Soil Conservation and Water Pollution Control: The Muddy Record of the United States Department of Agriculture

by

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SOIL CONSERVATION AND WATER POLLUTION CONTROL: THE MUDDY RECORD OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

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I. INTRODUCTION

As early as 1894, the federal government recognized the existence of a widespread soil erosion problem throughout various parts of the United States. In that year, an Assistant Secretary of Agriculture noted, "Thousands of acres of land in this country are abandoned every year because the surface has been washed and gullied beyond the possibility of profitable cultivation."[1] A short time later, other agriculture experts admitted that erosion had left more land unfit for corn crops than poor farming procedures.[2] By 1910, the problem had become serious enough for the United States Department of Agriculture to insist that "[i]t is necessary that intelligent and vigorous efforts be made to farm correctly."[3] As soil erosion grew, so did pressure on the federal government to implement soil conservation programs.

At the same time increasing soil erosion was being identified as a hazard to productivity, its relation to water pollution was also being realized. Water borne soil particles contained in agricultural runoff were identified as major contributors to reduced water quality either

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[1] U.S. DEP'T OF AGRICULTURE, WASHED SOILS: HOW TO PREVENT AND RECLAIM THEM, FARMERS' BULLETIN 20 (1894).

[2] U.S. DEP'T OF AGRICULTURE, CORN CULTIVATION, FARMERS' BULLETIN 414 (1910).

[3] U.S. DEP'T OF AGRICULTURE, SOIL CONSERVATION, FARMERS' BULLETIN 406 (1910).

through sedimentation itself or through the chemicals borne by the soil particles which entered waterways. In fact, the Conference of Governors, held in 1908, specifically called attention to the need for soil erosion prevention because runoff imperiled water supplies for irrigation, and also caused siltation of reservoirs and irrigation canals.[4] Consequently, Department of Agriculture soil conservation programs have always had significant potential to reduce water pollution by reducing sedimentation, despite the fact that these programs typically had as stated goals the protection of land rather than water, and were couched in terms of soil erosion control and soil conservation rather than water pollution. One of the most recent undertakings of the Department of Agriculture evidencing the dual impact approach of its programs is Section 208 of the Federal Water Pollution Control Act Amendments of 1972.[5]

Under provisions of Section 208 of the Federal Water Pollution Control Act Amendments of 1972,[6] every state must submit a state Water Quality Management Plan covering so-called non-designated areas within the state to the Environmental Protection Agency (EPA) for approval.[7] The legislation requires these plans to both "identify, if appropriate, agriculturally . . . related nonpoint sources of pollution . . . and . . . to set forth procedures and meth-

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[4] PINCHOT, BREAKING NEW GROUND 342, 351 (1947).

[5] *See, e.g.*, Train, *EPA and Agriculture: Establishing a Partnership*, 30 J. SOIL & WATER CONSERVATION 33 (1975) ("Fortunately, water pollution control and soil and water conservation require identical measures in most instances."); SOIL CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, POLLUTION ABATEMENT THROUGH SOIL AND WATER MANAGEMENT (1971).

In terms of quantity of pollutants, sediment resulting from soil erosion is the largest contributor from any source, point or nonpoint. USDA & OFFICE OF SCIENCE AND TECHNOLOGY, CONTROL OF AGRICULTURAL—RELATED POLLUTION 10 (1969); COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY 170 (1972).

The major chemical contaminants associated with agricultural nonpoint source pollution and typically carried into the water attached to soil particles, are nitrogen, phosphorous, pesticides and animal wastes.

[6] 33 U.S.C. § 1288 (1976).

[7] *Id.* § 1288(b)(1); *see also* 40 C.F.R. §§ 130.40-.43, 131.20 (1976). The Act distinguishes preparation of plans for two types of areas within a state. For each area designated by the governor as suffering water quality control problems as a result of urban-industrial concentrations or other factors, one type of plan must be prepared, while another type is required for all portions of a state which are not specially designated by the governor. Designated area plans, prepared by local authorities pertain, for the most part, to urban and industrial water pollution problems. Non-designated area plans, which are prepared by the state, pertain more to rural problems such as mine runoff, and forestry and agricultural water pollution. 33 U.S.C. § 1288(a)(1976). Approximately 95 percent of the nation's waterways are located in non-designated areas. Natural Resources Defense Council, Inc. v. Costle, No. 75-1873 (D.C. Cir. Sept. 6, 1977), 7 ENVIR. L. REP. 20702 (1977).

ods (including land use requirements) to control to the extent feasible such sources."[8] Since the vast majority of agricultural land in the United States lies in these non-designated areas,[9] virtually all agricultural land in the country has the potential to become subject to federally-mandated water pollution regulations, including land use controls.[10]

The possibility that regulations adopted pursuant to Section 208 may require significant alteration of some current agricultural practices has caused a good deal of concern among farmers.[11] Pressure

[8] 33 U.S.C. § 2388(b)(2)(F)(1976). A number of articles have appeared which discuss Section 208 in general and its relations to pollution from nonpoint agriculture sources in particular. Some recent useful sources include: Note, *A Procedural Framework for Implementing Nonpoint Source Water Pollution Control in Iowa*, 63 IOWA L. REV. 184 (1977); Tripp, *Tensions and Conflicts in Federal Pollution Control and Water Resource Policy*, 14 HARV. J. ON LEG. 225, 245-68 (1977); Comment, *Areawide Planning Under the Federal Water Pollution Control Act Amendments of 1972: Intergovernmental and Land Use Implications*, 54 TEX. L. REV. 1047 (1976); Goldfarb, *Water Quality Management Planning: The Fate of 208*, 8 TOL. L. REV. 105 (1976); Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where is it Now?* 6 ENVIR. L. REP. 50115 (1976); Montgomery, *Control of Agricultural Water Pollution: A Continuing Regulatory Dilemma*, 1976 ILL. L. FORUM 533.

[9] Total land area of the United States is approximately 2.3 billion acres. Almost 97 percent of it is rural in nature and therefore includable in non-designated areas. U.S. ENVIRONMENTAL PROTECTION AGENCY, METHODS FOR IDENTIFYING AND EVALUATING THE NATURE AND EXTENT OF NONPOINT SOURCES OF POLLUTANTS 3 (1973). Of the total land area, almost one billion acres are devoted to cropland, pastureland and rangeland. U.S. DEP'T OF AGRICULTURE, NATIONAL INVENTORY OF SOIL AND WATER CONSERVATION NEEDS 1 (1967); U.S. Dep't of Agriculture, Statistical Bulletin No. 461 (1971).

[10] Of course it is possible that state implementation plans will not require substantial regulation of agricultural nonpoint source pollution. Under EPA's initial interpretation of Section 208, states were not required to prepare plans for nondesignated areas, and over one-half of the governors chose to, in effect, remove their states from the Section 208 planning process by refusing to designate any water quality control problem areas. *See* Natural Resources Defense Council, Inc. v. Train, 396 F. Supp. 1386, 1390 (D.D.C. 1975). This indication of state reluctance to implement Section 208 may manifest itself in initial state plans which do not require substantial nonpoint regulation.

Should a state fail to provide for significant nonpoint source regulation in its plan, however, there is a substantial likelihood that the plan would not receive EPA approval. EPA publications have identified sediment and sediment-born chemicals as major pollutants and have pinpointed croplands and grasslands as major sediment sources. *See, e.g.*, U.S. ENVT'L PROTECTION AGENCY, METHODS FOR IDENTIFYING AND EVALUATING THE NATURE AND EXTENT OF NONPOINT SOURCES OF POLLUTANTS 5-7, 12-14 (1973). Therefore, it is doubtful that EPA would approve a plan which did not deal meaningfully with nonpoint source pollution.

For a discussion of EPA's power to compel submission of an adequate plan and compel implementation of a plan once it is approved, *see* Goldfarb, *Water Quality Management Planning: The Fate of 208*, 8 TOL. L. REV. 105, 119-31 (1976); *see generally* Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196 (1977).

[11] *See generally* Nicol, Madsen & Heady, *The Impact of a National Soil Conservancy Law*, 29 J. SOIL & WATER CONSERVATION 204 (1974). A variety of different types of possible regula-

from farm groups helped secure passage in the Senate of a bill allowing federal cost-sharing of agricultural nonpoint source pollution control measures.[12] In addition, there are serious efforts being made to have the administration of Section 208, as it applies to agriculture, removed from EPA and placed instead in the Department of Agriculture.[13] EPA itself, although certainly not agreeing to a formal shift of authority, has recognized a need to rely heavily on existing soil conservation expertise in the Department.[14] Thus, with a prominent role in the control of agricultural nonpoint source pollution assured for the Department of Agriculture, it is especially important to examine that agency's past performance regarding the limitation of soil erosion. Two specific questions must be asked: what have been the Department's accomplishments and failures, and what experience has been gained from these past activities which may assure success in the coming Section 208 control effort?

This article will review the history of the Department of Agriculture in the area of soil conservation. After a discussion of the Department's early soil conservation efforts, the article will examine the Soil Conservation Service and its attendant land use programs. Next, the Agricultural Conservation Program, a major soil conservation program of the Department of Agriculture which is not administered by the Soil Conservation Service, will be reviewed. Additional programs within the Department of Agriculture which, although developed primarily to deal with problems other than soil erosion, have had conservation as a secondary objective will then be discussed. Each of these sections will note both the strengths and weaknesses of the Department in the area of soil conservation. Fi-

tions have been suggested: permits based on approved erosion and sediment control plans for land disturbing activities; mandatory soil loss limits which could dictate the type of crops grown on specific lands or require expensive land treatment measures; and limitations on the amount and timing of fertilizer and pesticide application. For examples of what some states have done, *see* NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS SEDIMENT CONTROL AND MANPOWER PROJECT, EROSION AND SEDIMENT CONTROL PROGRAMS: SIX CASE STUDIES (1976); Phillips & Hicks, *Sediment Control: The North Carolina Law*, 31 J. SOIL & WATER CONSERVATION 76 (1976); Boyce & Beer, *Mandatory Erosion Control and Response to Iowa's Conservancy District Law*, 28 J. SOIL & WATER CONSERVATION 204 (1974).

[12] S. 1952, 95th Cong., 1st Sess. (1977).

[13] 6 NRDC Newsletter, July/Aug. 1977, at 10, col. 2. Farmers and ranchers clearly felt that USDA would be more understanding of, and responsive to, their needs than would EPA.

[14] *See generally* Train, *EPA and Agriculture: Establishing a Partnership*, 30 J. SOIL & WATER CONSERVATION 33 (1975); Garner, *Regulatory Programs for Nonpoint Pollution Control: The Role of Conservation Districts*, 32 J. SOIL & WATER CONSERVATION 199 (1977). The Federal Water Pollution Control Act Amendments themselves call for the Administrator to cooperate with the Secretary of Agriculture. 33 U.S.C. § 1254(p)(1976).

nally, the article will examine Section 208 to determine if any changes have been undertaken as a result of the past experience of the Department of Agriculture in its fight against soil erosion.

II. UNITED STATES DEPARTMENT OF AGRICULTURE CONSERVATION AND EROSION CONTROL EFFORTS

A. Early Activities

Federal soil conservation efforts began in 1894, when the United States Department of Agriculture (USDA) created the Bureau of Chemistry and Soils.[15] National interest in the problem of soil erosion increased during the next decade, primarily as a result of President Theodore Roosevelt's activities and the publicity surrounding a 1908 Governors' Conference, convened at his request, during which conservation was the primary subject of discussion.[16] In 1908, the Bureau of Chemistry and Soils established a separate division concerned with soil erosion.[17] In 1914, USDA created the Extension Division[18] which, despite its primary focus on agricultural production and economics,[19] also participated in soil conservation activities.[20]

National awareness of the impact of soil erosion increased during the late 1920's, largely through the efforts of Hugh Bennett.[21] An employee of the Bureau of Chemistry and Soils, Bennett was a writer and lecturer on the subject of soil erosion, and an indefatigable advocate of greater federal involvement in erosion control.[22] In

[15] In 1901, a departmental reorganization by the Secretary of USDA created a separate Bureau of Soils. G. BAKER, J. PORTEL, W. RASMUSSEN & V. WISER, CENTURY OF SERVICE 51 (1963).

[16] Roosevelt also planned a world conservation conference which was quashed when President Taft took office. R.B. HELD & M. CLAWSON, SOIL CONSERVATION IN PERSPECTIVE 36 (1965). *See* REPORT OF THE NATIONAL CONSERVATION COMMISSION, S. Doc. No. 676, 60th Cong., 2d Sess., 43 CONG. REC. 1273-79 (1909).

[17] R.J. MORGAN, GOVERNING SOIL CONSERVATION 2 (1965).

[18] Pub. L. No. 63-95, 38 Stat. 372 (1914).

[19] R.B. HELD & M. CLAWSON, *supra* note 16, at 40.

[20] The Extension Division was responsible for terracing approximately 18 million acres of land on some 600,000 farms between 1915 and 1932. *See Agricultural Department Appropriations Bill for 1935: Hearings Before the Subcomm. of the House Comm. on Appropriations,* 73d Cong., 2d Sess. 981 (1934) (statement of S.H. McCrory, Chief, Bureau of Agricultural Engineering). By 1928, it had assisted in the construction of thousands of soil-saving dams and the prevention of soil erosion had become an important goal of the Extension Service. *See* R.J. MORGAN, *supra* note 17, at 3.

[21] D.H. SIMMS, THE SOIL CONSERVATION SERVICE 6-10 (1970).

[22] Bennett is considered by many to be the "father" of the soil conservation movement.

1928, after prodding by Bennett and his associates, Congress conducted hearings on erosion control[23] which resulted in the appropriation of funds for research into the cause and prevention of soil erosion.[24] USDA divided these funds among several of its subdivisions: the Bureau of Chemistry and Soils, the Forest Service and the Bureau of Agricultural Engineering, and required each agency to cooperate in its studies with the land grant universities.[25]

Differences in approach soon developed within USDA. The Bureau of Agricultural Engineering stressed terracing to control erosion, while Bennett and the Bureau of Chemistry and Soils advocated a more comprehensive approach employing, in addition to terracing, a variety of control practices such as stripcropping,[26] increasing or reestablishing vegetative cover and contour plowing.[27] These differences led the two factions within USDA to submit, in 1933, differing plans for federal involvement in the control of soil erosion.[28] Bennett's plan eventually prevailed, with Congress authorizing five million dollars of emergency funds for the newly created Soil Erosion Service (SES) which was to be headed by Bennett.[29] However, much to the chagrin of USDA, SES was placed in the Department of Interior.[30]

His paper, *Soil Erosion, A National Menace*, published by USDA in 1928, did much to generate interest in and support for federal conservation programs.

[23] *Agricultural Department Appropriations Bill for 1930: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 70th Cong., 2d Sess. 310-30 (1928).

[24] Pub. L. No. 70-769, 45 Stat. 1206, 1207 (1929); *see* D.H. SIMMS, *supra* note 21, at 9. The appropriation of $185,000 the first year, Pub. L. No. 71-272, 46 Stat. 392, 413 (1930), was increased to $330,000 for fiscal year 1931. Pub. L. No. 71-217, 46 Stat. 1242, 1275 (1931).

[25] C. HARDIN, THE POLITICS OF AGRICULTURE 54 (1952).

[26] Stripcropping is a method of growing crops in a systematic arrangement or strips of bands which serve as barriers to wind and water erosion. The crops are typically grown in parallel strips laid out across the general slope but not following the contour. Strips of grass or close-growing crops are alternated with strips of cultivated crops.

[27] R.J. MORGAN, *supra* note 17, at 7-10.

[28] The plans were submitted to Harold Ickes, Administrator of Emergency Public Works. *Id.* Various forms of "in-fighting" continued throughout the USDA conservation effort. See text at notes 130, 199, *infra*.

[29] The funds were authorized for soil erosion projects under §§ 202-03 of the Industrial Recovery Act, Pub. L. No. 73-67, 48 Stat. 195, 201 (1933).

[30] The explanation as to why the SES was established in the Department of Interior rather than the Department of Agriculture is not clear. The best guess seems to be that it was part of a plan by Secretary of Interior Ickes to transform the Department of Interior into a Department of Conservation. In addition, there were officials within the Department of Agriculture who, while supporting Bennett's ideas, believed there might be attempts to block implementation of his plans by some Agriculture Department bureau chiefs and land grant college interests. They therefore felt it better to establish SES in the Interior Department. The actual

Two significant factors have continued to exert influence over the direction and effectiveness of federal involvement in erosion control. The first factor, illustrated by Bennett's fight within USDA over the appropriate approach for control programs, is factionalism. Throughout its history, federal soil conservation efforts have been subject to pressures from a wide variety of sources, including subdivisions within USDA as well as other federal departments and outside agricultural interests. These conflicting pressures concerning the proper role and scope of federal soil conservation efforts have played a large role in shaping federal policy.[31]

The second factor which has influenced soil conservation efforts is the fact that a major purpose, perhaps the major purpose, for the establishment of SES was to provide jobs for the Depression's unemployed rather than to combat soil erosion.[32] That preventing soil erosion was not SES's primary objective is witnessed by the fact that at one point the possibility arose that the Federal Emergency Relief Administration would assume control over the operation of the federal soil erosion program.[33] The establishment of SES as an

establishment of SES was done by Harold Ickes who, in his capacity as Administrator of the Federal Emergency Administration of Public Works, wrote a letter to himself as Secretary of the Interior. R.J. MORGAN, *supra* note 17, at 10, *citing* National Archives Record Group 114 (Soil Erosion Service File) (Letter from Administrator of Public Works to Secretary of Interior).

[31] The battle in the early years of SES (later the Soil Conservation Service) pitted Bennett and his supporters within USDA against other elements within the Department, mainly in the Bureau of Agricultural Engineering and the Extension Division, who were joined by the state agricultural schools and the Farm Bureau. Bennett's opponents strongly objected to the development of a centralized erosion control program under Bennett's direction, pushing instead for funding of a decentralized approach under the direction of the Extension Division and the state extension services of the land grant colleges. The colleges and extension services viewed the programs of SES and its successor as primarily educational in approach, and education had historically been their exclusive domain. Furthermore, they believed that they had done an acceptable job in dealing with the erosion problem in the past and saw no need for the creation of a new "interfering" agency. C. HARDIN, *supra* note 25, at 20-23, 27-32.

[32] M.R. BENEDICT, FARM POLICIES OF THE UNITED STATES 1790-1950, at 318 (1953); R.B. HELD & M. CLAWSON, *supra* note 16, at 46.

