). The most thorough description of the marketing order system is Vetne, *Federal Marketing Order Programs*, in 1 Agricultural Law 80 (J. Davidson ed. 1982 & Supp. 1988).

[99] At present, nearly fifty orders regulate the handling of fruits and vegetables. As of 1981 there were forty-eight federal orders regulating the marketing of fluid milk and 80% of the fluid milk sold in the United States is sold under marketing orders. *See* 7 U.S.C. § 608c(5).

be marketed in a given area.[100] Fruit, nut, and vegetable marketing orders may require handlers to market only those products which meet certain size or grade specifications; they may regulate containers and the method of packing; and, they may limit production to particular areas and allocate production capacity among producers.[101] These controls on fruit, nut, and vegetable orders may be altered during the year depending on crop conditions and projected market demand.[102] A key term of every marketing order concerns the quantity of the product that will be marketed. Typically, the orders also require that the marketing of a product follow a system of rules.

The Secretary issues marketing orders after notice and hearing, but the orders must be approved by either two-thirds of the farmers who produce the commodity or by farmers who account for two-thirds of the total volume of production of that commodity.[103] A marketing order is usually accompanied by a marketing agreement which is signed by handlers of at least 50% of the product.[104] The marketing agreements are voluntary agreements among handlers of a product and the Secretary, but marketing orders are binding on all handlers, whether or not they sign an agreement.[105] The Secretary selects committees of industry representatives to administer fruit, nut, and vegetable orders.[106]

Milk orders, in addition to regulating the method of marketing milk products, also fix minimum prices that handlers must pay farmers for raw milk.[107] The price that handlers must pay for milk depends on the manner in which it will be used;[108] milk used for fluid purposes commands a higher price than milk used for manufactured purposes. Although handlers pay different prices for raw milk depending on its final use, farmers receive a uniform or blend

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[100] Congress created the marketing order system with the intent that the Secretary would "establish and maintain such orderly marketing conditions for agricultural commodities . . . as will establish, as the prices to farmers, parity prices . . . ." *Id.* § 602(1).

[101] *Id.* § 608c(6).

[102] *See* Vetne, *supra* note 98, at 88.

[103] 7 U.S.C § 608c(8)(A)-(B); 608c(9)(B)(i)-(ii).

[104] *Id.* § 608c(8).

[105] *Id.* § 608c(9). If there is not sufficient handler agreement, the order may still go into effect if the Secretary determines that "such order is the only practical means of advancing the interests of the producers of such commodity pursuant to the declared policy" and a sufficient number of producers agree. *Id.* § 608(c)(9)(B)(i)-(ii).

[106] *See* Vetne, *supra* note 98, at 90-91.

[107] 7 U.S.C § 608c(5)(A).

[108] *Id.*

price which is derived from the uses of all handlers covered by the milk order.[109]

Milk order prices are established with reference to the Minnesota-Wisconsin Price Series, a statistical sampling of prices paid to producers of Grade B milk by unregulated plants in Minnesota and Wisconsin.[110] The Minnesota-Wisconsin series is supposed to represent the free market price of milk. In reality, however, the series is significantly influenced by the CCC's purchases of dairy products under a program intended to keep milk prices at a specified percentage of parity.[111]

Marketing orders customarily are created upon the request of farmers or handlers, by petition to the Secretary.[112] A rulemaking hearing is held and the proponents of the order have the burden of showing that there are disorderly marketing conditions that justify federal regulatory intervention.[113] If the Secretary determines, on the basis of the hearing, that a marketing order is called for, he approves the order; it is then published in the Federal Register and becomes effective after thirty days.[114] One federal judge has described the system of marketing orders as follows:

> The primary purpose of the Act . . . is to protect the purchasing power of the farmers and the value of agricultural assets. The whole scheme of the Act is to raise the prices of agricultural products to, and keep them at, levels fixed by the Secretary, and to establish "orderly" marketing of them. Bluntly stated, that means, in part, marketing freed to a very large extent from price competition. It is arguable that the immediate, and possibly the long-run, interests of consumers are contrary to these goals. It is not surprising that the Act is full of provisions for agreements between the Secretary and producers, or growers, processors and handlers, agreements which are exempt from the antitrust laws . . . .[115]

How is it that a system initially created to protect consumers is now contrary to the long-term public interest? When the milk marketing order system was developed in the 1930s, the technology

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[109] *Id.* § 608c(5)(B).

[110] 7 C.F.R. § 1030.51 (1988); Vetne, *supra* note 98, at 117.

[111] *See* Vetne, *supra* note 98, at 117.

[112] *Id.* at 146 n.455. However, marketing orders "may be proposed by the Secretary or by any other person." 7 C.F.R. § 900.3 (1988).

[113] *See* 5 U.S.C. § 556(d) (1982). *See also* Vetne, *supra* note 98, at 149.

[114] 7 C.F.R. § 900.14 (1988).

[115] Rasmussen v. Hardin, 461 F.2d 595, 599 (9th Cir. 1972), *cert. denied*, 409 U.S. 933 (1972).

necessary to transport fluid milk over long distances did not exist. Accordingly, one important objective of federal dairy policy was to assure that each geographic area of the nation had an economically healthy dairy industry in order to supply milk for that region. The primary challenge to this goal stemmed from the fact that the cost of producing milk in the hot or sub-tropical southern states is considerably higher than in the northern tier states, where efficient production results in an enormous surplus of milk. If the southern and western dairy industries were to prosper, they had to be guaranteed a price that was adequate to cover their higher production costs. The milk marketing order became the tool for assuring the higher price.

Since the 1930s technology has advanced so that bulk fluid milk can now be transported as far as 2,000 miles.[116] Dairy farmers in areas such as the Great Lakes region are able to meet the milk needs of the sub-tropics, such as Southern Florida, but are unable to do so to any great degree due to the milk marketing orders. This phenomenon is described by one government study in this way:

> Although the technology has drastically improved the movability of milk, milk movements of the magnitude possible are uncommon. This is largely because the order system has operated to "freeze in" the local distribution system of the 1930s. *In essence, the Agricultural Adjustment Act of 1933 took a snapshot of the milk markets of the Depression era and, against the pull of technological change, has maintained essentially local production and marketing of milk.* The effect has been to prevent producers, handlers, and consumers from benefiting from a more modern and efficient marketing and distribution system.[117]

In summary, then, milk marketing orders sustain production in geographic regions where milk production makes little economic sense and may do environmental harm. At the same time, areas capable of achieving high levels of dairy efficiency are discouraged from exporting their milk south and west. The high-efficiency milk areas—most prominently the Lake States—also produce much of the nation's grain. Without an economic incentive for remaining in dairy production, the farmers in these regions will inevitably turn toward grain specialization and away from crop rotation. Hence, this highly-contrived system of milk orders also contributes to the

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[116] Antitrust Division, U.S. Dep't of Justice, Federal Milk Marketing Orders and Price Supports (1976) (reprint edition, Am. Enter. Inst. 4, 1977).

[117] *Id.* at 5 (emphasis added).

agricultural industry's adverse impact on the environment.

D. A Final Example: Sugar

Sugar production—like the production of milk, feedgrains, rice, and cotton—is sustained at an artificially high level by federal farm programs. About two-thirds of the sugar consumed in the United States is produced domestically.[118] The percentage of sugar imported would be much greater but for domestic price supports, which appear in two forms. First, producers have access to nonrecourse loans which, in effect, set a floor on the market price of domestically-produced sugar.[119] The current loan rate is nearly double the world price.[120] Second, federal import quotas directly limit the amount of sugar that enters the country.[121] Thus, by keeping the price of domestic sugar high and insulating the industry from international competition, Congress has assured the domestic industry a profit despite the direct and indirect costs to the public. Not only does this price support program encourage overproduction by the domestic sugar industry, but it also subsidizes corn production. Corn sweeteners are economic substitutes for sugar as long as the price of sugar remains at a high level. It is thus not surprising that corn growers support the sugar price support programs.