[33] R.J. MORGAN, *supra* note 17, at 12-13. The Federal Emergency Relief Administration was the main federal agency overseeing public sector jobs during the Depression. A competitor to SES was organized within the Relief Administration in September of 1934, through the efforts of pro-terracing advocates who, with the Extension Division, still hoped to obtain control of the federal erosion control programs. G. BAKER, J. PORTEL, W. RASMUSSEN & V. WISER, CENTURY OF SERVICE 192 (1963). The Administration's projects consisted mainly of building terraces and ponds. The projects were under the technical direction of the state extension services and had strong support from state agricultural colleges. This program was a source of considerable irritation and worry to those in SES who felt that indiscriminate terracing would do more harm than good both from a soil conservation and a public relations viewpoint,

emergency relief program to deal with unemployment prevented the agency from directing all its attention to the need for soil conservation. Motivated by the need to create jobs, at times the agency undertook projects before developing any clear conservation plan or choosing a suitable location. Although not a total waste of funds, such projects created a great deal of inefficiency in the early activities of SES.[34]

The SES program expressly sought to control sheet and gully erosion and to rehabilitate badly eroded lands.[35] SES drew manpower for its undertakings from the Civilian Conservation Corps and the Works Progress Administration.[36] The major element of the SES program was the demonstration project, undertaken to show that sound farming practices would prevent excessive erosion.[37] Under this approach SES provided technical expertise to help farmers and ranchers build dams, terraces and contour strips, and to reintroduce vegetation on eroding lands. In return, farmers and ranchers signed five-year agreements to supply specified labor and materials and to comply with land use practices recommended by SES. In addition, the landowner agreed to allow other farmers and ranchers to view the "demonstration" on his land.[38]

From September, 1933 to March, 1935, the eighteen months during which SES operated under the direction of the Department of Interior, the agency established forty-one demonstration projects, involving approximately four million acres of public and private lands in thirty-one states, and created fifty Civilian Conservation

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and who also feared that the program would have more influence in securing appropriations. R.J. MORGAN, *supra* note 17, at 12, 16.

[34] R.B. HELD & M. CLAWSON, *supra* note 16, at 46.

[35] R.J. MORGAN, *supra* note 17, at 13, *citing* National Archives Record Group 16 (M.L. Wilson file, 1934-40) (Oscar Chapman, Assistant Secretary of Interior to Charles Eliot II, covering a memorandum from Dr. Bennett). Bennett's report, from which the statement referring to goals was apparently taken, is entitled REPORT OF THE NATIONAL RESOURCES BOARD ON NATIONAL PLANNING AND PUBLIC WORKS IN RELATION TO NATURAL RESOURCES AND INCLUDING LAND USE AND WATER RESOURCES WITH FINDINGS AND RECOMMENDATIONS (December 1, 1934).

Sheet erosion refers to the removal of a fairly uniform layer of soil from the land surface. Gully erosion is the process whereby water accumulates in narrow channels and, over short periods, removes the soil from this narrow area. Depths can range from one or two feet to as much as 75 or 100 feet.

[36] As of March 1935, some 11,000 Civilian Conservation Corps workers and 5,000 other laborers were employed on SES projects. M.R. BENEDICT, *supra* note 32, at 318.

[37] *Soil Erosion Program: Hearings Before the Subcomm. of the House Comm. on Public Lands*, 74th Cong., 1st Sess. 4 (1935) (statement of H. H. Bennett).

[38] R.J. MORGAN, *supra* note 17, at 11-12.

Corps camps.[39] In addition, during that time SES carried out three comprehensive land rehabilitation projects, primarily on federal lands, which involved 35,700,000 acres.[40] SES expenditures for the eighteen month period totaled twelve million dollars.[41]

Despite the extensive use of demonstration projects, the success of this SES program is hard to measure. Although Director Bennett estimated that at least one million farmers had inspected the demonstration projects,[42] this figure is questionable.[43] Moreover, since very few farmers or ranchers were directly involved with the conservation program,[44] there is no way to determine whether those who visited the projects actually applied the demonstrated procedures to their own lands. In short, the success of the demonstration projects in curbing soil erosion is less than conclusive.

B. The Soil Conservation Service

USDA soon recognized that it had lost an important program when SES was assigned to the Interior Department. Consequently, USDA attempted to regain control of the federal soil erosion program in late 1934.[45] In December of 1934, the report of a study group established by Secretary of the Interior Ickes recommended that, due to SES's heavy involvement with farm methods and farm lands, the agency should be transferred to USDA, provided, however, that the Department of Agriculture consolidate all of its research and erosion control activities on private lands into one agency.[46] However, the report did not persuade Secretary Ickes, who introduced legislation to establish SES as a permanent arm of the Department

[39] M.R. BENEDICT, *supra* note 32, at 318; *Hearings Before House Comm. on Public Lands, supra* note 37, at 5.

[40] *Hearings Before House Comm. on Public Lands, supra* note 37, at 4.

[41] C. HARDIN, *supra* note 25, at 55.

[42] *Hearings Before House Comm. on Public Lands, supra* note 37, at 11.

[43] *See* R.B. HELD & M. CLAWSON, *supra* note 16, at 46.

[44] *Id.*

[45] D.H. SIMMS, *supra* note 21, at 12. It was not merely agency aggrandizement which motivated USDA, however; Secretary of Agriculture Wallace as well as officials within the land grant colleges and even within the Department of Interior recognized that several USDA bureaus were duplicating the work of SES, and that SES had to rely on USDA and agricultural colleges for much of its expertise. R.J. MORGAN, *supra* note 17, at 15-18; *see also* 48TH PROCEEDINGS OF THE ASSOCIATION OF LAND GRANT COLLEGES AND UNIVERSITIES 240 (1934).

[46] D.H. SIMMS, *supra* note 21 at 12-13; *see also* COMMITTEE ON SOIL EROSION MEMORANDUM, REPORT TO THE SECRETARY OF THE INTERIOR ON THE SOIL EROSION SERVICE AS A PERMANENT COORDINATED PROGRAM OF SOIL EROSION CONTROL (1934).

of Interior.[47] USDA then proposed its own bill.[48] This interdepartmental dispute ended when President Franklin Roosevelt intervened and ordered the transfer of SES to USDA.[49] Passage of the Soil Erosion Act of 1935[50] formalized the transfer.

1. The Conservation Operations Program

Besides transferring SES to USDA, the Soil Erosion Act of 1935 also changed the name of SES to the Soil Conservation Service (SCS).[51] Yet the legislation did much more than simply change the name of a federal agency. The Act set out a broad expression of policy and mandated coordination among all federal agencies dealing with soil erosion. It labeled the waste of soil and moisture from erosion a national menace and declared it to be Congress' intent to provide a permanent program for the control of erosion "to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health, public lands and relieve unemployment. . . ."[52] Congress empowered the Secretary of Agriculture to conduct surveys, investigations and research dealing with soil erosion and the prevention of such erosion; to publish and disseminate the results of information obtained; and to conduct demonstration projects in areas with erosion problems through the Conservation Operations Program.[53]

The Conservation Operations Program has served as the focal point of SCS's soil conservation efforts. Under this program the Secretary of Agriculture is authorized to undertake a wide range of measures to prevent soil erosion, including engineering operations, new methods of cultivation, re-vegetation and changes in land use,[54] as well as to enter into agreements with or furnish aid to any agency or person to further the purposes of the Soil Erosion Act.[55] The Act

[47] *See* S. REP. No. 2149, 74th Cong., 1st Sess., 79 CONG. REC. 2821 (1935); H. REP. No. 6432, 74th Cong., 1st Sess., 79 CONG. REC. 2983 (1935).

[48] *See* H. REP. No. 6872, 74th Cong., 1st Sess., 79 CONG. REC. 4133 (1935). The USDA bill sought, *inter alia*, to transfer the duties of SES from the Department of Interior to USDA.

[49] E.B. NIXON, FRANKLIN D. ROOSEVELT AND CONSERVATION 1911-1945, at 363 (1957).

[50] Pub. L. No. 74-76, 49 Stat. 163-(1935) (current version at 16 U.S.C. §§ 590a-590q (1976)).

[51] 16 U.S.C. § 590e (1976).

[52] *Id.* § 590a.

[53] *Id.* § 590(a)(1); *see also* TO PROTECT TOMORROW'S FOOD SUPPLY, SOIL CONSERVATION NEEDS PRIORITY ATTENTION, REPORT TO THE CONGRESS BY THE COMPTROLLER GENERAL OF THE UNITED STATES, February 14, 1977 [hereinafter cited as 1977 GAO REPORT].

[54] 16 U.S.C. § 590a(2) (1976).

[55] *Id.* § 590a(3).

empowers these agreements to provide for the federal acquisition of lands or interests therein by purchase, gift or condemnation when necessary to fulfill the purposes of the Act.[56] A very important section of the Act, especially in terms of the future direction of SCS programs, allows the Secretary to condition the extension of benefits to private lands under the Conservation Operations Program on 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 erosion," as well as on agreements or covenants as to the permanent use of the lands and on contributions of money, labor and materials.[57]

a. Demonstration Projects

At this early stage, SCS primarily emphasized continuation and expansion of the demonstration project approach.[58] By January, 1936, SCS controlled 445 Civilian Conservation Corps camps,[59] employed 140,000 people[60] and operated 141 demonstration projects, forty-eight nurseries and twenty-three research stations.[61] Approximately fifty thousand farmers living in demonstration areas had applied conservation plans to roughly five million acres of land.[62]

Until this time the aim of SCS had been primarily educational. Its major objective was to establish demonstration projects throughout the nation in sufficient numbers and with sufficient geographic distribution so that every farmer and rancher in the country with an erosion problem could easily visit a project and learn how to

[56] *Id.* § 590a(4).

[57] *Id.* § 590c. The land use controls could be accomplished through state or local law, or they could be established by individual agreement or covenant. *Id.*

Although nothing much has been done in the way of state or local land use controls relating to agriculture, see text at notes 84-86, *infra*, SCS has used its private agreement and covenant powers under the Soil Erosion Act to require landowners to maintain specific practices for relatively long periods of time. In addition, by requiring contributions toward the cost of projects, SCS can assure that a landowner has a financial stake in developing and maintaining a particular improvement.

[58] *Agricultural Department Appropriation Bill for 1937: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 74th Cong., 2d Sess. 830-31 (1936) (statement of H. H. Bennett) [hereinafter cited as *House Appropriations Hearings for 1937*]; D.H. SIMMS, *supra* note 21, at 17.

[59] *House Appropriations Hearings for 1937, supra* note 58, at 890.

[60] *Id.* at 851.

[61] *Id.* at 888.

[62] D.H. SIMMS, *supra* note 21, at 17.

correct his problems on his own.[63] However, SCS Chief Bennett realized from the first days of the Soil Erosion Service that the demonstration project approach alone was inadequate, and that future soil erosion work might be more effective if undertaken at the local level by a local entity.[64] A number of reasons militated for a new approach. First, the demonstration project program depended on a large government labor force which would not be available once the Depression ended.[65] Second, the cost of providing demonstration projects within reach of every farmer in the country with erosion problems would have been prohibitive.[66] Of perhaps greatest importance, however, was the realization that each parcel of land had its own unique characteristics and, for a conservation plan to be effective, these unique characteristics had to be considered.[67] This required more attention to individual farms and more direct and active landowner participation than was provided for by the demonstration projects approach.[68]

b. Soil Conservation Districts

In an effort to foster a more individualized approach to the soil erosion problem, SCS established soil conservation districts.[69] The conservation district approach called for SCS to contribute technical advice, supervision, surveys and cost-sharing monies in return for the passage of suitable state enabling legislation and state contributions of a substantial portion of the funds for operation of the districts.[70] As a guide, USDA published a Standard State Soil Conservation Districts Law for enactment by the states.[71] The Standard

[63] *Agricultural Appropriations Bill for 1938: Hearings Before the Subcomm. of the Senate Comm. on Appropriations*, 75th Cong., 1st Sess. 633 (1937) [hereinafter cited as *Senate Hearings on Appropriations for 1938*]; *see also* G. BAKER *et al.*, *supra* note 33, at 196.

[64] *See Protection of Land Resources Against Soil Erosion: Hearings Before the Subcomm. of the Senate Comm. on Agriculture and Forestry*, 74th Cong., 1st Sess. 27 (1935); R.B. HELD & M. CLAWSON, *supra* note 16, at 46-47.

[65] D.H. SIMMS, *supra* note 21, at 18.

[66] *See House Appropriations Hearings for 1937, supra* note 58, at 925; *Senate Hearings on Appropriations for 1938, supra* note 63, at 632 (statement of Senator Copeland); G. BAKER *et al.*, *supra* note 33, at 196.

[67] *House Appropriations Hearings for 1937, supra* note 58, at 832.

[68] *Agricultural Department Appropriation Bill for 1938: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 75th Cong., 1st Sess. 1034 (1937).

[69] *See* SOIL CONSERVATION DISTRICTS FOR EROSION CONTROL, U.S. SOIL CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE MISCELLANEOUS PUBLICATION 293 (1937).

[70] *Agricultural Appropriation Bill for 1937: Hearings Before the Subcomm. of the Senate Comm. on Appropriations*, 74th Cong., 2d Sess. 400 (1936) (statement of H.H. Bennett).

[71] Soil Conservation Service, U.S. Dep't of Agriculture, A STANDARD STATE SOIL CONSERVA-

Act provided for the creation of soil conservation districts as subdivisions of the state by majority vote of the land occupiers in the proposed district.[72] The district governing board would consist of five supervisors, three of whom were to be elected and two of whom were to be appointed by a state conservation committee.[73] The districts were authorized to: (1) carry out research, demonstration projects and erosion control operations; (2) enact and enforce land use regulations; (3) enter into contracts and agreements with land occupiers in order to carry out conservation plans; and (4) obtain lands by purchase or gift in order to carry out control operations or retire submarginal lands from production.[74]

There was some strong opposition to the Standard Act and the conservation district program.[75] However, in 1937 twenty-two states adopted district enabling legislation,[76] and by 1947 the remainder of the states and the then territories of Alaska and Hawaii had followed suit.[77] This rapid enactment by the states of soil conservation district laws resulted in part from various pressures exerted by USDA, including an amendment to the Flood Control Act of 1936[78] which required the states to enact legislation comparable to the

TION DISTRICT LAW (1936) [hereinafter referred to as STANDARD ACT]; *see also* D.H. SIMMS, *supra* note 21, at 75.

[72] STANDARD ACT, *supra* note 71, at §§ 3(1), 5(c), 5(e).

[73] *Id.* §§ 5(f), 6. The state conservation committee would be comprised of three to five members, including the state director of farm extension services, the director of the state experiment station, the state conservation commissioner and the commissioner of agriculture or state planning board head, as well as an additional member to be appointed by the Secretary of Agriculture upon invitation of the state committee. *Id.* § 4(a) and n. 5.

[74] *Id.* § 8. The Standard Act did not provide, however, for districts to have the power to tax nor incur bonded indebtedness nor to exercise the power of eminent domain. Without these powers it is difficult for districts to raise funds or act independently when carrying out large scale projects. Eminent domain power was initially granted by state law to districts in California and Arkansas. CAL. PUB. RES. CODE § 9252 (Deering 1944), but the power was later repealed; *see* CAL. PUB. RES. CODE § 9253 (Deering 1954); ARK. STAT. ANN. § 9-909(3) (1976). The power to tax was granted in Colorado and California. COLO. REV. STAT. § 35-70-109(2)(e) (1973); CAL. PUB. RES. CODE § 9501 (West 1977). *See* W.R. PARKS, SOIL CONSERVATION DISTRICTS IN ACTION 14 (1952).

[75] The most fervent opposition came from the agricultural colleges and Extension Service which viewed the Standard Act as another attempt by SCS to bypass the traditional relationship between farmers and the national government through the creation of soil conservation districts which, it was felt, would be little more than appendages of SCS. *See* R.J. MORGAN, *supra* note 17, at 58-64.

[76] G. BAKER *et al.*, *supra* note 33, at 197.

[77] D.H. SIMMS, *supra* note 21, at 77. *See also* Ferguson, *Nationwide Erosion Control: Soil Conservation Districts and the Power of Land Use Regulation*, 34 IOWA L. REV. 166 (1949). For a listing of the states see note 84, *infra*.

[78] Pub. L. No. 74-738, 49 Stat. 1570 (1936) (current version at 33 U.S.C. § 701b (1976)).

Standard Act before USDA would begin flood control investigations.[79] Another form of federal pressure was the authorization to SCS to differentiate the extent and kind of assistance given to states on the basis of the enactment and adequacy of their soil conservation district law.[80]

Generally, the enabling legislation of the states conformed to the provisions of the Standard Act.[81] However, two important differences appeared in a number of the state enactments. First, a majority of the enabling statutes provided for district boundaries to conform with county lines rather than with watershed boundaries, the approach favored by SCS.[82] County line organization resulted in the creation of substantially more districts than would have resulted from watershed boundary organization, and, consequently, increased administrative costs and bureaucracy. In addition, counties have often failed to cooperate with one another, leading to duplication and overlap of conservation efforts, inability to deal with the needs of an entire watershed and, sometimes, outright conflicts between programs.[83] Second, a number of states did not authorize districts to enact land use regulations as provided for in the Stan-

[79] R.J. MORGAN, *supra* note 17, at 64-65; E.B. NIXON, *supra* note 49, at 37, citing a letter from Secretary of Agriculture Wallace to President Roosevelt. For a discussion of the Flood Control Act of 1936, see text at notes 125-29, *infra*.

[80] Soil Erosion Act of 1935, 16 U.S.C. § 590(c) (1976); W.R. PARKS, *supra* note 74, at 26; *see also* PRINCIPLES AND PROCEDURES, SCS MANUAL No. 49210, September 21, 1940, at 1. Three categories of assistance were developed and the states were divided into three groups based on the adequacy of their district enabling legislation. The first two groups of states were given full assistance while the third was denied access to departmental equipment and planting materials. Initially, there had been three differing levels of assistance, but in 1938, Secretary of Agriculture Wallace forced SCS to extend full benefits to the second category as well as the first. The third group consisted of those states which had not, in the view of SCS, provided for effective enforcement of land use regulations. SCS felt that this differentiation of assistance policy was effective in persuading a number of states to adopt legislation closely paralleling the Standard Act. The policy was finally abandoned during World War II. W.R. PARKS, *supra* note 74, at 27; R.J. MORGAN, *supra* note 17, at 86-87; *but cf.* C. HARDIN, *supra* note 25, at 74.

[81] D.H. SIMMS, *supra* note 21, at 77.

[82] In fact, some of the states which originally adopted laws providing for watershed based districts soon changed over to county boundaries. *Id.* at 79; *see also* STANDARD ACT, *supra* note 71, at 7, n.7.