E. The Conservation Reserve Experiment

Congress established the Conservation Reserve Program (CRP) as part of the Food Security Act of 1985.[122] Although this program is actually part of the acreage reduction programs described above, the CRP's simplicity stands in sharp contrast to the complexity of those programs. The Secretary enters into contracts with individual farmers by which the farmers agree to remove from production acreage that is either highly erodible or which poses "an off-farm

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[118] H. Rep. No. 99-271, 99th Cong., 1st Sess. 10, *reprinted in* 1985 U.S. Code Cong. & Admin. News 1660, 1864.

[119] The Secretary is authorized to set a loan rate which is "fair and reasonable." 7 U.S.C. § 1446(h) (Supp. IV 1986).

[120] Soth, *Bad Policy Can't Be Sugar Coated*, Des Moines Register, Oct. 3, 1988, at 8A, col. 3.

[121] It is true, however, that import quotas have been regularly lowered through the 1980s. *Id.*

[122] *Supra* note 59. The Conservation Reserve Program is codified at 16 U.S.C. §§ 3831-36 (Supp. IV 1986).

environmental threat."[123] The farmer must convert these acres to cover, such as pasture, trees, and shrubs, and he will then receive an annual rental payment based on the number of acres placed in the reserve. Payments under the CRP are thus not related to historical production levels on individual farms. However, the program does seem to reward those farmers who have been guilty of excessive farm practices, and it surely encourages the trend towards specialization by providing income security.

The purpose of the conservation reserve is to reduce wind and water erosion on marginal croplands that are eroding at excessive rates while, at the same time, reducing the overall agricultural surpluses. The CRP thus advances the goals of the acreage limitation program while also serving important erosion and pollution control objectives. It does so by focusing exclusively on the most important source of agriculturally created pollution—highly erodible land. In its report on the bill which created the CRP, the Senate Committee on Agriculture, Nutrition, and Forestry characterized the program as "the foundation of all future agricultural and conservation policy, given that erosion rates on some croplands are exceeding thirty tons per acre per year."[124]

The Committee's unbridled enthusiasm for the conservation reserve concept is interesting if it indicates a belief, on the part of Congress, that erosion can be controlled only by taking lands out of production at public expense. Such a belief would ignore the continuing need to convince or compel farmers to employ erosion control practices in the fields that are not classified as highly erodible and that remain in cultivation.

The CRP clearly deserves praise as our only effective nonpoint source control program. Yet, it can achieve only limited environmental objectives even if, as has been suggested, the program is expanded to cover nonpoint source pollution of both surface and groundwaters.[125] The CRP is limited because, during boom times, there is no way to prevent farmers from allowing their ten-year contracts to lapse and returning the land to cultivation. It is also

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[123] *Id.* § 3831(b)-(c).

[124] S. Rep. No. 99-145, 99th Cong., 1st Sess. 307 (1985), *reprinted in* 1985 U.S. Code Cong. & Admin. News 1676, 1973.

[125] Reilly, *The Viewpoint of the President of the Conservation Foundation*, EPA Journal, April 1988, at 12. The ASCS has issued an interim rule which allows the use of "filter strips" in the Conservation Reserve Program. Filter strips consist of croplands, capable of substantially reducing sedimentation, which are adjacent to rivers and other water bodies. 53 Fed. Reg. 753 (1988).

limited because some of the nation's most productive cropland is highly erodible, and farmers are unlikely to place these lands in the conservation reserve.[126] Finally, it is limited because, no matter how many acres the conservation reserve ultimately includes, most of our productive farmland will necessarily remain in production, and it is this land that will continue to pose the greatest threat to the surface and groundwaters.

An additional difficulty with the conservation reserve concept is its underlying assumption that, when farmers adjust their production practices to meet society's environmental protection goals, their economic costs should be reimbursed by the federal Treasury. Since other private industries, as well as state and local governments, must meet these goals without federal reimbursement, this implies that the agricultural industry is entitled to preferential treatment under environmental control programs.

The explanation for this preferential treatment is, by now, predictable: farmers are "price-takers" in the marketplace and are unable to pass on, in the form of higher commodity prices, the costs of attaining environmental goals. Equity therefore requires that they be reimbursed. Even if this rationale were to withstand scrutiny, however, it still ignores a final, insurmountable problem. Application of the conservation reserve approach to our pervasive soil erosion, surface, and groundwater quality problems would require enormous annual expenditures. Even in the absence of the shadow cast by the massive federal debt, such a pay-out may well be politically unacceptable.

Thus, if we are serious about addressing the environmental effects of agriculture, it will be necessary to go beyond the conservation reserve approach and manage land in production so that water pollution is minimized. One component of such a management program must be the price and income support programs, which in recent years have been subsidizing agriculture with eighteen to twenty-five billion dollars per year. However, there must be an additional component which limits farmers' cultivation practices during years when prices are high and the Secretary is not utilizing acreage limitation, nonrecourse loans, and deficiency payments.

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[126] *See generally* Boggess & Dicks, *Multiyear Set-Asides: Promoting Consistency in Land Use Policies*, 43 J. Soil & Water Conservation (1988).

IV. Controlling Agricultural Nonpoint Source Pollution

It is clear that our current federal farm programs encourage the intense production of certain commodities (specialized grains) and sanction the excessive production of other products (dairy and sugar), and that this policy has a negative impact on environmental quality. With respect to the acres in production, only a fraction are enrolled in the conservation reserve or are restricted by the swampbuster, sodbuster, or conservation compliance requirements. Federal farm policy has thus failed in its efforts to control the deleterious effects of agricultural nonpoint source pollution by manipulating production incentives and disincentives.

It follows that if efforts to control ground and surface water pollution are to be successful, the federal government must regulate that greater percentage of farm land which is (and will always be) in production. Currently, those who farm these lands are practically exempt from any environmental responsibility and, instead, receive federal support for their environmentally harmful farming practices. Thus, despite the public interest in the farm bill's new conservation title,[127] we have not begun to deal seriously with the problem of agricultural pollution. It is inevitable that the agricultural pollution problem will eventually require the direct regulation of individual farms, just as we now regulate the environmental effects of industry, commerce, and governments. This article will now outline several proposals for how we might approach this problem.

A. Reaffirm the Original Purpose of the Soil Conservation Service

The SCS has the expertise and experience necessary to play the lead role in addressing agricultural pollution and has already been empowered to do so by existing legislation. It is a familiar establishment in nearly every agricultural community, and employs effective research practices. Yet, as previously noted, the SCS has since World War II focused on production enhancement rather than erosion control and water quality protection. In order for the SCS to be effective, Congress must limit its mission to controlling

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[127] Title XII of the Food Security Act of 1985, *supra* note 59, created the Erodible Land and Wetland Conservation and Reserve Program. Pub. L. No. 99-198, 99 Stat. 1506 (1985) (codified at 16 U.S.C. §§ 3801-45 (Supp. IV 1986)). *See infra* notes 133-34 and accompanying text.

soil erosion and the nonpoint source pollution which results. Revitalized by a return to its original mission, the SCS has the potential to be an effective weapon in the fight against agricultural pollution.

B. Transfer the Soil Conservation Service from the Department of Agriculture to the Environmental Protection Agency

The Department of Agriculture is a huge, diverse agency which serves many masters. It represents agriculture as an industry, but the USDA also administers food stamps and other food assistance programs, the affairs of the Forest Service (including mining, recreation, and wildlife), and various consumer-oriented programs focusing on nutritional content and wholesomeness of food. Over the years, programs initially located within the USDA have been transferred to different agencies as their constituencies broadened beyond the agricultural sector. Among USDA's losses have been food and drugs, the weather service, commodity exchanges, and regulation of agricultural pesticides.[128] It is time that the Soil Conservation Service is added to this list.

The true mission of the SCS is environmental protection through soil erosion control and prevention of nonpoint source water pollution.[129] These goals are closely attuned with those of the Clean Water Act,[130] the Safe Drinking Water Act,[131] and other

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[128] K. Meyer, D. Pedersen, N. Thorson & J. Davidson, Agricultural Law: Cases and Materials 10 (1985).