[83] A typical situation in which districts often work at cross-purposes is in the area of erosion and flood control. An upstream district might seek to clear and channelize a stream in an effort to increase flows and reduce flooding and erosion. The effect in downstream districts from the additional water might be increased flooding and bank erosion and perhaps damage to structures the downstream district had constructed to combat its flooding and erosion problems.

dard Act.[84] This lack of authorization may not have been too significant, however. Virtually none of those states which did provide a mechanism by which districts could adopt land use controls ever enacted such controls;[85] farmers have proven very reluctant to impose land use restrictions on themselves or others.[86] Had land use measures been more widely accepted, many of the lands suffering the effects of severe erosion could have been regulated, thereby obviating the need for extensive structural and treatment control measures.

c. The Present Status of the Conservation Operations Program

Despite the problems encountered in the establishment and operation of state soil conservation districts, their number grew rapidly.[87] By the early 1940's, the policy of the Conservation Operations

[84] STANDARD ACT, *supra* note 71 at § 9.

All of the 22 states which adopted enabling legislation in 1937 originally granted land use powers (Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Maryland, Michigan, Minnesota, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Carolina, South Dakota, Utah and Wisconsin); but by 1947, Indiana, Michigan and Pennsylvania had deleted the power from their statutes and Colorado and Oklahoma had made it much more difficult for districts to adopt land use regulations by amending their referendum procedures to require 75 and 90 percent approval, respectively, both up from 51 percent. In 1938 and 1939, California, Idaho and Iowa omitted land use powers from their legislation; but Alabama, Louisiana, Mississippi, Montana, Oregon, Tennessee, Texas, Vermont, Virginia, Washington and West Virginia provided for it. Of the 12 states enacting district enabling legislation between 1939 and 1945 (Arizona, Connecticut, Delaware, Kentucky, Maine, Massachusetts, Missouri, New Hampshire, New York, Ohio, Rhode Island and Wyoming), only Kentucky and Wyoming included land use powers. Neither Alaska nor Hawaii have granted land use powers. W.R. PARKS, *supra* note 74, at 149-51.

[85] According to the U.S. Council on Environmental Quality, although 27 states and Puerto Rico had authority for soil conservation districts to enact land use regulations, only two districts, one in Oregon and one in North Dakota, had such regulations in effect in 1972. U.S. COUNCIL ON ENVIRONMENTAL QUALITY, THIRD ANNUAL REPORT 171 (1972).

[86] R.B. HELD & M. CLAWSON, *supra* note 16, at 49; D.H. SIMMS, *supra* note 21, at 79; W.R. PARKS, *supra* note 74, at 151-59.

[87] The growth in the number of soil conservation districts has been impressive. Between 1936, when the district program began, and January 1, 1942, 653 districts had been organized and conservation plans had been prepared for 72,000 farms covering approximately 16 million acres. *Agriculture Department Appropriation Bill for 1943: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 77th Cong., 2d Sess. 936 (1942). By July 1, 1956, there were 2,709 districts covering approximately 1.5 billion acres. *Soil Conservation Districts—Status of Organization, by States. Approximate Acreage and Farms in Organized Districts*, 1 USDA SOIL CONSERVATION SERVICE (1956). Since 1956, growth in the number of districts has not been as rapid (2,962 districts as of July 1, 1973), but the land area has increased to approximately 2.2 billion acres. *Soil Conservation District—Status of Organization, by States. Approximate Acreage and Farms in Organized Districts*, 1 USDA SOIL CON-

Program permanently shifted away from reliance on demonstration projects[88] toward cooperation with soil conservation districts and, through the districts, toward increased contact with individual farmers and ranchers.[89]

To foster cooperation, USDA and the conservation districts may presently enter into memoranda of understanding which set out the general basis of their relationship and the conditions which the district must satisfy in order to receive assistance from any USDA agency.[90] Prior to entering into any agreement, however, the district must develop a district-wide program setting out long-range soil, water and resource use objectives.[91] Based on this long-range program, the memorandum of understanding then requires the district to develop a more detailed system for achieving erosion control through the formation of an annual district work plan.[92] Subse-

SERVATION SERVICE (1973).

Not all of the lands within district boundaries are under conservation plans, however; nor are all farmers and ranchers within districts district cooperators. As of June 30, 1976, SCS listed a total of 2,315,005 Conservation Operations Program district cooperators. These cooperators represent roughly 56 percent of the total farm and ranch units in the country, and have brought approximately 797 million acres into the program. To date, SCS has prepared conservation plans covering approximately 597 million acres for approximately 1.8 million of the cooperators. *Status of Progress Items for Fiscal Year 1976 and Cumulative as of June 30, 1976 — National Totals*, 2 USDA SOIL CONSERVATION SERVICE, MANAGEMENT EVALUATION DIVISION (1977); 1977 GAO REPORT, *supra* note 53.

[88] By 1944, the demonstration projects of the Conservation Operations Program had been terminated. D.H. SIMMS, *supra* note 21, at 19.

[89] This more personalized approach, focusing as it did on individual farmers and ranchers relied heavily on the development, during the closing years of the 1930's, of a land use capability classification system. The system, which is still in use today utilizes eight land use categories applicable to individual parcels. Such factors as slope of the land, soil type, erosion history, vegetative cover and general susceptibility of the land to erosion, R.B. HELD & M. CLAWSON, *supra* note 16, at 65-66, are examined in order to give a rating to the parcel involved. From the rating, the best use for the parcel is determined. Uses range from land suitable for continuous cultivation with ordinary good farming methods (Class I), to land which should not be cultivated even after the introduction of extreme conservation practices. These lands may be suitable only for recreation, wildlife or watershed protection (Class VIII). D.H. SIMMS, *supra* note 21, at 31-34. For a detailed discussion of the system, *see* R.B. HELD & M. CLAWSON, *supra* note 16, at ch. 6.

[90] *See* 7 C.F.R. § 660.3 (1977). The agency most likely to be involved is SCS.

[91] *Id.* § 660.3(b). If the district-wide long-range program is deemed inadequate by the USDA and it is usually SCS which does the evaluation, the Department can refuse to cooperate with the district. In actual practice, however, very little has been required in the way of a district program. R.J. MORGAN, *supra* note 17, at 270-71.

[92] 7 C.F.R. § 660.3(b) (1977). Federal control over the components of district work plans has been limited and indirect. If an agency, usually SCS, determines that a district plan or its effectuation is inadequate, rather than directing the district to change, the agency simply refuses to continue its cooperation with the district. W.R. PARKS, *supra* note 74, at 33;

quently, the agency of USDA providing assistance to the district, usually SCS, enters into a supplemental memorandum with the district indicating the type of assistance which the agency will provide.[93]

Once both memoranda have been signed SCS provides technical assistance through the district to individual farmers and ranchers.[94] First, SCS classifies the subject land according to a capability classification system.[95] Following classification, the land occupier and SCS technical staff devise a conservation plan which sets out the appropriate uses for the land and the conservation practices necessary to prevent excessive erosion.[96] Finally, SCS technicians assist in the execution of the conservation plan. For example, SCS staff may provide design and construction monitoring assistance for terraces, dams or other structures; may counsel landowners on proper vegetative cover or seeding methods; may contribute planting stock; or may loan heavy equipment to the farmer which he could not otherwise afford.[97]

Agriculture Department Appropriation Bill for 1945: Hearings Before the Subcomm. of the Senate Comm. on Appropriations, 78th Cong., 2d Sess. 10 (1944). However, as was the case with the district long-range programs, see note 91, *supra*, even this indirect control is rarely applied; the SCS prefers instead to rely on its local staff technicians and conservationists to guide the development of acceptable work plans. W.R. PARKS, *supra* note 74, at 30-31, 46; R.J. MORGAN, *supra* note 17, at 271.

[93] 7 C.F.R. § 660.3(c) (1977).

[94] Although not a strict requirement, the assistance is generally available only to lands covered by district-farmer agreements which have been reviewed by SCS. W.R. PARKS, *supra* note 74, at 35-39; Personal communication, W.B. Paterson, Nebraska Assistant State Conservationist (November 10, 1977).

In these district-farmer agreements, the farm/land owner promises to use his land in accordance with its capabilities. However, in recent years SCS has regarded the landowner's promise as no more than a "gentleman's agreement," and a farmer who refuses to abide by the land use classification given his land is not necessarily excluded from SCS assistance. In the early history of farmer agreements, the agreement form contained provisions by which the cooperating landowner could be required to reimburse the district for the value of labor and materials used on his farm if he intentionally failed to fulfill his obligations. W.R. PARKS, *supra* note 74, at 35-39.

[95] See note 89, *supra*.

[96] For discussion of various aspects of the conservation plan practice *see Assistance Available from the Soil Conservation Service*, USDA AGRICULTURAL INFORMATION BULLETIN 345 (1970); *Agriculture and Related Agencies Appropriations, FY 1977: Hearings Before the Subcomm. of the Senate Comm. on Appropriations*, 94th Cong., 2d Sess. 783, 792, 795 (1976) [hereinafter referred to as *Senate Hearings on Agricultural Appropriation, FY 1977*]; and D.H. SIMMS, *supra* note 21, at 36-37. As of June 1975, 44 percent of the operating units within districts had received SCS planning assistance.

[97] The districts themselves have also been sources of considerable assistance to farmers and ranchers through such things as heavy equipment loans, provision of planting stock at re-

Although the main thrust of the Conservation Operations Program has been the provision of technical assistance to farm and ranch district cooperators,[98] the program has also encompassed a variety of other activities, such as conducting all USDA soil survey work;[99] providing all SCS cartographic services,[100] snow survey and water supply forecasts;[101] and operating plant materials centers for the development, testing and release of plants needed for SCS conservation programs.[102] SCS through the Conservation Operations Program also has provided assistance to municipal and county officials and planning bodies, helping them solve land use and erosion problems,[103] and has supervised a national program of land inventory and monitoring.[104] Moreover, USDA through the program has provided technical services to participants in the Agricultural Conservation Program[105] for the development of conservation plans, site selection and layout and for the establishment of specific conservation practices on a cost-share basis with farmers and ranchers.[106]

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duced or no cost and guidance in finding qualified contractors or obtaining financial assistance. D.H. SIMMS, *supra* note 21, at 83.

[98] The Conservation Operation Program's appropriations from 1935 to 1977, total approximately $3.4 billion with the majority of funds going into the technical assistance-conservation plan aspect of the program. 1977 GAO REPORT, *supra* note 53, at 3. *See also Senate Hearings on Agriculture Appropriation, FY 1977, supra* note 96, at 790-91; *Agricultural Appropriations for 1965: Hearings Before the Subcomm. of the Senate Comm. on Appropriations*, 88th Cong., 2d Sess. 994 (1964); *Agriculture Department Appropriation Bill for 1943: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 77th Cong., 2d Sess. 933 (1942); BUDGETS OF THE U.S. GOVERNMENT (1950-1959) (Soil Conservation Service Appropriations, Current Authorizations).

[99] 7 C.F.R. § 661.1(b) (1977). As of June 30, 1976, USDA soil surveys have covered a total of 1,003,550,757 acres. *Status of Progress Items for Fiscal Year 1976 and Cumulative as of June 30, 1976—National Totals*, 2 USDA, SOIL CONSERVATION SERVICE, MANAGEMENT EVALUATION DIVISION, (1977) [hereinafter cited as *Status of Progress Items 1976*].

[100] 7 C.F.R. § 611.20 (1977).

[101] *Id.* § 612.

[102] *Id.* § 613.

[103] *Assistance Available from the Soil Conservation Service* 6 USDA AGRICULTURAL INFORMATION BULLETIN 345 (1970) [hereinafter cited as *Assistance Available from SCS*].

[104] The purpose of the inventory and monitoring is:

> [T]o provide soil, water and related resource data for land conservation, use and development, for guidance of community development, for identification of prime agricultural producing areas that should be protected, for use in protecting the quality of the environment, and to issue land inventory reports of resource conditions.

Senate Hearings on Agriculture Appropriation, FY 1977, supra note 96, at 783.

[105] For a discussion of the Agricultural Conservation Program, see text at notes 180-237, *infra*.

[106] As of June 30, 1976, SCS has prepared plans serving as the foundation for Conservation Program agreements covering a total of 4.2 million acres. CONSERVATION HIGHLIGHTS, SUMMARY

In spite of some impressive statistics,[107] the Conservation Operations Program was not favorably cited in a recent soil conservation report by the Government Accounting Office (GAO).[108] The report criticized SCS for its passive approach in carrying out the Conservation Operations Program. Rather than ensuring that federal funds are spent where they would be most beneficial by systematically seeking out farms and ranches with severe erosion problems, SCS does not act until a land occupier contacts the agency.[109] GAO also concluded that SCS technicians spend too much time preparing overly elaborate conservation plans, many of which are quickly outdated or ignored by the land occupier when making land use decisions.[110] In fact, less than half of the cooperators visited by GAO investigators were using their plans as a basis for carrying out conservation measures.[111] In addition, due to the heavy workload necessitated by the preparation of new plans, technicians were unable to devote adequate time for revising outmoded plans or maintaining contacts with program cooperators in order to encourage them to implement or continue conservation practices recommended in their original plans.[112] However, most disturbing was the fact that the GAO review found no evidence indicating that cooperators as a group carried out more effective soil conservation practices than noncooperators, or that there were less soil losses on their lands than on noncooperators' lands.[113] The report also found that employees of different agencies of USDA, such as the Extension Service, gave cooperators advice differing from that given by SCS technicians, and that certain federal programs and policies conflicted with the aims of the Conservation Operations Program.[114] Overall, the report concluded that, because of these many deficiencies, the Conservation Operations Program had not been as effective in controlling soil erosion as it should have been.[115]

OF ACTIVITIES OF THE SOIL CONSERVATION SERVICE FOR FISCAL YEAR 1976, at 4 [hereinafter cited as CONSERVATION HIGHLIGHTS 1976].

[107] See note 177, *infra*.

[108] *See* 1977 GAO REPORT, *supra* note 53.

[109] *Id.* at 10-11.

[110] *Id.* at 11-14.

[111] *Id.* at 25.

[112] *Id.* at 15.

[113] *Id.* at 15-16. The report states that most of the cooperations visited had soil losses well above the maximum tolerable level for sustaining the productivity of the land.

[114] *Id.* at 17, 21, and 25. The report recommended improvement of interagency coordination and resolution of program conflicts by the appropriate Congressional committees. *Id.* at 26.

[115] *Id.* at 25.

2. Additional Soil Conservation Service Programs

At the same time SCS was shifting and expanding its soil erosion program to accommodate the new soil conservation districts, its responsibilities in other areas were also growing. Gradually, SCS evolved from an agency concerned almost exclusively with the control of soil erosion, to one with responsibility for a whole gamut of land and water management concerns, especially as those concerns related to increasing farm income and productive capacity.[116] For example, the Water Facilities Act of 1937[117] gave SCS major responsibility for much of the USDA water conservation effort. Pursuant to that program SCS provided technical and financial assistance to farmers and ranchers in the seventeen western states to aid the development and expansion of water supplies, primarily for irrigation purposes.[118] Under the Cooperative Farm Forestry Act of 1937,[119] SCS operated a farm forestry program to aid in increasing farmers' income and conserving water.[120] Also in 1937, SCS received responsibility for drainage and irrigation investigation,[121] and in 1938 SCS assumed control over the administration of the federal submarginal land purchase program,[122] a program which involved the purchase of lands not fit for cultivation and their subsequent conversion to more suitable uses such as grazing or forestry.[123]

[116] *See* R.B. HELD & M. CLAWSON, *supra* note 16, at 69-75.

[117] Pub. L. No. 75-399, 50 Stat. 869 (1937).

[118] Activities under the Act were to be limited to arid and semiarid regions. The program was a cooperative undertaking by SCS, the Farm Security Administration and the Bureau of Agricultural Economics. *Id.;* D.H. SIMMS, *supra* note 21, at 20; G. BAKER, *et al., supra* note 33, at 199. Full responsibility was placed in the Farm Security Administration in 1942. *Id.*

[119] Pub. L. No. 75-95, 50 Stat. 188 (1937).

[120] *Id.* Responsibility for this program was transferred back to the Forest Service in 1945. *Department of Agriculture Appropriations for 1964: Hearings Before the Subcomm. of the House Comm. on Appropriations,* 88th Cong., 1st Sess. 1017 (1963) [hereinafter referred to as *House Hearings — Agriculture Appropriations 1964*].

[121] This responsibility was formerly undertaken by the Bureau of Agricultural Engineering. *Id.* at 1016.

[122] *Id.;* G. BAKER, *et al., supra* note 33, at 99.

[123] M.R. BENEDICT, *supra* note 32, at 325. The continuation of the program was authorized under Title III of the Bankhead-Jones Farm Tenant Act of 1937, and this was the authorization under which SCS assumed control. Pub. L. No. 75-210, 50 Stat. 522, 525 (1937). Although this was a potentially useful erosion control program, SCS made little use of the authority given them. M.R. BENEDICT, *supra* note 32, at 325. Land purchases under the program declined rapidly during the war years, and by 1947 no land purchases were being made. REPORT OF THE CHIEF OF THE SOIL CONSERVATION SERVICE 1935-1950, U.S. SOIL CONSERVATION SERVICE, at 77 (1942); at 32 (1943); at 33 (1944); at 39 (1945); at 42 (1947). In subsequent years, only minor purchases were made, Congress apparently feeling that lands should remain primarily

This shift from an agency concerned exclusively with erosion control to one also concerned with land management, increased production and farm profits, aided SCS. Increasing production and profits were prime farm goals and, by assisting farmers in achieving those goals, SCS formed a powerful constituency. However, from a national perspective this change, unfortunately, reduced the emphasis the agency placed on erosion control and often resulted in conflicts of interest where long range erosion control benefits competed with demands for short range production increases.[124] Three programs which exemplified this trend were the Small Watershed Program, the Great Plains Conservation Program and the Resource Conservation and Development Program.

a. The Small Watershed Program

The most important addition to SCS responsibilities during the late 1930's was the flood prevention program. The framers of the Omnibus Flood Control Act of 1936[125] recognized that flooding and soil erosion were related problems and authorized the Secretary of Agriculture to conduct investigations and institute measures for runoff and waterflow retardation and the prevention of soil erosion.[126] Within USDA the flood control program consisted of a cooperative effort between SCS, the Bureau of Agricultural Economics and the Forest Service. The program sought to supplement the work on major rivers done by the Army Corps of Engineers by dealing with flood problems on the smaller upstream tributaries of these principal waterways — the so-called Small Watershed Program.[127]

in private ownership and thus appropriating little money for purchases. Only 8,930 acres were purchased in 1948, and reports for 1949 and 1950 do not indicate any purchases were made. *Id.* at 26 (1948); at 52-54 (1949); at 52-54 (1950). After 1950, the program consisted primarily of rehabilitating and managing land already purchased. Most of the land was placed under the control of local conservation districts which were given responsibility for overseeing the productive use of the lands for grazing, forestry or recreation.