[129] Initially, the SCS was created not only to preserve soil and water, but for other reasons as well. Under the National Industrial Recovery Act of 1933 funds for erosion control were made available as a means of increasing employment. M. Benedict, Farm Policies of the United States 1790-1950 318 (reprint ed. 1975). Also, after the decision in United States v. Butler, 297 U.S. 1 (1936) which found principal parts of the Agricultural Adjustment Act unconstitutional, soil conservation became a vehicle for transferring financial assistance to farmers. Thus, the Soil Conservation and Domestic Allotment Act of 1936 represented a "shift in orientation from prices to soil conservation . . . largely [as] an expedient, designed to retain authorization for making payments to farmers. It was put forward on the basis of the more popular soil conservation objective rather than the less popular one of raising prices." Benedict, *supra*, at 351. Nevertheless, while the SCS (through its predecessor, the Soil Erosion Service) did play an important role in the nation's post-depression recovery, its *raison d'etre* lay in the strong conservation ethic of Hugh H. Bennett, Franklin Roosevelt, and others. *Id.* at 317.

[130] 33 U.S.C. §§ 1251-1387 (1982 & Supp. IV 1986). The Act states that its objective is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *Id.* § 1251(a).

[131] 42 U.S.C. §§ 300f-300j (1982 & Supp. IV 1986). The purpose of the Safe Drinking Water Act is "to assure that water supply systems serving the public meet minimum national standards for the protection of public health." H.R. Rep. No. 1185, 93rd Cong., 2d Sess. 1 (1974).

laws administered by the Environmental Protection Agency (EPA).[132] Furthermore, the USDA is closely allied with the economic interests of agriculture industry; to expect it to simultaneously regulate the activities of interests which it is charged to promote is to invite a conflict of interests. Finally, after the EPA develops the Nonpoint Source Management Program which was mandated by Congress in 1987,[133] the work of the SCS will completely overlap with that of the EPA. Placing the SCS within the EPA would eliminate redundant bureaucratic regulation and prevent these two agencies from working at cross purposes.

C. Re-Integrate Sound Soil Management Into the Price Support Programs

The farm price and income support programs provide the economic foundation for farmers and, as a result, are here to stay for the foreseeable future. Accordingly, their reform is an indispensable part of any thorough pollution control effort. Because these programs are politically entrenched within the farm community, change will not come easily. However, the new conservation title of the Food Security Act of 1985[134] has provided at least one model that could be adapted to the broader goal of controlling agricultural pollution.

Under this statute's concept of "conservation compliance," farms with highly erodible land must have a soil conservation plan by January 1, 1990 in order to continue to obtain farm commodity benefits and these farms must be in actual compliance with the plan by January 1, 1995.[135] The conservation plan is developed locally and reflects the unique needs and problems of individual farms. Taking into account such variables as climate, soil type, slope, types of crops and livestock, and drainage, the plan prescribes a set of improvements and land use practices intended

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[132] EPA already supervises the regulation of farm feedlots (40 C.F.R. §§ 412.10-412.26 (1988)), monitors the registration and use of pesticides (40 C.F.R. §§ 152.1-186.6300 (1988)), and assumes responsibility for protecting groundwater (*see, e.g.*, 40 C.F.R. § 144.1 (1988) (Underground Injection Control Program))—all functions which concern agriculture.

[133] Nonpoint Source Management Programs, Pub. L. No. 100-4, 101 Stat. 52 (Feb. 4, 1987) (codified at 33 U.S.C.A. § 1329 (West Supp. 1988)).

[134] 16 U.S.C. § 3801-45 (Supp. IV 1986).

[135] *Id.* § 3812(a). The conservation plan may be submitted up to two years after the SCS completes a soil survey for the farm if the survey is not completed by January 1, 1988. *Id.* § 3812(a)(2).

to meet soil erosion control goals. This title is by far the most significant conservation provision in the current farm law.

The limitation of this application of the conservation compliance concept is that it applies only to farms with soils classified as highly erodible, and therefore does not affect most of the acreage in production. The next step is to make active compliance with an approved soil conservation plan a universal requirement for participation in the farm support programs. Assuming that the plans approved by the local offices prove effective, a majority of farmers would then be required to initiate soil management practices. The problem of farmers abandoning their plans during years when commodity prices are high could be solved by making continued compliance a prerequisite to re-entry into the support program in later years.