The amount of land administered by SCS during the life of the program hovered around 7 million acres, although over 11 million acres were actually purchased under the program. The disparity arises because a good deal of the land acquired was transferred to the War Department and Interior Department, or returned to private ownership. *Id.* at 37-39 (1945); at 26 (1948); at 52 (1949). Responsibility for the program was transferred from SCS to the Forest Service in 1954. *House Hearings—Agriculture Appropriations 1964, supra* note 120, at 1019.

[124] *See* R.B. HELD & M. CLAWSON, *supra* note 16, at 72.

[125] Pub. L. No. 74-738, 49 Stat. 1570 (1936).

[126] *Id.* § 2, 49 Stat. at 1570. However, the Act did not provide for construction of any works of improvement.

[127] R.B. HELD & M. CLAWSON, *supra* note 16, at 75; *House Hearings—Agriculture Appropriations 1964, supra* note 120, at 1015.

Despite the passage of the Flood Control Act in 1936, Congress did not appropriate any money for improvement projects until the conclusion of World War II.[128] Consequently, during the first years of the program the activities of SCS were largely confined to conducting surveys and debating with other agencies about the effectiveness and economic feasibility of the program.[129]

From the end of World War II until 1954, considerable rivalry existed between SCS and the Army Corp of Engineers over flood control appropriations and over control of the Small Watershed Program. For SCS, the Small Watershed Program not only provided a valuable addition to its soil conservation program, but also supplied a potential boost for its "political program." By increasing the value and productivity of lands previously restricted in their use due to flooding, as well as by providing other benefits under the program, SCS felt it could win the goodwill and allegiance of a significant number of farmers and ranchers and, hopefully, increase the level of support for its entire conservation program.[130]

The political maneuvering of SCS ultimately resulted in the Watershed Protection and Flood Prevention Act of 1954,[131] which gave SCS flood control jurisdiction over watersheds or sub-watersheds not exceeding 250,000 acres and not involving a single structure providing more than five thousand acre feet of total storage capacity.[132] The law also permitted SCS to allocate federal funds to farmers in order to partially reimburse them for the cost of flood control construction, although this restriction has since been liberalized to allow the expenditure of federal funds for a portion of fish, wildlife

[128] In late 1944, Congress approved plans for projects on 11 watersheds covering 31 million acres of land in 12 states, Flood Control Act of 1944, 58 Stat. 887, 889 (1944); and following the war funds were appropriated. R.B. HELD & M. CLAWSON, *supra* note 16, at 75; *House Hearings—Agriculture Appropriations 1964, supra* note 120, at 1017. These projects consisted of land treatment measures and did not involve any structures. Lea & Mattson, *Evolution of the Small Watershed Program,* [1975] AGRICULTURAL ECONOMICS REPORT 262 (Economic Research Service) [hereinafter cited as *Evolution of Small Watershed Program*].

[129] R.B. HELD & M. CLAWSON, *supra* note 16, at 75; *Agricultural Department Appropriation Bill for 1940: Hearings Before the Subcomm. of House Comm. on Appropriations,* 76th Cong., 1st Sess. 1043 (1939) (statement of Assistant SCS Chief Meyer).

[130] R.B. HELD & M. CLAWSON, *supra* note 16, at 76, 79.

[131] Pub. L. No. 83-566, 68 Stat. 666 (1954) (current version at 16 U.S.C. §§ 1001-1009 (1976)).

[132] *Id.* An acre foot is a unit of volume equal to a parallelogram with a base of an acre and a height of a foot. These limitations have been liberalized over the years, however, so that currently structures can provide no more than 12,500 acre feet of floodwater detention capacity, and 25,000 acre feet total capacity. 16 U.S.C. § 1002 (1976).

and recreational development costs as well.[133] In addition, the Act authorized SCS to make financial, planning and other assistance available to local organizations in order to help them carry out structural improvements for flood protection, irrigation and drainage and land treatment.[134]

The 1954 Act and its amendments evidence a change in emphasis from the Flood Control Act of 1936,[135] which was enacted primarily as a means of dealing with the problems of soil erosion and mitigating damages from floods.[136] While prevention of erosion and flood damage are still important aspects of the 1954 Act, these objectives have been restated in terms of improving the quality of the environment and contributing to community development by promoting the conservation, development, utilization and disposal of water and by preventing or minimizing damage from erosion, floods, and sediment.[137] In addition to watershed protection, authorized project purposes now include the conservation and proper utilization of land, flood prevention, agricultural water management, public fish and wildlife conservation, municipal and industrial water supply, water quality management, ground water supply and agricultural pollution control.[138] Thus, fostering more productive uses of flood plains and increasing farm income, although important aims even of the 1936 legislation, received more explicit recognition as objectives of the 1954 Act.[139]

The SCS Small Watershed Program also involves more than just structural measures; land treatment[140] is a very important component of every project.[141] In fact, federal assistance for a project is conditioned upon the local sponsor's "obtain[ing] agreements to

[133] *Id.* § 1004(1) (1976). The original limitation on the expenditure of federal funds to the costs of flood control had resulted in the program being restricted almost totally to flood prevention.

[134] *Id.* § 1003 (1976). *Evolution of Small Watershed Program, supra* note 128, at 1-2.

[135] Pub. L. No. 74-738, 49 Stat. 1570 (1936).

[136] *Id.* § 701a.

[137] 7 C.F.R. § 622.3(a) (1977).

[138] *Id.* § 622.2(a).

[139] Mattson, *Effect of the Small Watershed Program on Major Uses of Land*, 1975 Economic Research Service: Agricultural Economic Report 279 (1975) [hereinafter cited as *Effect of the Small Watershed Program*].

[140] Land treatment refers to land use and cropping practices such as contour plowing, stripcropping, terracing, minimum tillage and increasing vegetative cover.

[141] *See* CONSERVATION HIGHLIGHTS 1976, *supra* note 106, at 3. The Service was authorized to provide cost share assistance for the implementation of land treatment measures equal to the rate of assistance for similar practices under existing national programs. 16 U.S.C. § 1003(4) (1970).

carry out recommended soil conservation measures and proper farm plans from owners of not less than 50 percent of the lands situated in the drainage area above each retention reservoir."[142] Every watershed work plan must include land treatment measures for watershed protection, soil erosion prevention and the conservation and proper utilization of all lands within the watershed.[143] Prior to 1965, it was apparently not necessary that the land situated above control structures actually be treated, but only that a plan be developed;[144] however, SCS now requires that not less than 75 percent of the needed land treatment measures be in place, or installed concurrently with the control structure on sediment source areas which, if uncontrolled, would require a material increase in the cost of construction, operation or maintenance of the structure.[145]

By the end of fiscal year 1976, 425 small watershed projects had been completed, 1731 authorized for planning and 1157 approved for construction.[146] Moreover, according to SCS figures, more than

[142] 16 U.S.C. § 1004(5) (1970). Apparently Chief Bennett did not believe this 50 percent requirement went far enough, but felt rather that all land above a control structure should be treated. R.J. MORGAN, *supra* note 17, at 188. Land not classified as farmland by the United States Bureau of the Census will not be included in determining the 50 percent requirement unless soil conservation measures need to be applied on the land. 7 C.F.R. § 622.15(b) (1977).

A number of other conditions are imposed on local sponsors of a project, including that they acquire the lands, easements or rights of way needed in connection with the works of improvements; agree to provide an equitable portion of the costs of the project; make satisfactory arrangements for the operation and maintenance of the works installed; and acquire the necessary water rights. 16 U.S.C. § 1004 (1970).

[143] 7 C.F.R. §§ 622.12, 622.33(b) (1977).

[144] R.J. MORGAN, *supra* note 17, at 188.

[145] 7 C.F.R. § 622.15(c) (1977).

[146] CONSERVATION HIGHLIGHTS 1976, *supra* note 106.

In the first 16 years of the program from 1954 to 1970, Congress approved projects costing a total of $2.25 billion, of which slightly less than half was provided from program funds, with the remainder paid by local and other sources. Cotner, *Rural Land Use and the Environment—Programs and Activities of the U.S.D.A.*, ECONOMIC RESEARCH SERVICE: STATEMENT BEFORE AIR QUALITY-WATER POLLUTION ADVISORY BOARDS 38 (1972) [hereinafter cited as *Rural Land Use*]. Actual expenditures under the program are difficult to determine due to the method which has been used for listing SCS expenditures in the federal budgets. From 1954 to 1968, expenditures for watershed protection and flood prevention are listed separately without designating which act provided for the expenditures. In 1968, the title "Watershed Works of Improvement" was substituted for "Watershed Protection," and for the years 1971 to 1976, the titles were apparently combined under "Watershed Protection and Flood Prevention Operations." Since the listing "Flood Control" first appears in 1946, it seems reasonable to assume that that listing consists of expenditures under the Flood Control Act of 1944. Pub. L. No. 78-534, 58 Stat. 887 (1944). 1954 is the first year expenditures under "Watershed Protection" are listed, so apparently that heading contains the expenditures under the Watershed Protection and Flood Prevention Act of 1954. Pub. L. No. 83-780, 68 Stat. 1256 (1954). In any event, total expenditures for flood control and watershed protection from 1946 (the

forty-seven thousand conservation plans covering over eight million acres have been prepared for land occupiers under the 1954 Act.[147] However, these statistics by themselves do not indicate the number of plans actually implemented, or the number of acres adequately treated throughout the program's history.[148] The value of the Small Watershed Program from a soil conservation point of view depends largely on the degree of success the program has had in bringing about the use of sound conservation practices on lands in the project areas. Although at least one writer has indicated that the program has no doubt hastened the adoption of soil conservation practices,[149] unfortunately, no systematic study appears to have been done.[150] Thus, the true impact of the Small Watershed Program remains unclear.

b. The Great Plains Conservation Program

Another major soil conservation undertaking added to the duties of SCS is the Great Plains Conservation Program.[151] This is a special program designed to help prevent or reduce the harmful effects of erratic climate in designated portions of ten Great Plains states

first year the budget contains a listing for that function) to 1976 were $1,674,272,396. BUDGETS OF THE U.S. GOVERNMENT (1948-1978).

The lands within the 1093 projects approved for operations as of June 1974 covered 3.6 percent of the nation's total land area and roughly 9.5 percent of the area deemed by USDA to be in need of projects. The estimated average total installation cost of the 1093 approved projects was $2,202,440 each. USDA, on the basis of its 1967 National Inventory of Soil and Water Conservation Needs, indicated a need for 8,925 such projects covering approximately 40 percent of the nation's total land area. ECONOMIC RESEARCH SERVICE, NATURAL RESOURCES ECONOMICS DIVISION, INVENTORY OF BENEFITS, COSTS AND OTHER DATA FOR P.L. 566 WATERSHED WORK PLANS, II, Table 9 (1976) [hereinafter cited as INVENTORY OF DATA].

[147] *Status of Progress Items* 1976, *supra* note 99, at 1. These figures are somewhat misleading, however, because they are net figures after cancellations. Apparently more plans have been prepared.

[148] *Id.* Although SCS has the power to require installation of land treatment measures, see text at notes 141-45, *supra*, the extent to which that power has been exercised on a nationwide scale remains unclear.

[149] *Effect of Small Watershed Program, supra* note 139, at 29.

[150] The only collected statistics available concerning land treatment measures on project areas show that the costs of technical assistance and application of the treatment measures comprised an average of 26.3 percent of the total cost of the 1093 projects approved through June, 1974. INVENTORY OF DATA, *supra* note 146, at Table 7. Structural and land treatment measures together are claimed to have produced reductions of 67.6 percent in reservoir sedimentation, 80.2 percent in other sediment damage, 69.3 percent in flood plain scour, 83.8 percent in streambank erosion, 87.0 percent in gully erosion and a total reduction in all flood damage of 79.0 percent. *Id.*

[151] 16 U.S.C. § 590(p) (1970).

experiencing serious wind erosion problems.[152] Under the program, SCS provides technical assistance and cost-sharing payments to land occupiers who agree to change the use of their lands and/or to carry out approved soil and water conservation practices.[153] However, the Conservation Program has other important purposes as well. In addition to preventing excessive erosion, the program seeks to "achieve a more stable agriculture, more dependable source of income, and a more satisfactory livelihood for the people of the region."[154] Moreover, the program was amended in 1969 to include measures for enhancing fish, wildlife and recreation resources, for promoting the economic use of land and for reducing agriculturally-related pollution.[155]

Under the Great Plains Conservation Program, three to ten year contracts between SCS and the land occupier limit the federal cost share for any one conservation practice to 80 percent of its total cost, or an overall ceiling of $25,000 for any one contract.[156] As of June 30,

[152] *Id.* at § 590(p)(b)(1). The states are Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas and Wyoming. For a discussion of the unique problems of agriculture in the Great Plains region, *see* R.B. HELD & M. CLAWSON, *supra* note 16, at 79-83.

Although the main impetus for the program was concern for wind erosion, water erosion control is also included. Obviously, many control techniques which will reduce the impact of wind erosion will also cut down on water erosion.

[153] 16 U.S.C. § 590(p) (1970); PROGRESS IN MEETING IMPORTANT OBJECTIVES OF THE GREAT PLAINS CONSERVATION PROGRAM COULD BE IMPROVED, 6 REPORT TO THE CONGRESS BY THE COMPTROLLER GENERAL OF THE UNITED STATES (1973) [hereinafter cited as 1973 GAO REPORT].

[154] *Great Plains Conservation Program: Hearings Before the Subcomm. on Conservation and Credit of the House Comm. on Agriculture*, 91st Cong., 1st Sess. 23 (1969) (statement of SCS Associate Administrator, Norman Berg) [hereinafter referred to as *House Hearings on GPCP*, 1969].

[155] 16 U.S.C. § 590(p)(b)(1)(a), (b), (c) (1970). *See* 1977 GAO REPORT, *supra* note 53, at 48.

[156] 1973 GAO REPORT, *supra* note 153, at 6. Authorized rates for federal assistance range from 50 to 80 percent of the total installation costs, with the average assistance amounting to approximately 65 percent of the total. *Rural Land Use, supra* note 146, at 32. The authority to enter into cost share contracts extends until December 31, 1981. 16 U.S.C. § 590(p) (1976). Expenditures for the Great Plains Conservation Program from 1958 to 1976 totaled $242,078,000. BUDGETS OF THE U.S. GOVERNMENT (1960-1978). Appropriations amounted to $308,262,850 through 1977. B & F DIV., SOIL CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, ESTIMATE—APPROPRIATIONS TO THE SCS (1976).

The legislative history of the Act creating the Conservation Program indicates that erosion control in the region was to be accomplished primarily by converting lands unsuited for cultivation to other uses and by reseeding depleted rangeland. USDA, in recommending passage of the Act, indicated that approximately ninety-five percent of the funds expended would be applied toward these two control methodologies. 1977 GAO REPORT, *supra* note 53, at 47. However, 33 different conservation practices have been approved for funding under the

1976, over fifty-one thousand contracts had been entered into with farmers and ranchers, covering more than ninety-four million acres.[157]

While the Conservation Program has undoubtedly made a contribution to the reduction of soil erosion,[158] a 1973 GAO report[159] leveled considerable criticism at the program for its slow rate of progress and general ineffectiveness. When the program originated, estimates were that the Great Plains region contained roughly ten to fourteen million acres of unsuitable cropland which needed to be taken out of production, and six million acres of badly depleted range which needed to be reseeded.[160] However, as of June 30, 1972, fifteen years after the program was first funded, only 3.6 million acres had been converted or reseeded, and, according to GAO estimates, only 8.3 million acres will be treated or contracted for by the time the program is to expire in 1981.[161] In addition to citing this lack of progress, the 1973 GAO report also criticized the system used by SCS for allocating the program's cost-sharing funds because it did not ensure the assignment of highest priority for control efforts aimed at areas having the most serious erosion problems.[162] The report further noted that the federal commodity price supports program conflicted with the Conservation Program because it provided

Act, and a number of them are directed at increasing production and preventing further deterioration of lands used for production. *See Rural Land Use, supra* note 146, at 32; 1977 GAO REPORT, *supra* note 53, at 49; R.B. HELD & M. CLAWSON, *supra* note 16, at 85. The 33 approved conservation practices are set out in 7 C.F.R. § 631.11 (1977).

[157] Of these contracts, 37,009 have been terminated, which means that a total of 60,772,430 acres have gone through the program. *Status of Progress Items 1976, supra* note 99, at 2; CONSERVATION HIGHLIGHTS 1976, *supra* note 106, at 3.

[158] *See* R.B. HELD & M. CLAWSON, *supra* note 16, at 85.

[159] 1973 GAO REPORT, *supra* note 153.

[160] *Great Plains Conservation Program: Hearings Before the House Comm. on Agriculture,* 84th Cong., 2d Sess. 12-13 (1956).

[161] 1973 GAO REPORT, *supra* note 153, at 10. The magnitude of the job yet to be done in this region was indicated during the 1969 hearings on amendments to the Great Plains Conservation Program legislation when the SCS representative stated that the region contained 110.5 million acres of cropland of which only 43 million acres were adequately treated and 215 million acres of range of which only 91 million acres had been adequately treated. Included within these lands were 5.5 million acres of cropland which needed to be converted to permanent vegetative cover and 12.5 million acres of rangeland which needed reseeding. These figures referred to general treatment needs and do not necessarily refer to the lands at which the Conservation Program is specifically directed. *House Hearings on GPCP, 1969, supra* note 154, at 24.

[162] 1973 GAO REPORT, *supra* note 153, at 15.

incentives for farmers to continue cropping on lands unsuitable for cultivation.[163]

A 1977 GAO report continued the earlier criticism of SCS progress under the Great Plains Program. During the years since the 1973 report, the amount of land reseeded or converted to vegetative cover had risen to 4.3 million acres, only 27 percent of the sixteen million acre goal.[164] In addition to this lack of progress in land treatment, much of the treatment which had occurred was of questionable value. The 1977 study found that roughly 45 percent of the program's funds had been spent on cost-share payments for practices which, although popular with land occupiers because of their economic benefits, were not considered high priority for controlling soil erosion.[165]

Perhaps the most significant finding of the 1977 report, however, was that much of the land which had been seeded into permanent vegetative cover was converted back into cropland at the expiration of the contract period. Once the contract period has terminated a land occupier may freely destroy or modify the cost-share practice which he had employed.[166] In recent years high grain prices, low livestock prices and commodity price support programs have provided incentives for program cooperators to reconvert pasture into cropland once a contract expires.[167] The GAO team reviewed expired contracts and found that almost 50 percent of the cooperators had reconverted land which had been seeded, the reconverted land involving approximately 26 percent of the land covered by the expired contracts. In spite of this practice, SCS has employed no policy of systematically contacting farmers with expired contracts to encourage them to maintain treated land.[168]

c. The Resource Conservation and Development Program

The most recent example of the SCS trend away from being solely

[163] *Id.* at 22.

[164] 1977 GAO REPORT, *supra* note 53, at 48. In fact, SCS figures indicated a decline in the number of acres treated during the three year period, from 285,000 acres in fiscal 1973, to only 181,000 acres in fiscal 1975. *Id.*

[165] *Id.* at 49-50. The 1977 Report, continuing a theme from the 1973 Report regarding expenditure priorities, questioned the wisdom of SCS policy in waiting for potential cooperators to contact the agency rather than actively seeking out occupiers of lands with serious erosion problems. *Id.* at 55.

[166] 7 C.F.R. §§ 631.8, 631.10 (1978).

[167] *Id.* at 53; *see also* 1973 GAO REPORT, *supra* note 153, at 22.

[168] 1977 GAO REPORT, *supra* note 53, at 53.

concerned with soil erosion and toward emphasizing improvement of the economic position of farmers is the Resource Conservation and Development Program.[169] This program represents a cooperative effort between SCS and several other federal agencies.[170] Carried out on a project basis, the program utilizes local sponsors such as soil conservation districts who, acting with USDA assistance, prepare master plans identifying specific measures which may qualify for federal financial and technical assistance. Measures eligible for both kinds of assistance include land stabilization and treatment of critical erosion areas; flood prevention measures, including structural measures; fish, wildlife and recreational development; irrigation and drainage improvements; and land and water management for control of agricultural pollution.[171] In addition, the program seeks to stimulate employment and economic opportunities by encouraging local groups to sponsor measures for development, improvement, conservation and utilization of an area's natural resources. Further goals include adjustments in land use and ownership to improve the economic stability of family farms; shifts in land use from production of crops in oversupply to uses for which there is an unmet demand; acceleration of the application of soil, water and plant conservation measures; and general enhancement of the economy of the nation.[172] SCS believes that the greatest opportunities for this program lie in those locations where, due to complex conservation and land use problems, the amount of assistance normally provided soil conservation districts is inadequate to bring about significant conservation progress.[173]

[169] 16 U.S.C. § 590a (1976); 7 U.S.C. §§ 1010-1011 (1970). The program was authorized in The Food and Agriculture Act of 1962. Pub. L. No. 87-703, 76 Stat. 605 (1962).

[170] These agencies include the Forest Service, the Farmers Home Association, the Federal Extension Service and the Economic Research Service. *Id.*

[171] *Rural Land Use, supra* note 146, at 40.

[172] *House Hearings—Agriculture Appropriations 1964, supra* note 120, at 1008.

[173] Areas with underdeveloped natural resources are viewed as particularly appropriate. *Agricultural Appropriations for 1965: Hearings Before the Subcomm. of the Senate Comm. on Appropriations,* 88th Cong., 2d Sess. 1047 (1964).

As of June 30, 1976, a total of 33,018 Resource Conservation and Development (RC & D) measures had been adopted by program participants, 10,425 of which had been completed. A total of 10,782 conservation plans had been prepared covering 2,688,611 acres. Detailed soil surveys had been prepared for 7,630,005 acres, and an additional 2,325,568 acres had been covered by reconnaissance surveys. *Status of Progress Items 1976, supra* note 99. A total of 168 project areas had been authorized for assistance, comprising a total of 704,470,000 acres. CONSERVATION HIGHLIGHTS 1976, *supra* note 106, at 3, 5. Program expenditures from 1964 to 1976, were $146,424,000. BUDGETS OF THE U.S. GOVERNMENT (1966-1978).

To date no systematic evaluation of the contribution of the Resource Conservation and Development Program toward the prevention of soil erosion has been undertaken. However, in light of the stated program objectives,[174] and with the aid of SCS figures, some tentative conclusions can be drawn. Although prevention of soil erosion undoubtedly comprises a part of this program, SCS figures show that few Resource Conservation and Development measures aimed primarily at preventing erosion have been implemented.[175] Apparently, in keeping with the stated objectives of increasing employment and economic opportunities in rural areas, erosion control has assumed a lower priority than economic development under the Resource Conservation and Development Program. Thus, in spite of its control by SCS, this program has served more as a community or regional development program than as a soil conservation effort.

SCS controls a wide variety of programs,[176] and in its forty-two year history has compiled some impressive statistics in a number of areas.[177] However, in spite of the millions of acres which have been

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[174] See text at note 172, *supra*.

[175] As of June 30, 1976, 153 RC & D measures of Soil and Water Management for Agriculture Related Pollutant Control had been adopted, and a total of 2,778 RC & D measures for Critical Area Treatment (the primary measure directed toward erosion control) had been adopted. In comparison, the figure for Public Recreation, Fish and Wildlife Development measures was 4,186; Public Service and Facilities measures, 5,566; Industrial Development measures, 605; Agricultural and Forest Product Processing or Marketing Industry measures, 807; Public Water Based Recreation measures, 909; and Water Development measures, 1,999. *Status of Progress Items 1976, supra* note 99, at 4. Note that the total number of RC & D measures adopted exceeds 33,000. See text at note 173, *supra*.

[176] In addition to those programs previously discussed, the Service also conducts river basin investigations and surveys, flood hazard analysis and joint watershed investigations with the Department of the Army, and is USDA's representative on the Water Resources Council. 7 C.F.R. § 621 (1977). It is also responsible for undertaking emergency watershed protection, Id. § 624, administering the Water Bank Program for conserving wetlands in important migratory waterfowl nesting and breeding areas, conducting flood insurance studies for the Department of Housing and Urban Development, cooperating with the Bureau of Reclamation to reduce salt concentrations in the Colorado River under the Colorado River Basin Salinity Control Program, CONSERVATION HIGHLIGHTS 1976, *supra* note 106, at 3, 4, and cooperating with the Department of Commerce pursuant to the Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451-1464 (1976).

[177] The accomplishments claimed by the SCS for all its programs combined as of June 30, 1976 include:

Land Use Conversions		
Cropland to Grassland	30,304,936	acres
Cropland to Woodland	2,909,829	acres
Cropland to Wildlife-Recreation	1,897,757	acres
All other uses to Wildlife-Rrecreation	13,165,020	acres
Total Terraces	1,239,434	miles

treated, a great deal still remains to be done.[178] Although SCS has spent over $5.5 billion since 1935,[179] perhaps as much as 50 percent of the land in this country still needs some form of conservation treatment to reduce its erosion level to within what SCS considers acceptable limits—less than four tons annually per acre. Undoubtedly, the shift of SCS from an agency dealing solely with soil erosion problems to one also concerned with increasing production and profits has divided its resources and weakened its effectiveness in the area of soil conservation.

Proper Grazing Use	287,571,006	acres
Livestock Exclusion	18,180,006	acres
Minimum Tillage	39,161,170	acres
Pasture and Hayland Management	78,098,927	acres
Pasture and Hayland Planting	77,478,552	acres
Range Seeding	17,736,806	acres
Stripcropping	22,596,628	acres
Tree Planting	24,831,113	acres
Woodland Improved Harvesting	36,533,151	acres
Brush Management	59,344,377	acres
Conservation Cropping System	225,065,267	acres
Contour Farming	50,010,971	acres
Multiple Purpose Dams	26,345,031	acre-feet
Diversion Dams	24,507	acres
Farmstead and Feedlot Windbreaks	946,325	acres
Field Windbreaks	101,018	miles
Flood Water Retarding Structures	12,703	miles
Land Adequately Protected	1,075,679,850	acres

CONSERVATION HIGHLIGHTS 1976, *supra* note 106, at 6.

[178] According to the National Inventory of Soil and Water Conservation Needs, U.S. DEP'T OF AGRICULTURE, BASIC STATISTICS—NATIONAL INVENTORY OF SOIL AND WATER CONSERVATION NEEDS 1967, STATISTICAL BULLETIN No. 461 (1971), of all cropland in the inventory, 64 percent (178 million acres) still needed some treatment; of all pasture land only 28 percent (28 million acres) had been adequately treated; 29 percent of the rangeland (112 million acres) had been adequately treated, with 251 million acres still needing treatment; 178 million acres (38 percent) of privately owned forest land used for forestry purposes had been adequately treated; 79 percent of the 137 million acres of grazed forest still needed treatment; and of the 56 million acres of other land, 28 percent still needed some treatment. *Id.* at 2. Although these figures are ten years old, they still give an indication of the extent of the job yet to be done, and recent years of increased acreage development have likely done little to lessen the need. This is shown by the fact that in 1974, SCS estimated that at least 9.5 million acres would be converted from pasture, woodland and set aside acreage into cropland. It further estimated that 4 million acres of this new cropland would be subject to erosion losses of more than four tons per acre. Grant, *Erosion in 1973-74: The Record and the Challenge*, 30 J. SOIL & WATER CONSERVATION 29-30 (1975).

[179] BUDGETS OF THE U.S. GOVERNMENT (1939-1978).

C. *The Agricultural Conservation Program*

The major soil conservation program of USDA not administered by SCS developed from the Agricultural Adjustment Act of 1933.[180] Like the Soil Erosion Service, the Act was an early federal response to the economic depression of the 1930's and was intended to increase farm income by raising prices. It provided, *inter alia,* for the Secretary of Agriculture to reduce the acreage of basic crops then in oversupply by using a system of direct payments to farmers in return for their participation in an acreage control program.[181] The Supreme Court invalidated the initial acreage reduction program in *United States v. Butler.*[182] Following *Butler,* USDA devised a new, but hopefully constitutional, program to achieve the same objective of enhancing farm income.[183] Enacted as part of the Soil Conservation and Domestic Allotment Act of 1936,[184] the new plan for restoring farm prosperity consisted primarily of the Agricultural Conservation Program, which paid farmers to shift acreage from "soil-depleting crops" (generally row crops which were in oversupply) to "soil-conserving crops" (generally those which would protect and rebuild the soil and which were not in surplus).[185] Thus, while the 1933 Act emphasized prices, the 1936 Act emphasized soil conservation. This change, however, "was largely an expedient, designed to retain authorization for making payments to farmers."[186] Consequently, although the new program had the potential to greatly expand national conservation efforts, its primary purpose was not

[180] Pub. L. No. 73-10, 48 Stat. 31 (1933).

[181] *Id.;* G. BAKER *et al., supra* note 33, at 146; M.R. BENEDICT, *supra* note 32, at 302, 310.

[182] 297 U.S. 1 (1936). "Congress has no power to enforce its commands on the farmer to the ends sought by the Agricultural Adjustment Act. It must follow that it may not indirectly accomplish those ends by taxing and spending to purchase compliance." *Id.* at 74.

[183] G. BAKER, *et al., supra* note 33, at 162.

[184] Pub. L. No. 74-461, 49 Stat. 1148 (1936).

[185] *Id.,* 49 Stat. at 1150; *Agricultural Department Appropriation Bill for 1938: Hearings Before the Subcomm. of the House Comm. on Appropriations,* 75th Cong., 1st Sess. 1177-78, 1211, 1214-16 (1938) (statements of H.R. Tolley, Administrator, Agricultural Adjustment Administration) [hereinafter referred to as *1938 House Agriculture Appropriations Hearings*]; R.B. HELD & M. CLAWSON, *supra* note 16, at 175. The Act also paid farmers for implementing treatment measures on their lands.

[186] M.R. BENEDICT, *supra* note 32, at 351. There is some indication that the new approach was not solely a reaction to the *Butler* decision. The Program Planning Division of the Agricultural Adjustment Administration had considered modifying the 1933 Act to place more emphasis on conservation once the program authorized by the Act shifted from its emergency phase to a long term basis. *Id.* at 349 *citing* AGRICULTURE ADJUSTMENT ADMIN., AGRICULTURAL CONSERVATION 1936: A REPORT OF THE ACTIVITIES OF THE AGRICULTURAL ADJUSTMENT ADMINISTRATION 1 (1936); *see also* G. BAKER, *et al., supra* note 33, at 166.

conservation but the increase of farm income.[187]

The basic procedure for obtaining payments under the newly created Agricultural Conservation Program required submission by the states of adjustment plans based on conservation objectives.[188] The Agricultural Adjustment Administration assumed primary responsibility for the Conservation Program,[189] although the program also established state committees charged with advising on general policy matters and recommending the details of the conservation measures to be included in the program.[190] In addition, county committees composed of elected members, usually farmers, made recommendations regarding the content of the program. These committees played a large part in determining what conservation practices were approved for cost-share payments.[191]

Since its beginning in 1936, the Agricultural Conservation Program has shifted the emphasis of its policies a number of times. During the early years of the program, income supplement payments to farmers for converting acres of their land from soil-depleting to soil-conserving crops accounted for the bulk of expenditures under the Act. However, by 1940, the major program emphasis

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[187] M.R. BENEDICT, *supra* note 32, at 350-51. The declared purposes of the Act were:

(1) preservation and improvement of soil fertility;

(2) preservation of economic use and conservation of land;

(3) diminution of exploitation and wasteful and unscientific use of national soil resources;

(4) protection of rivers and harbors against the results of soil erosion in aid of maintaining the navigability of waters and water courses and in aid of flood control; and

(5) reestablishment . . . of the ratio between the purchasing power of the net income per person on farms and that of the income per person not on farms that prevailed during the five year period August 1909 - July 1914 . . . and the maintenance of such ratio.

Pub. L. No. 74-461, 49 Stat. 1148 (1936).

[188] *Id.*; M.R. BENEDICT, *supra* note 32, at 350. The states also had to designate a state agency to administer the program. *1938 House Agriculture Appropriations Hearings, supra* note 185, at 1242. A requirement that federal payments would be made only after the presentation of proof of the implementation of the plans was initially enacted although it was later modified and finally dropped. *See* Pub. L. No. 75-170, 50 Stat. 329 (1937); R.B. HELD & M. CLAWSON, *supra* note 16, at 51; *1938 House Agriculture Appropriations Hearings, supra* note 185, at 1242 (statement of Administrator Tolley).

[189] M.R. BENEDICT, *supra* note 32, at 351. The Agricultural Adjustment Administration was organized on a regional basis. *Id.*

[190] Pub. L. No. 74-461, 49 Stat. 1148 (1936).

[191] See, *Agricultural Department Appropriations for 1939: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 75th Cong., 3d Sess. 1139 (1938) (statement of Administrator Tolley).

This administrative structure of the Agricultural Conservation Program has remained relatively unchanged, although today the power of the local committees has substantially increased. *See* 1977 GAO REPORT, *supra* note 53, at 42-43; text at note 208, *infra*.

had shifted to conservation.[192] Also, in 1940 the Agricultural Conservation Program undertook measures to increase opportunities for small farmer participation in the program and to provide greater responsibility to local farmer committees for administration of the program.[193] After 1941, the program sought to adjust to the demands caused by the war effort. In 1943, a rider attached to an appropriations bill prohibited the use of federal funds for crop diversion payments,[194] stopped incentive payments for increasing production and explicitly stated that conservation was the primary objective of the program.[195] County committees also were given more authority to select the specific practices which might qualify for federal payments and to determine the amount each farmer could receive.[196] Although the wartime phase of the program ended in 1944, the measures then enacted had a lasting effect on the program.[197]

In 1945, the newly created Production and Marketing Administration[198] assumed responsibility for the Agricultural Conservation Program. However, the Production and Marketing Administration soon became embroiled with SCS in a contest over control of USDA's conservation programs.[199] In an attempt to settle this dis-

[192] Total expenditures under the Act averaged over $400 million per year from 1936 to 1943. Payments made strictly for conservation practices rose from $60 million to over $200 million annually during that same period. R.B. HELD & M. CLAWSON, *supra* note 16, at 183; BUDGETS OF THE U.S. GOVERNMENT (1938-1945).

[193] K.W. Easter, Evaluation of Agricultural Conservation Program's Performance 32 (1966) (unpublished doctoral thesis submitted to Michigan State University Department of Agricultural Economics) [hereinafter cited as Easter]. Despite the effort to increase the participation of small farmers, there appears to have been a rather abrupt decline in the rate of growth in the number of participating farms at this time. *See* AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, ACP PRACTICE ACCOMPLISHMENTS BY STATES, 35 YEAR SUMMARY 1936-1970, at 169 (1971) [hereinafter referred to as ACP 35 YEAR SUMMARY].

[194] Pub. L. No. 78-129, 57 Stat. 417 (1943). *See* R.B. HELD & M. CLAWSON, *supra* note 16, at 183.

[195] Pub. L. No. 78-129, 57 Stat. 417 (1943); *see* 89 CONG. REC. 3510-16 (1943); Easter, *supra* note 193, at 34; Knapp, *Congressional Control of Agricultural Conservation Policy,* 71 POL. SCI. 257, 265 (1956).

[196] U.S. DEP'T OF AGRICULTURE, REPORT OF THE CHIEF OF THE AGRICULTURAL ADJUSTMENT AGENCY—1944 8 (1944) [hereinafter referred to as REPORT OF THE CHIEF OF THE AAA—1944].

[197] Easter, *supra* note 193, at 33.

[198] G. BAKER, *et al.*, *supra* note 33, at 332.

[199] There was particular controversy over which agency should provide technical services. Easter, *supra* note 193, 36-37; R.B. HELD & M. CLAWSON, *supra* note 16, at 51-52. The Production and Marketing Administration suffered set-backs in its effort to expand — first in 1948, when there was a large cut-back in Agricultural Conservation Program appropriations, Pub. L. No. 80-712, 62 Stat. 525 (1948) and more dramatically in 1949, when Congress authorized a transfer of 5 percent of the program's funds to SCS and payment for SCS

pute, a 1951 reorganization plan was implemented which sought to end the open acrimony between the two agencies and to cure the duplication, overlap, conflict and lack of coordination which existed in USDA's conservation programs.[200] Although the plan defined the respective roles of the two agencies somewhat more clearly, the reorganization resulted in neither agency expanding its role appreciably.[201]

Beginning in the mid-1940's, the Agricultural Conservation Program also altered its emphasis away from short-term and toward more long-range and permanent conservation measures, especially those requiring cost-share assistance to achieve maximum conservation benefits.[202] In conjunction with this trend toward more lasting conservation measures, the program also changed the nature of program payments, ceasing to make many small payments to a large number of farmers, and instead making fewer payments to selected landowners undertaking larger and more enduring projects. As a result, the number of farmers participating in the program declined substantially and the size of per farmer payments correspondingly increased.[203] A 1953 statement of the guiding principles of the Agricultural Conservation Program reflected this change in emphasis. The new principles were:

> (1) to confine the conservation practices to those on which Federal cost sharing is most needed to achieve maximum conservation benefit,
>
> (2) to encourage those practices which provide the most enduring benefits,
>
> (3) to limit cost sharing only to those practices which it is believed farmers would not carry out to the extent needed without assistance,
>
> (4) to cost share the minimum required to result in substantially increased performance of needed practices,

technical assistance provided to implement the program's mandates. Pub. L. No. 81-146, 63 Stat. 342 (1949); G. BAKER, *et al.*, *supra* note 33, at 365.