The familiar response to any suggestion of mandatory conservation plan compliance for all farmers is that such a plan would be too intrusive, and that compliance should be voluntary. The history of SCS programs suggests rather strongly, however, that an erosion control program based upon free technical advice, demonstration projects, and voluntary compliance by private landowners will be ineffective unless it is combined with continuous financial incentives for farmers to participate in the program. Otherwise, landowners are quick to abandon non-compulsory cost-sharing programs when other approaches (such as intensive production) yield higher short term profits.

D. Disregard Prior Production in Determining the Amount of Farm Support

As long as Congress distributes farm payments on the basis of past plantings and yields of specific crops, income support programs will work at cross-purposes with the policy of erosion control. All farmers in active compliance with an SCS plan should receive income support; however, the amount received should not be based upon planting history or yields.[136] This amount might simply be the sum necessary to carry the average farm operation through a lean year. Alternatively, payments could be calculated based on the prices and values of the crops that would be included in a typi-

[136] In discussions of agricultural policy this proposal is referred to as "decoupling." Apart from the advantages to the environment, it is viewed as a tool to move agriculture toward a market orientation. It would encourage farmers to respond to market signals and avoid the distortions caused by the current programs.

cal, proper, and complete crop rotation in the region. If such changes in the method of calculating income support payments were implemented, larger farming operations would refuse to participate and would eventually require direct regulation.

E. Support Local Soil Conservation Districts, Reorganized to Conform to Watershed Boundaries

It has been reported that wherever agricultural water pollution is an issue, state governments prefer that remedial authority be vested in the soil conservation district, an agency without regulatory powers.[137] Soil and water conservation districts are logical mechanisms to combat nonpoint source pollution, since they exist primarily for the purpose of controlling soil erosion. Thus, it should not be surprising that these special districts trace their roots to the conservation program developed in the 1930s. Section 3 of the Soil Conservation Act of 1935,[138] contains the following provision:

> As a condition to the extending of any benefits under this chapter to any lands not owned or controlled by the United States or any of its agencies, the Secretary of Agriculture may, insofar as he may deem necessary for the purposes of this chapter, require —
>
> (1) The enactment and reasonable safeguards for the enforcement of State and local laws imposing suitable permanent restrictions on the use of such lands and otherwise providing for the prevention of soil erosion,
>
> (2) Agreements or covenants as to the permanent use of such lands; and
>
> (3) Contributions in money, services, materials, or otherwise, to any operations conferring such benefits.[139]

The SCS favored a local approach to the soil erosion problem. Accordingly, the agency adopted a soil conservation model, provided technical advice, and shared federal monies. In return, each state was expected to enact enabling legislation.

The original concept for soil conservation districts was a sound one. According to the model developed by the SCS, boundaries would conform to regional watershed and drainage basins, and

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[137] Beck, *Agricultural Water Pollution Control Law* in 2 Agricultural Law 223 (J. Davidson ed. 1982 & Supp. 1988).

[138] Act of April 27, 1935, ch. 85, §§ 1-5, 49 Stat. 163 (1935) (current version codified at 16 U.S.C. §§ 590a-590e (1982)).

[139] 16 U.S.C. § 590c.

each district would have authority to enact and enforce land use regulations necessary to achieve erosion control.[140] Unfortunately, these two essential concepts were excluded from enabling legislation in a majority of the states. Districts were organized along county lines and without police power. Thus, the SCS program in the United States became a purely voluntary one, depending upon the willingness of individual landowners to become "cooperators."[141]

Our current preference for soil conservation districts in state nonpoint source plans also suffers from the same malady. First, districts are not organized along watershed lines, but along political lines. Second, districts do not exercise police power. As we have seen, there is nothing which suggests that the problem of soil erosion and nonpoint pollution can be solved by landowners' self-regulation. Rather, our experience tells us that such problems can be solved only by dealing with the watershed as a whole, and only by subjecting owners to reasonable land use controls. The original concept of the soil conservation district is a sound one, and it is time to utilize it.

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[140] Williams, *supra* note 4, at 376.

[141] *Id.*