[200] With the exception of forestry, the reorganization left SCS with responsibility for all technical aspects of the permanent soil conservation work of the Production and Marketing Administration while that administration retained authority to carry out its production purposes. R.J. MORGAN, *supra* note 17, at 151-53; Easter, *supra* note 193, at 37, *citing* Secretary of Agriculture Brannan's Memorandum 1278.

[201] C. HARDIN, *supra* note 25, at 230-32; R.B. HELD & M. CLAWSON, *supra* note 16, at 52.

[202] REPORT OF THE CHIEF OF THE AAA — 1944, *supra* note 196, at 8; Easter, *supra* note 193, at 34-35, 37-38.

[203] R.B. HELD & M. CLAWSON, *supra* note 16, at 183-85. In 1950, there were 2.5 million farms participating in the Agricultural Conservation Program, but by 1955 that figure had declined to just over one million participating farms. ACP 35 YEAR SUMMARY, *supra* note 193, at 169-70.

(5) to limit cost sharing practices to those designed to result in conservation of the land, and

(6) to give farmers the responsibility for the upkeep and maintenance of the practice.[204]

In keeping with the new directives, USDA attempted to reduce the large number of approved conservation practices by deleting short-term and production-oriented measures; however, these efforts proved largely unsuccessful due primarily to the resistance of some Congressional agricultural subcommittees.[205] In fact, despite USDA efforts, the Agricultural Conservation Program became even more heavily involved in short-term measures to increase production than it was in earlier years.[206] In the face of growing opposition to limiting program measures to those with long-term conservation benefits, USDA attempted to provide incentives for such programs by permitting cost-share rates higher than the usual 50 percent rate authorized for most practices.[207] This battle over which type of program should be included in the Agricultural Program's approved list precipitated a serious decline in the authority of the Secretary of Agriculture. Congress prohibited USDA from deleting specific practices, thereby leaving formulation of the specific programs to the state and local committees who were free to adopt and implement practices which they felt were in their own best interest, regardless of whether the practices provided significant conservation benefits.[208]

The Agricultural Conservation Program underwent few major changes during the early 1960's. In that period, the Agricultural Stabilization and Conservation Service assumed responsibility for the program;[209] wildlife conservation practices which had soil or water conservation benefits became part of the program, and the Service, with the aid of the local committees, undertook a campaign

[204] U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE 31-32 (1953) (C.J. Benson).

[205] Easter, *supra* note 193, at 39-44. Among other things done to prevent the changes sought for the Agricultural Conservation Program, the subcommittees added provisions to the appropriations bills for 1959-62, forbidding USDA from changing its approved practices list without approval of a county or state committee. Pub. L. No. 86-80, 73 Stat. 171 (1959); Pub. L. No. 86-532, 74 Stat. 236 (1960); Pub. L. No. 87-112, 75 Stat. 234 (1961). For a detailed discussion of the program's policy formation, see Easter, *supra* note 193, at Chapter IV.

[206] R.B. HELD & M. CLAWSON, *supra* note 16, at 185.

[207] Easter, *supra* note 193, at 41. The exact impact of this incentive rate plan in encouraging long range conservation measures was never systematically assessed.

[208] *Id.* at 44-45.

[209] G. BAKER, *et al.*, *supra* note 33, at 409.

to persuade non-member farmers to join the program.[210] Throughout these years the Agriculture Department continued to stress practices with enduring benefits,[211] and encouraged the Agricultural Program to reach low income farmers[212] and bring about such long-term land use adjustments as conversion of cropland to permanent vegetative cover.[213] Yet, in spite of this ongoing agency emphasis on conservation, state and county committees continued to view income support and production enhancement as the major aspects of the program.[214]

In 1966, beautification measures became eligible for cost-sharing[215] and, in 1970, pollution abatement programs which conserved soil or water became approved practices.[216] Also, during these years, the number of Agricultural Conservation Program-participating farms steadily decreased while the average per farm assistance payment constantly increased.[217]

In 1971, the Agricultural Conservation Program received a major overhaul,[218] and was redirected to emphasize abating agricultural pollution, improving environmental quality and obtaining more enduring conservation benefits, as well as to concentrate on the most critical conservation problems.[219] By 1973, payments for pollu-

[210] This effort resulted in over 200,000 requests for assistance from farmers who had not previously been carrying out conservation efforts through the ACP. U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE 16-17 (1962) (O.L. Freeman).

[211] *Id.* at 18.

[212] U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE 17 (1964) (O.L. Freeman).

[213] *Agriculture Appropriations for 1965: Hearings Before the Subcomm. of the Senate Comm. on Appropriations*, 88th Cong., 2d Sess. 187 (1964) (statement of Secretary of Agriculture Freeman).

[214] Easter, *supra* note 193, at 76-78.

[215] U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE 83 (1968) (O.L. Freeman).

[216] AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, 1971 RURAL ENVIRONMENTAL ASSISTANCE PROGRAM foreword (1972) [hereinafter cited as 1971 REAP].

[217] *See* AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, 1973 RURAL ENVIRONMENTAL ASSISTANCE PROGRAM 93 (1975) [hereinafter cited as 1973 REAP].

[218] The Agricultural Conservation Program was renamed the Rural Environmental Assistance Program (REAP) in 1971. Pub. L. No. 92-73, 85 Stat. 196 (1971); 1971 REAP, *supra* note 216, at foreword. The program was renamed again in 1973 to the Rural Environmental Conservation Program, Pub. L. No. 93-86, 87 Stat. 241 (1973), and changed back to Agricultural Conservation Program in 1974, Pub. L. No. 93-563, 88 Stat. 1838 (1974). Hereinafter, all references to the program will be to the Agricultural Conservation Program regardless of the year involved.

[219] Pub. L. No. 92-73, 85 Stat. 196 (1971); 1971 REAP, *supra* note 216, at foreword.

tion abatement projects accounted for over 14 percent of the program's funds,[220] and the redirected program claimed impressive gains.[221] However, a 1977 GAO report concerning the program challenged many of these claims.[222] GAO found that, despite efforts by the Department of Agriculture to eliminate temporary and production-oriented practices,[223] recent trends indicated that proportionately more funds were being made available for practices which financially aided farmers, stimulated production or offered only temporary erosion control benefits.[224] In fact, GAO concluded that, in the past few years, less than half of the program's cost-share funds subsidized measures were primarily aimed at soil conservation.[225]

Much of the responsibility for the failure of the Agricultural Conservation Program to fund long-term conservation measures lies with Congress. After a 1972 GAO report[226] recommended the elimination of low conservation and production-oriented measures, USDA attempted to conform its program with these recommendations. By 1974, it had reduced and consolidated its national list of approved practices to fourteen, down from the sixty approved in 1970.[227] However, Congress nullified these efforts by restoring the eligibility of all practices approved in 1970.[228] This congressional action virtually eliminated the power of USDA and the states to approve or disapprove practices selected for cost-sharing by the county committees.[229] Thus, the only avenue left open to USDA in

[220] 1973 REAP, *supra* note 217, at 11. This amounted to $25,664,696.

[221] A major claim was that payments for enduring conservation measures accounted for almost 95 percent of the 1971 and 1972 program expenditures. *See* 1971 REAP, *supra* note 216, at explanatory note; AGRICULTURAL STABLIZATION AND CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, 1972 RURAL ENVIRONMENTAL ASSISTANCE PROGRAM (1973).

[222] 1977 GAO REPORT, *supra* note 53.

[223] *See Id.* at 28.

[224] *Id.* at 27. The GAO was most critical of four practices which it considered production oriented: installation of drainage systems, reorganization of irrigation systems, land leveling and application of lime or other material to cropland. *Id.* at 31-41.

[225] *Id.* at 28.

[226] GENERAL ACCOUNTING OFFICE, GREATER CONSERVATION BENEFITS COULD BE ATTAINED UNDER THE RURAL ENVIRONMENTAL ASSISTANCE PROGRAM (1972).

[227] 1977 GAO REPORT, *supra* note 53, at 28.

[228] *See* Pub. L. No. 94-122, 89 Stat. 661 (1975); Pub. L. No. 94-351, 90 Stat. 852 (1976).

[229] 1977 GAO REPORT, *supra* note 53, at 43. Recent efforts in the 94th Congress to reverse this Congressional action have failed. S. 3299, which would have amended the Soil Conservation and Domestic Allotment Act to reduce the number of approved practices and emphasize enduring conservation measures, failed to pass the Senate; and S. 2081, which would have provided for coordination and oversight of the various soil conservation programs, was pocket-vetoed in 1976 by President Ford. 1977 GAO REPORT, *supra* note 53, at 43-44.

its quest for long-term conservation measures is to persuade county committees to more fully support the conservation objectives of the Agricultural Conservation Program.[230]

The Agricultural Conservation Program has been the most expensive federal conservation program, with total appropriations exceeding $11 billion since 1936.[231] Even this figure, however, does not accurately reflect the total costs of the program, since it includes only funds for cost-sharing assistance and does not include administrative expenses.[232] In addition, the federal cost-share represents only a portion of the total outlay under the program, the remaining expenditures for implementation of the program's practices coming from individual landowners.[233] These expenditures have achieved some impressive statistics over the years.[234] However, a cautionary

[230] The 1977 GAO Report itself stressed the need to work closely with the county committees to help them identify the most critical conservation needs in their area, and to assist in establishing a priority system for funding those measures most needed and having the most enduring conservation benefit. *Id.* at 45.

[231] *Id.* at 3.

[232] *Id.*

[233] The Land and Water Policy Committee of USDA estimated that in 1962, the federal government bore only 30 percent of the costs of applying conservation measures. The Committee did not indicate, however, whether the 30 percent figure applied only to the Agricultural Conservation Program or was applicable to all USDA programs. The typical farmer out-of-pocket cost share under the Agricultural Program is 50 percent, but there are usually additional indirect costs borne by the farmer amounting to an average of approximately 25 percent of the total cost. *Agricultural Appropriations for 1964: Hearings Before the Subcomm. of the Senate Comm. on Appropriations*, 88th Cong., 1st Sess. 549 (1963) (statement of H. D. Godfrey, Administrator, Agricultural Stabilization and Conservation Service, U.S. Dep't of Agriculture, Land and Water Resources 62 (1962)).

[234] As of 1970, accomplishments claimed for the Agricultural Conservation Program included:

1.	Establishment of enduring cover for long term field use:	53,759,024 acres
2.	Establishment of permanent vegetative cover for soil protection or land use adjustment:	50,581,522 acres
3.	Establishment of rotational-type cover for control of erosion:	260,599,286 acres
4.	Stripcropping:	113,900,771 acres
5.	Planting trees or shrubs for forestry purposes and erosion:	5,091,408 acres
6.	Improvement of established vegetative cover for soil or watershed protection:	126,010,258 acres

note seems warranted. Since the program's land treatment measures are implemented with technical assistance provided by SCS, some duplication of reporting inflates the statistics of both the program and SCS.[235] In addition, figures reported for the number of acres on which semi-permanent practices have been implemented do not accurately reflect the total number of acres so treated because many acres have been treated more than once.[236] And, of course, even with these impressive statistics, much treatment remains to be done.[237]

7.	Artificial reseeding of pasture or rangeland to improve vegetative cover for erosion control:	85,597,176 acres
8.	Livestock water developments to improve grassland management: (to 1967)	1,981,713 number
9.	Wells for livestock water:	273,802 number
10.	Springs or seeps developed for livestock water:	107,454 number
11.	Construction of dams, pits or ponds for agricultural uses:	1,740,715 number
12.	Installation of pipelines for livestock water to improve grassland management: (1940-70)	6,441,224 acres served
13.	Construction of permanent fences to protect vegetative cover:	
	(1937-64)	47,805,849 rods
	(1965-70)	13,646,340 acres served
14.	Construction of standard, broad base, or level terraces:	31,842,273 acres served
15.	Construction of storage type dams for erosion control, water or sediment retention:	306,689 number
16.	Construction of non-storage dams, checks and drops to control erosion:	3,054,034 number

ACP 35 YEAR SUMMARY, *supra* note 193.

[235] Personal Communication, L. B. Shields, Assistant Director, SCS Information Division (Sept. 1, 1977).

[236] R.B. HELD & M. CLAWSON, *supra* note 16, at 187.

[237] *See generally* U.S. DEP'T OF AGRICULTURE, BASIC STATISTICS—NATIONAL INVENTORY OF SOIL AND WATER CONSERVATION NEEDS 1967, STATISTICAL BULLETIN No. 461 (1971); U.S. ENVT'L PROTECTION AGENCY, METHODS FOR IDENTIFYING AND EVALUATING THE NATURE AND EXTENT OF NON-POINT SOURCES OF POLLUTANTS ch. 3 (1973).

D. Additional Department of Agriculture Programs

1. The Conservation Reserve Program

In addition to the Agricultural Conservation Program, at least three other significant USDA programs exist which, although developed primarily to deal with problems other than soil erosion, have had conservation as a secondary objective. The first of these, the Conservation Reserve Program, was authorized by the Soil Bank Act of 1956.[238] The Conservation Reserve Program primarily sought to raise farm income and reduce agricultural inventories by diverting land from the production of crops; as a secondary purpose it also sought to establish and maintain protective vegetative cover and to undertake other land treatment measures on land taken out of production.[239] A strictly voluntary program, the Reserve Program entailed the use of controls whereby farmers agreed not to produce crops or graze livestock on the affected land during the contract period, and the government agreed to give the farmers an annual cash "rental payment" plus a cost-share payment and technical assistance for implementing land treatment measures.[240] Although authorization for the Secretary of Agriculture to enter into contracts ran from 1956 to 1960, after which no new contracts were to be initiated, some of the agreements ran for ten years. Consequently, the program was actually intended to continue through 1969.[241] Those practices approved for up to 80 percent of the Reserve Program's cost-share funding included establishing cover crops, planting trees, constructing dams, pits or ponds to protect cover crops or store water, and protecting wildlife through the creation of cover, water marsh management or dam and pond construction.[242] At its

[238] Pub. L. No. 84-540, 70 Stat. 188 (1956). The CRP was originally placed under the control of the Commodity Stabilization Service. U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE 48 (1956) (C.J. Benson) [hereinafter cited as 1956 SECRETARY OF AGRICULTURE REPORT].

[239] Pub. L. No. 84-540, 70 Stat. 188 (1956); *see* AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, FINAL REPORT ON CONSERVATION RESERVE PROGRAM—SUMMARY OF ACCOMPLISHMENTS 1956-1972, foreword (1970) [hereinafter cited as FINAL REPORT ON CONSERVATION RESERVE].

[240] 1956 SECRETARY OF AGRICULTURE REPORT, *supra* note 238, at 48. The term of a contract depended on whether the designated land was already in an approved cover crop (3, 5, or 10 years), required establishment of a cover crop (5 to 10 years), or was to be planted with trees (10 years). *Id.*

[241] AGRICULTURAL RESEARCH SERVICE, U.S. DEP'T OF AGRICULTURE, THE CONSERVATION RESERVE PROGRAM OF THE SOIL BANK, 5 AGRICULTURAL INFORMATION BULLETIN 185 (1958).

[242] *Id.*

peak in 1960, approximately 306,000 farms had land in the conservation program with contracts in force covering 28.3 million acres.[243]

While the success of the Reserve Program as a commodity control program is debatable,[244] it did at least have some impact as a soil conservation program. Although no special effort was made to foster agreements covering land with erosion problems, and although a considerable amount of acreage in the program was relatively free of erosion,[245] much of the land actually placed in "reserve" was land not well suited for cultivation because of its high erosion hazard.[246] Consequently, most of the authorized practices under the Reserve Program were aimed at conserving the soil.[247] However, the conservation benefits resulting from these practices came at a relatively high price to the taxpayer.[248] The question therefore remains whether the benefits received from the Reserve Program outweighed the large cost of the program.

2. The Food and Agriculture Act of 1962

Two years after authority to enter into contracts under the Conservation Reserve Program had expired, Congress passed the Food and Agriculture Act of 1962.[249] The Act created a new program similar to the Reserve Program known as the Cropland Conversion Pro-

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[243] ECONOMIC RESEARCH SERVICE, U.S. DEP'T OF AGRICULTURE, ECONOMIC EFFECTS OF ACREAGE CONTROL PROGRAMS IN THE 1950'S, AGRICULTURAL ECONOMIC REPORT NO. 18, 30, 46 (1962) [hereinafter cited as ECONOMIC EFFECTS OF ACREAGE CONTROL PROGRAMS]; *see* FINAL REPORT ON CONSERVATION RESERVE, *supra* note 239, at foreword.

[244] *See, e.g.*, G. BAKER, *et al.*, *supra* note 33, at 386; ECONOMIC EFFECTS OF ACREAGE CONTROL PROGRAMS, *supra* note 243, at 21-22.

[245] R.B. HELD & M. CLAWSON, *supra* note 16, at 292; *see* ECONOMIC EFFECTS OF ACREAGE CONTROL PROGRAMS, *supra* note 243, at 38. Even idle lands qualified for the program. *Department of Agriculture Appropriations for 1967: Hearings Before the Subcomm. of the House Comm. on Appropriations*, 89th Cong., 2d Sess. 264-65, Pt. 3 (1966) (statement of H. D. Godfrey, Administrator of Agricultural Stabilization and Conservation Service).

[246] ECONOMIC EFFECTS OF ACREAGE CONTROL PROGRAMS, *supra* note 243, at 22, 38. *See Soil Bank Program: Hearings Before House Comm. on Agriculture*, 85th Cong., 1st Sess. 48 (1957) (statement of Mr. Doggett, USDA).

[247] By 1964, 2,154,428 acres had been planted with trees, 18,439,006 acres placed in permanent vegetative cover, dams and ponds covering 14,337 acres had been constructed, 310,815 acres of wildlife cover had been established and 10,494 acres of marsh had been placed under management. FINAL REPORT ON CONSERVATION RESERVE, *supra* note 239, at 2. The last year cost share assistance for Conservation Measures was provided was 1964. Total cover established under the Conservation Reserve Program amounted to almost 21 million acres.

[248] *Id.* The federal cost share for all of the Conservation Reserve Program's practices was $162,209,523, and total rental payments through 1969 amounted to $2,477,064,731. *Id.*

[249] Pub. L. No. 87-703, 76 Stat. 605 (1962).

gram.[250] Established on a pilot basis from 1963 to 1967, this program sought to improve farm family income by aiding landowners in the conversion of cropland (primarily cropland being used for production of surplus row crops) into long-range income-producing uses (such as forests, grass, water storage, wildlife habitat or recreation).[251]

Instead of providing for rental and cost-share payments and strict no-use contracts as utilized under the Reserve Program,[252] the Conversion Program relied on a combination of cost-share payments, technical assistance from SCS and so-called transition payments, to help the farmer bring about an adjustment from cropland to other uses.[253] The two programs also differed because only the Conversion Program required participants to develop conservation plans before they became eligible for benefits under their five or ten year contracts.[254] Additionally, before land could be included in the Conversion Program, the acreage had to have been in crop production during at least one of the preceeding three years.[255]

By the time the program ended in 1967, the Cropland Conversion Program had converted nearly 600,000 acres from cropland to pasture, woodland, recreation and other uses,[256] at a cost to the federal government of approximately $33 million.[257] Despite these accom-

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[250] *See* AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, ASCS BACKGROUND INFORMATION BULLETIN No. 1, 9 (1976).

[251] *Id.;* Pub. L. No. 87-703, § 101(4), 76 Stat. 606 (1962). Congress initially limited expenditures to $10 million per year. *Id.* § 101(7), 76 Stat. at 607. However, an additional sum of $15 million was provided for 1963 to enter into agreements on lands which had been under the Conservation Reserve Program. *See Department of Agriculture Appropriations for 1970: Hearings Before the Subcomm. of the House Comm. on Appropriations,* 91st Cong., 1st Sess. 596 (1965) (statement of H. D. Godfrey, Administrator, Agricultural Stabilization and Conservation Service).

[252] See text at note 240, *supra.*

[253] *Agricultural Appropriations for 1964: Hearings Before the Subcomm. of the Senate Comm. on Appropriations,* 88th Cong., 1st Sess., 187-88 (1963) (statement of D.A. Williams, Administrator, Soil Conservation Service).

[254] *Id.*

[255] *Department of Agriculture Appropriations for 1965: Hearings Before the Subcomm. of the House Comm. on Appropriations,* 88th Cong., 2d Sess., 431, Pt. 3, (1964) (statement of H. D. Godfrey, Administrator, Agricultural Stabilization and Conservation Service).

[256] U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE, 61 (1967) (O.L. Freeman) [hereinafter cited as 1967 SECRETARY'S REPORT].

[257] *Agriculture and Related Agencies Appropriations for 1976: Hearings Before the Subcomm. of the House Comm. on Appropriations,* 94th Cong., 1st Sess. 757 (1975) (materials submitted by K. C. Frick, Administrator, ASCS) [hereinafter cited as *1976 House Agriculture Appropriations Hearing*]. This figure represents transition and cost share payments only; it does not include administrative and technical assistance costs. A total of 10,078

plishments, the program nevertheless suffered from a soil conservation viewpoint since it did not emphasize the treatment of lands with a high erosion hazard; instead, it emphasized recruiting farmers for the program who were desirous of retiring, were disabled or who wanted to reduce their operations for other reasons.[258]

3. The Cropland Adjustment Program

In 1966, the Agricultural Stabilization and Conservation Service inaugurated a new program called the Cropland Adjustment Program.[259] Similar to the Conversion Program in its purpose of bringing about changes in land use, the Cropland Adjustment Program was part of a broader program to maintain farm income, stabilize prices, reduce surpluses, lower government costs and afford greater economic opportunity in rural areas.[260] Specifically, the Adjustment Program aimed at "reducing the costs of farm programs, assisting farmers in turning their land to nonagricultural uses, promoting the development and conservation of the Nation's soil, water, forest, wildlife, and recreational resources, [and] establishing, protecting and conserving open spaces and natural beauty."[261] Participants in the program had to maintain land treatment practices or uses which would conserve soil, water or forest lands; conserve, establish, or protect open spaces and natural beauty, wildlife or recreation resources; and prevent water or air pollution. The Adjustment Program prohibited the cultivation or grazing of the lands involved.[262]

In addition to cost-share payments and technical assistance, participants in the Adjustment Program received adjustment payments related to the value of the crops normally produced on their land (with emphasis placed on taking certain crops out of production) rather than the transition payments which the Conservation Conversion Program provided.[263] In certain areas, participants could have obtained an additional per acre payment in return for provid-

agreements were entered into with farmers converting lands in 473 counties in 42 states. *1970 House Agriculture Appropriations Hearings*, *supra* note 251, at 124-25.

[258] *See* 1967 SECRETARY'S REPORT, *supra* note 256, at 61, and its absence of discussion of an erosion hazard requirement. Also, no erosion hazard requirement appears in the relevant regulations. *See* 7 C.F.R. §§ 751.10 *et seq.* (1966).

[259] Pub. L. No. 89-321, 79 Stat. 1187 (1965).

[260] *Id.* § 601, 79 Stat. at 1206.

[261] *Id.* § 602, 79 Stat. at 1206.

[262] *Id.* § 602(b), 79 Stat. at 1207.

[263] *Id.* § 602(a), 79 Stat. at 1207-08; U.S. DEP'T OF AGRICULTURE, REPORT OF THE SECRETARY OF AGRICULTURE 15 (1965) (O.L. Freeman) [hereinafter cited as 1965 SECRETARY'S REPORT].

ing free public access for fishing, hunting, hiking and trapping.[264] Also, under its "Greenspan" plan, the Adjustment Program provided assistance to local, state and federal agencies to buy cropland for permanent conversion to public recreation and open space.[265]

Congress permitted the Agricultural Stabilization and Conservation Service to enter Cropland Adjustment Program contracts only during 1966 and 1967, having decided that it was inappropriate during a period of potential world food shortage to continue a program which diverted land from food production.[266] However, since the program provided for contracts of up to ten years duration, it did not actually terminate until 1977.[267] During the Adjustment Program's short life, over seventy-seven thousand separate agreements were entered into covering almost five million acres[268] at a total cost of approximately $648 million.[269]

Once again, hard data on the value of the Cropland Adjustment Program as a soil conservation program is not available. It suffered from many of the same problems which affected the Conservation Conversion Program. Although, undoubtedly, some acres received soil conservation treatment under the Adjustment Program, there was no emphasis on bringing high hazard lands into the program.[270] Instead, farmers who, because of ill health, age or other interests, wished to reduce their farming operations received preference.[271]

III. Section 208 of the Federal Water Pollution Control Act Amendments of 1972

The 1972 Amendments to the Federal Water Pollution Control

[264] Pub. L. No. 89-321, § 602(c), 79 Stat. 1208 (1965); 1965 Secretary's Report, *supra* note 263, at 15.

[265] Pub. L. No. 89-321, § 602(i), 79 Stat. 1208-09 (1965); 1967 Secretary's Report, *supra* note 256, at 61-62.

[266] *1970 House Agriculture Appropriations Hearings, supra* note 251, at 115.

[267] *1976 House Agriculture Appropriations Hearings, supra* note 257, at 686 (statement of K. E. Frick, Administrator, ASCS).

[268] Agricultural Stabilization and Conservation Service, U.S. Dep't of Agriculture, 1966 and 1967 Cropland Adjustment Program Statistical Summary 3 (1968). The relevant figure is that listed under the heading "designated acreage" as explained in the foreword.

[269] *1976 House Agriculture Appropriations Hearings, supra* note 257, at 730 (materials submitted to K. E. Frick, Administrator, ASCS).

[270] This conclusion results primarily from the lack of discussion of efforts to include erosion prone lands in the Secretary of Agriculture's Reports for the years of the program (1966-1977), and from the absence of any stress on erosion-prone lands in the relevant statutes and regulations. *See* Pub. L. No. 89-321, 79 Stat. 1187, 1206 (1967); 7 C.F.R. §§ 751.101 *et seq.* (1968).

[271] 1967 Secretary's Report, *supra* note 256, at 61.

Act[272] represent the nation's most recent soil conservation effort.[273] Calling for a joint undertaking by the Department of Agriculture and the Environmental Protection Agency (EPA), the 1972 Amendments are so far-reaching as to constitute, according to one writer, an "intimidating" piece of legislation.[274]

The 1972 Amendments set the ambitious goal of eliminating all discharges of pollutants into the nation's waters by 1985.[275] The

[272] 33 U.S.C. §§ 1251-1376 (1976) [hereinafter cited as 1972 Amendments]. The Amendments were adopted by an override of a Presidential veto.

[273] The Federal Water Pollution Control Act was originally passed in 1948. Pub. L. No. 80-845, § 5, 62 Stat. 1155, 1158 (1948). While enacted as amendments to the 1948 Act, the 1972 legislation was in reality so far-reaching as to constitute a totally new approach to water pollution control.

In terms of the water pollution control efforts of the Department of Agriculture, most of the impact of agricultural runoff is tied to soil erosion. It is either sediment or chemicals borne by soil particles entering water courses which are primarily responsible for the harm attributed to agricultural non-point sources of pollution. In fact, in terms of quantity of pollutants, sediment resulting from soil erosion is the largest contributor from any source, point or non-point. USDA & OFFICE OF SCIENCE AND TECHNOLOGY, CONTROL OF AGRICULTURAL-RELATED POLLUTION 10 (1969); U.S. COUNCIL ON ENVIRONMENTAL QUALITY, THIRD ANNUAL REPORT 170 (1972). Major chemical contaminants associated with agricultural non-point source pollution, and typically carried into the water attached to soil particles are nitrogen, phosphorous, pesticides, and animal wastes. Therefore, although Department of Agriculture programs, particularly prior to the 1970's, typically had as stated goals the protection of land rather than water, and were usually couched in terms of soil erosion control rather than water pollution control, they had significant potential to reduce water pollution by reducing sedimentation. *See, e.g.*, Train, *EPA and Agriculture: Establishing a Partnership*, 30 J. SOIL & WATER CONSERVATION 33 (1975) ("Fortunately, water pollution control and soil and water conservation require identical measures in most instances."); SOIL CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, POLLUTION ABATEMENT THROUGH SOIL AND WATER MANAGEMENT (1971).

For additional information on agricultural non-point source pollution and soil erosion, *see* SOIL CONSERVATION SOCIETY OF AMERICA, SOIL EROSION: PREDICTION AND CONTROL, THE PROCEEDINGS OF A NATIONAL CONFERENCE ON SOIL EROSION, SPECIAL PUBLICATION NO. 21 (1977); BUCKMAN & BRADY, THE NATURES AND PROPERTIES OF SOILS (8th ed. 1974); U.S. ENVT'L PROTECTION AGENCY, METHODS FOR IDENTIFYING AND EVALUATING THE NATURE AND EXTENT OF NON-POINT SOURCES OF POLLUTANTS (1973); Hackensmith & Steel, *Soil Erosion—The Work of Uncontrolled Water*, AGRICULTURAL INFORMATION BULLETIN 260 (1971); *A Primer on Agricultural Pollution*, 26 J. SOIL & WATER CONSERVATION 44 (1971); WILLRICH & SMITH, AGRICULTURAL PRACTICES AND WATER QUALITY (1969); *Proceedings of the Federal Inter-Agency Sedimentation Conference 1963*, U.S. DEP'T OF AGRICULTURE MISC. PUB. NO. 970 (1965).

[274] W. RODGERS, ENVIRONMENTAL LAW 345 (1977). Congress again made some significant changes in the Act in 1977 when, after three years of debates, it adopted the Clean Water Act of 1977. Pub. L. No. 95-217, 91 Stat. 1566 (1977).

[275] 33 U.S.C. § 1251a(1) (1976). The 1972 Amendments with their "no discharge" goal were said to reflect the Congressional view that "no one has the right to pollute — that pollution continues because of technical limits, not because of any inherent right to use the nation's waterways for the purpose of disposing of waste." Donley, Moss, Outen & Speth, *Land Use Control Under the Federal Water Pollution Control Act: A Citizen's Guide*, 5 ENVIR. L. REP. 50092 (1975).

Amendments also called for an interim goal of so-called fishable and swimmable waters by 1983.[276] In order to accomplish these goals, the 1972 Amendments address a great array of water pollution problems and establish a variety of disparate control strategies.[277] Section 208 of the Amendments deals with the problem of agricultural nonpoint source pollution and the mechanisms necessary for dealing with such pollution.[278]

Section 208 requires preparation by the states, regional agencies or, in some cases, local entities, of long-range so-called areawide waste treatment management plans.[279] The planning process must result in the establishment of comprehensive regulatory programs which will: (1) identify and provide for municipal and industrial waste treatment needs over a twenty-year period; (2) control the location, modification and construction of all facilities which may discharge pollutants; and (3) control runoff and other pollution from nonpoint sources.[280] Regarding agricultural pollution, Section 208 specifically requires each plan to include a procedure to: "(i) identify, if appropriate, agriculturally . . . related nonpoint sources of pollution, including runoff from manure disposal areas, and from land used for livestock and crop production, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources."[281]

Once a plan is submitted to EPA for approval, the governor of the state submitting the plan must name "one or more waste treatment management agencies (which may be an existing or a newly created local, regional, or state agency or political subdivision) . . ." to implement the plan.[282] Once EPA approves a plan, no activities contrary to the plan may be undertaken.[283]

Although substantial evidence exists to suggest that Congress in-

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President Ford reiterated this viewpoint in a November 1974 speech: "I do not accept the dismal projection that pollution is the inevitable price of prosperity, nor that we must compromise the environment to gain economic growth in the future. We cannot enrich our lives by impoverishing our lands." 5 ENVIR. L. REP. 1099 (1974).

[276] U.S.C. § 1251a(2) (1976).

[277] For a comprehensive discussion of the contents of the 1972 Amendments, *see* W. RODGERS, ENVIRONMENTAL LAW ch. IV (1977); Zener, *The Federal Law of Water Pollution Control*, in FEDERAL ENVIRONMENTAL LAW 682-791 (Envt'l L. Inst. 1974).

[278] 33 U.S.C. § 1288 (1976).

[279] *Id.*

[280] *Id.*

[281] *Id.* § 1288(b)(2)(F).

[282] *Id.* § 1288(c).

[283] *Id.* § 1288(e).

tended Section 208 planning to be a major element of the federal water pollution control effort, EPA has been slow to implement such planning.[284] Rather than emphasizing Section 208 plans, EPA initially opted to make Section 303(e) water quality plans the basis for its entire water management and planning strategy.[285] It is quite possible that EPA decided to emphasize Section 303 because it disliked the large amount of federal financial participation required under Section 208.[286] In any event, EPA believed that Section 208 was unnecessary since existing regulations already required basinwide, areawide and municipal planning and, consequently, Section 208 would simply add an unneeded layer of bureaucracy.[287] Moreover, a number of industrial groups and states were wary of the impact of Section 208 and exerted political pressure on EPA and the Nixon administration to de-emphasize enforcement of that section

[284] The House Committee on Public Works said that Section 208 [33 U.S.C. § 1288] "places emphasis on what the Committee considers the most important aspect of water pollution control strategy." H.R. REP. No. 911, 92d Cong., 2d Sess. 95 (1972).

Lester Edelman, counsel for the House Public Works Committee, in remarks critical of EPA's de-emphasis of Section 208, said that Congress clearly intended Section 208 to be the key to the planning process. Address to Water Quality Seminar of the Interstate Commission on the Potomac River Basin (May 10, 1973), *as reported in* [1973] 4 ENVIR. REP. (BNA) 104.

[285] 33 U.S.C. § 1313 (1976). *See generally* Donley & Hall, *Section 208 and Section 303 Water Quality Planning and Management: Where is it Now?* 6 ENVIR. L. REP. 50115 (1976). Section 303(e) called for establishment by each state of a continuing planning process. Plans were to include effluent limitations and compliance schedules, and were to be consistent with Section 208 plans, Section 209 basin plans, and Section 303 (d) maximum daily pollution loads. 33 U.S.C. § 1313(e) (1976).

According to the Chairman of the Senate Committee on Public Works, Section 303 was meant merely to continue water quality standards and to supplement the 1977 and 1983 goals of the 1972 FWPCA Amendments.

> The Administration [of EPA] should assign secondary priority to this provision (303) to the extent limited man power and funding may require a choice between a water quality process and early effective implementation of the effluent limitation—permit program.

A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess. 171, 246 (1973). *See also* [1973] 4 ENVIR. REP. (BNA) 104.

[286] Lester Edelman, counsel to the House Public Works Committee, in remarks presented at a water quality seminar sponsored by the Interstate Commission on the Potomac River Basin, *reported in* [1973] 4 ENVIR. REP. (BNA) 104. For fiscal years 1973-75, Section 208 required 100 percent grants from EPA for development of areawide plans, and in the years after 1975, 75 percent grants were required.

Edelman also expressed regret at the low level of funding actually provided in 1973 (none) and 1974 (only $25 million) for Section 208 planning. Over that two year period the Act had authorized funding of $150 million. *Id.*

[287] Communication of December 1971, from the EPA Administrator in opposition to passage of Section 208. *Senate Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972*, 93d Cong., 1st Sess. 841 (1973).

of the 1972 Amendments.[288]

The secondary role intended by EPA for Section 208 could be perceived in EPA's first Water Strategy Paper.[289] The Paper listed four EPA objectives in the order of their intended attainment: (1) establishment of water quality standards to meet the water use objectives established by law; (2) completion of Section 303 plans for all river segments by December 31, 1974; (3) development of Section 201 municipal waste treatment facilities planning; and (4) development of Section 208 areawide plans.[290] In direct reference to nonpoint pollutants, the Strategy Paper indicated that EPA would not at first seek "aggressive controls and enforcement," but rather would aim at eventual controls through such preventive management techniques as the promotion of proper land use.[291]

The concentration on point sources of pollution and the reluctance to aggressively implement Section 208 continued throughout Phase I (1973-1977) of EPA's water pollution control effort,[292] al-

[288] *See, e.g.*, letters in opposition to the original Section 208 legislation from California, Delaware, Georgia, Kansas, New Mexico, Texas, Virginia and Washington. *Proposed Water Pollution Control Legislation Before the Subcomm. on Public Works*, 92d Cong., 1st Sess. 1779-1805 (1971).

[289] The Strategy Paper was designed to ensure that regulations published in accordance with the 1972 Amendments conformed to a single strategy and were consistent with one another. [1973] 3 ENVIR. REP. (BNA) 1454-55.

[290] *Id.* at 1456. Section 208 plans were to have a "delayed priority except where there is a strong local desire" to create such authority. *Id.*

[291] *Id.* at 1457-58.

[292] A draft of the second edition of the EPA's Water Strategy Paper indicated that highest priority would continue to be the issuance of discharge permits. Other priorities were construction grants for municipalities and achievement of water quality requirements for 1977-78. Basically, from 1973 through 1977 (Phase I), EPA intended to address, through its permit and construction grant programs, easily identifiable and readily correctable pollution problems. It was not until the 1978 to 1983 period (Phase II), that it intended to deal with more subtle problems, including non-point sources. [1974] 4 ENVIR. REP. (BNA) 1844.

The EPA reiterated its permit and construction grant emphasis in its second annual report to Congress. [1974] 5 ENVIR. REP. (BNA) 397. This emphasis continued in the 1975 edition of the Water Quality Strategy Paper, although an additional priority was suggested for areawide waste treatment management and non-point source programs. [1975] 6 ENVIR. REP. (BNA) 1431. Also in 1975, a Federal District Court opinion required EPA to change its policy of treating Section 208 areawide planning in nondesignated areas as merely an expansion of the Section 303(e) continuing planning process. Natural Resources Defense Council, Inc. v. Train, 396 F. Supp. 1386 (D.D.C. 1975).

The year 1976 saw EPA give what seemed to be increased recognition to problems of non-point source pollution when it suggested a "new thrust [which] calls for development of a balanced strategy that includes programs addressing non-point sources of pollution." *Draft Overview of the Environmental Protection Agency's Water Quality Strategy Paper*, [1975] 5 ENVIR. REP. (BNA) 1893. However, the fiscal year 1977 Paper once again contained little in the way of specific non-point source pollution emphasis. [1976] 6 ENVIR. REP. (BNA) 1945.

though there are indications that EPA may substantially increase its efforts in nonpoint source pollution control during Phase II (1978-1983).[293] Areawide plans under Section 208, which deal, *inter alia*, with nonpoint source pollution, must be submitted to EPA for approval during Phase II.[294] The content of these plans and EPA's reaction to them will, of course, determine the direction of the federal nonpoint source control effort for at least the next few years. However, the past record of hesitancy by both EPA and the states in dealing forcefully with nonpoint sources, as well as the nature of nonpoint pollution, make it doubtful that there will be any innovative plans or rapid reduction in agricultural or other nonpoint source pollution. Indeed, most states have opposed strong measures to combat nonpoint source pollution[295] and, until this point, EPA has done little to indicate to the states that it expects them to pursue a tough control program.[296] Moreover, EPA has failed to provide any

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[293] As the abatement of point sources is achieved, the scope and nature of non-point source pollution will become increasingly obvious. During Phase II, NPS [non-point source] control will become a major problem emphasis (preparing for it during Phase I) . . . . States and areawide agencies are expected to develop NPS control strategies in 1976-77 . . . .

Draft Overview of the Environmental Protection Agency's Water Quality Strategy Paper, [1975] 5 ENVIR. REP. (BNA) 1893, 1901.

[294] EPA expects to receive for approval 149 Section 208 areawide plans, and 35 statewide plans during fiscal 1979. [1978] 9 ENVIR. REP. (BNA) 24.

[295] When earlier regulations permitted a governor to "non-designate" an area, thus freeing it from the requirements of Section 208, over one-half of the governors "non-designated" their entire state. Nationwide, governors "non-designated" an estimated 95 percent of the nation's waterways. Natural Resources Defense Council, Inc. v. Train, 396 F. Supp. 1386, 1390 (D.D.C. 1975). Many states also opposed Section 208 when it was first enacted and called for EPA to de-emphasize it in the regulatory process. See note 288, *supra*.

[296] Basically, Section 208 identifies certain non-point source pollution problems and directs the state, or its designated areawide agency, to create solutions for these problems. It does not establish substantive provisions allowing EPA or the federal government to address the problems directly, nor does it establish substantive requirements governing how states or areawide agencies are to address the problems. The only provision of the Act possibly establishing substantive requirements governing how local or state agencies should address non-point source pollution problems is Section 304(f), which directs the EPA administrator to:

> issue to appropriate Federal agencies, the States, water pollution control agencies, and agencies designated under section 208 of this Act . . . information including (1) guidelines for identifying and evaluating the nature and extent of non-point sources of pollutants, and (2) processes, procedures, and methods to control pollution resulting from . . . [such non-point sources].

33 U.S.C. § 1314(e) (1976).

EPA maintains the position that responsibility for the management of non-point source pollution lies with the states or their designated areawide agencies, and EPA's role is merely one of guidance.

meaningful guidance concerning Section 208 planning. An EPA handbook issued in 1976 to assist the states and regional EPA offices in understanding the then recently-enacted regulations implementing Section 208 indicated that the states were to have a great deal of flexibility to plan, set priorities and choose strategies.[297] To further bolster this notion of flexibility, EPA strongly encouraged decentralization of planning and substantial public participation.[298]

After more than six years of apathetic regulation, 1979 will mark the first year of direct EPA involvement in measures to limit agricultural nonpoint source pollution. Indications are that EPA will continue to move slowly,[299] relying very heavily on USDA and its traditional cost-share methodology to carry out the actual control measures.[300] Thus, unless past USDA shortcomings are corrected, they will simply be perpetuated in the EPA control effort.

There are signs that SCS may seek to avoid some of the problems which have plagued its past efforts. For example, the EPA-USDA agreement apportioning responsibility for dealing with rural nonpoint source water pollution under Section 208 calls for SCS, along with each local conservation district, to determine priorities for funding assistance. The priorities must be based on: (1) the severity of the water quality problems impacted by the pollution; (2) the economic and technical feasibility of control; (3) the projected public benefits; and (4) the compatibility with national water quality goals.[301] After SCS establishes priorities, it must rank proposed pro-

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> The final regulations reflect the primary role of the States in coordinating planning on a Statewide basis . . . and describe the general requirements for coordinating integration and communication between State and local governments. The regulations provide the flexibility to allow and, indeed, encourage State and local government to work out their own appropriate institutional arrangements relating to water quality management planning and implementation. In this regard, the regulations reflect the specific mandates of the Act and, additionally, contain a requirement for the establishing of State and local policy, and appropriate results from local, state, and federal governments will be included in the development and implementation of water quality management plans.

40 Fed. Reg. 55335 (1975).

[297] [1976] 6 ENVIR. REP. (BNA) 1596.

[298] *Id.* at 1824.

[299] Current efforts are to develop a four to six year control plan to assist the states. [1977] 8 ENVIR. REP. (BNA) 1186.

[300] EPA and USDA have entered into an agreement detailing both agencies' responsibilities for dealing with rural non-point source water pollution. SCS is the USDA agency which has been given the responsibility to carry out the efforts called for in the agreement. [1978] 9 ENVIR. REP. (BNA) 23-24, 369-70. SCS Rural Clean Water Program regulations are contained in 7 C.F.R. Part 634; 43 Fed. Reg. 50845 (1978).

[301] [1978] 9 ENVIR. REP. (BNA) 23.

jects; only the highest priority projects will receive funding.[302] Hopefully, using the two criteria of the severity of water quality problems and the economic and technical feasibility of control, SCS first will attack those sedimentation and erosion problems which are both most severe and the simplest to control. Also, limiting funding to high priority projects may keep the number of projects manageable and avoid the dissipation of funds among many small control efforts. In addition, SCS efforts will focus on obtaining contracts with landowners and developing procedures for monitoring and evaluation.[303] Although participation in this control effort is voluntary on the part of the landowner (at least until any mandatory control measures are approved in Section 208 plans), SCS may enforce its conservation efforts on the basis of these agreements once a landowner receives assistance.

Although these changes create some reasons for hope in the new Section 208 program, it still appears that much will continue to be the same, at least for a number of years. First, the new program does not call for the expenditure of large amounts of additional funds when compared to the magnitude of the land area involved.[304] Second, the people and expertise necessary to mount a massive cleanup

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[302] *Id.*

[303] Pub. L. No. 95-217, 91 Stat. 1566 (1977); see note 274, *supra*. *See also* [1978] 9 ENVIR. REP. (BNA) 369.

Dealing with the most severe problems first can be particularly effective. SCS estimates that the most erodible land classes, while constituting only 15 percent of the nation's cropland, are responsible for more than 40 percent of all sheet and rill erosion. Davis, *Soil Conservation on Agricultural Land: The Challenge Ahead*, 32 J. SOIL & WATER CONSERVATION 5, 6 (1977).

[304] A total of $200 million is authorized for cost-share use in fiscal 1979, and $400 million in 1980. *Id.* at 23. This compares, for example, to $18 billion in grants authorized for municipal wastewater treatment since 1973. U.S. COUNCIL ON ENVIRONMENTAL QUALITY, EIGHTH ANNUAL REPORT 27 (1977).

Very little study has been done on the costs, nationwide, for achieving adequate erosion control, and hard data on cost is therefore difficult to obtain. However, one recent EPA sponsored study in Indiana suggested it could cost as much as 75 dollars per acre to achieve "adequate" soil conservation treatment. Lake & Morrison, *Environmental Impact of Land Use on Water Quality: Final Report on the Black Creek Project*, EPA Doc. No. 905/9-77-007-A, at 68-71 (October, 1977). The authors suggest that costs could be kept lower than those incurred in the study if water pollution control were the only goal. The study project included treatment to protect top soil which, though beneficial, was not directly related to the control of pollution. *Id.* The Administrator of the Soil Conservation Service estimates an average of $12,000 is needed to install a full conservation system on a typical farm with serious erosion problems. Costs for a particular farm, however, can easily be much higher, and his estimate covers only out-of-pocket costs and not agency time and personnel. Davis, *Soil Conservation on Agricultural Land: The Challenge Ahead*, 32 J. SOIL & WATER CONSERVATION 5, 7 (1977).

campaign may not currently exist in sufficient numbers, even if adequate funds were available.[305] Third, opinions differ as to the adequacy and effectiveness of presently existing control measures in dealing with nonpoint source pollution problems.[306] And, finally, as long as control efforts remain voluntary,[307] farmers and ranchers will

[305] The number of "sources" of non-point pollution are incalcuable. The main thrust of the pollution control effort to date, the point source NPDES permit system, has been called "a mammoth administrative undertaking . . ." involving anywhere from 90,000 to 140,000 individual sources. W. RODGERS, *supra* note 274, at 360 (1977). Yet for non-point in agriculture alone there are approximately 2.7 million farms and ranches in the United States, with a total land area exceeding one billion acres. In addition, of course, the federal government owns hundreds of millions of acres which also require controls. Not only that, many farms and ranches contain lands in more than one watershed, with varieties of slopes and agricultural practices, each requiring separate evaluation as to best conservation practices. Frere, Woolhiser, Caro, Stewart, & Wischmeier, *Control of Nonpoint Water Pollution from Agriculture: Some Concepts*, 32 J. SOIL & WATER CONSERVATION 260 (1977). Approximately 367 million acres is cropland, generally more prone to erosion than pasture or range. Davis, *Soil Conservation on Agricultural Land: The Challenge Ahead*, 32 J. SOIL & WATER CONSERVATION 5 (1977).

Most of the best management practices require land treatment measures of one kind or another. These often require the use of heavy equipment and take a substantial amount of time and personnel to put into place. In addition, any large program would require additional technical staff to determine which control measures are best for each unique tract of land. A study, sponsored by EPA and done by the National Association of Conservation Districts, concluded that if all states enacted uniform laws for erosion and sediment control, national manpower needs, at the state and local level, not including so-called "clerical help," would increase by 20,632 man-years. National Association of Conservation Districts Sediment Control and Manpower Project, *Manpower Planning for Erosion and Sediment Control Program: An Estimate of National Manpower Needs*, INFORMATION CIRCULAR No. 15, Table No. 3 (January, 1977). This estimate assumes control of not only agricultural sources, but also silviculture, construction site and surface mine sources as well. It does not include any estimate of needed manpower at the federal level. *Id.*

[306] *Compare, e.g.*, the statement of Mark Pisano, then director of EPA's Water Planning Division: "Concerning best management practices and agriculture, effective land management practices generally are known . . . ." Pisano, *Nonpoint Pollution: An EPA View of Areawide Water Quality Management*, 31 J. SOIL & WATER CONSERVATION 94, 98 (1976), with a 1977 GAO report suggesting that EPA's data on the effects of non-point source pollution control measures, including those relating to agricultural pollution, was inadequate. GOV'T ACCOUNTING OFFICE, NATIONAL WATER QUALITY GOALS CANNOT BE ATTAINED WITHOUT MORE ATTENTION TO POLLUTION FROM DIFFUSED OR 'NONPOINT' SOURCES (1977); or with the remarks of Raymond Scott, Assistant Deputy Director for Agriculture, Science and Education Administration Extension, USDA:

> One important concern that seems to underlie many discussions about the 208 program is lack of an adequate scientific base for cleaning up our water . . . . [W]e do not have an adequate research base in many areas that will permit us to alter agricultural practices with the assurance that water quality will be improved. There is great need for more research in this area . . . .

Scott, *Cooperation Between Conservation Districts and Extension in the 208 Program*, 34 J. SOIL & WATER CONSERVATION 2 (1979).

[307] Most indications are that agricultural pollution control programs, except perhaps in the most egregious cases, will remain voluntary for the foreseeable future. Mandatory programs,

move slowly to implement conservation techniques, especially where cost-share funds are unavailable or there is insufficient evidence to demonstrate a correlation between good land management practices and increased income.

IV. CONCLUSION

Concern for the problems of soil erosion and soil conservation has been expressed at the federal level for more than eighty years. Since the 1930's, federal erosion control and conservation efforts, in terms of programs, dollars and personnel, have been substantial. Yet, soil erosion and its attendant water pollution impact still pose a major national problem, the remedy for which is the goal of yet another federal program pursuant to Section 208 of the Water Pollution Control Act Amendments of 1972. The need for this additional program stems from the failure of earlier federal conservation efforts.

The shortcomings and failings of USDA soil conservation programs have occurred principally in three areas. The first area concerns program goals. From the very beginning of Department of Agriculture efforts, soil conservation has been only one of a number of different and sometimes conflicting goals for erosion control programs. Congress created SES, later SCS, largely to provide jobs during the Depression, and formed the Agricultural Conversion Program as a price support program. As conservation districts and local control assumed greater significance, a national and regional perspective on conservation goals vanished, and was replaced by an emphasis on production-oriented practices. USDA has undertaken a wide variety of responsibilities in the area of rural economic and social development which have, at times, been in conflict with needed conservation practices. Thus, non-erosion control items often dissipated erosion control efforts and budgets, and some long-range programs suffered because of conflicts or lack of demonstrable short-term pay-offs.

A second area of shortcomings in the Department of Agriculture

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at least in the absence of federal funds to pay for control measures, would be completely unacceptable, and likely unaffordable, by most of the agricultural community. In addition, enforcement of a mandatory program would be prohibitively expensive. Finally, agricultural interests are very hostile to mandatory programs. Bryden, *The Impact of Variances: A Study of Statewide Zoning*, 61 MINN. L. REV. 769, 794-95 (1977). And even EPA seems to realize that the success of the 208 control program hinges on farmer and rancher understanding and acceptance. Krivak, *Best Management Practices to Control Nonpoint-Source Pollution from Agriculture*, 33 J. SOIL & WATER CONSERVATION 161, 162 (1978) [hereinafter cited as Krivak].

erosion control programs concerns program content and administration. Problems of factionalism and lack of coordination arose from the very start. Programs overlapped, agencies competed for funds and farmers often received conflicting advice. In a number of instances, small amounts of cost-share funds were distributed widely to many landowners, even though more effective erosion control could have been accomplished if larger amounts had been spent on those lands with the highest erosion hazard. The voluntary nature of USDA's conservation programs, with initiative being placed on the landowner, also caused several problems. For example, the Department did not establish priorities for hazardous lands. Farmers acting on their own initiative often never fully implemented planned conservation measures and, where they did adopt such measures, they received little follow-up assistance. In fact, many measures were later torn out, only to be reapplied again later on. These difficulties relating to the voluntary nature of the federal programs were exacerbated by the failure of conservation districts to adopt land use controls. Moreover, little coordination existed between erosion control programs and other programs affecting agriculture. For example, the soil bank program did not remove from production those lands with the highest erosion hazard; similarly, erosion hazards did not weigh heavily in the evaluation of proposed federal water and irrigation projects.

Finally, the third area of difficulty for USDA programs aimed at controlling soil erosion arises from the nature of the erosion problem itself. Controlling erosion and runoff on nearly two billion acres of land presents very formidable problems. First, and perhaps most importantly, soil erosion and nonpoint source pollution, from the perspective of regulation or control, pose "site-unique" problems. That is, the amount of runoff of soil and chemicals can vary significantly from field to field.[308] This characteristic was the primary

[308] An illustration of the field-by-field uniqueness of soil loss can be found in the universal soil loss equation. That equation, which is used to predict soil losses from sheet and rill erosion, requires consideration of six different variables in order to determine soil loss from a given field. The variables include: rainfall, soil type, length of slope, steepness of slope, type of cropping system, and type of conservation practices utilized. Wischmeier, *Use and Misuse of the Universal Soil Loss Equation*, 31 J. SOIL & WATER CONSERVATION 5 (1977). *See generally* SOIL CONSERVATION SOCIETY OF AMERICA, SOIL EROSION: PREDICTION AND CONTROL, THE PROCEEDINGS OF A NATIONAL CONFERENCE ON SOIL EROSION, SPECIAL PUBLICATION No. 21 (1977). The universal soil loss equation was developed to predict gross surface erosion. Although subject to sizeable error, it is currently the best method for predicting the amount of chemicals and sediment transported from fields to impacted streams and bodies of water. Frere, Woolhiser,

reason for SCS's shift away from demonstration projects and toward providing technical assistance for individual landowners. Erosion control programs require a great deal of flexibility[309] since what works well on one field under one set of conditions may not be at all appropriate for another field a short distance away. Second, the erosion control effort must constantly accomodate changes in technology or markets. Newly developed equipment or fluctuations in market prices often make old techniques obsolete or financially impractical. Third, the control of soil erosion requires large expenditures of funds. Each individual site must be visited, a plan drawn up and, often, construction and earthmoving carried out. Accomplishing these tasks for most of the land area of the United States would obviously be expensive,[310] and would require vastly increased numbers of trained planners, construction crews and equipment than are currently available. In the past, USDA and the landowner typically have shared the costs of erosion control. Since the landowner was acting voluntarily, USDA was not put in the position of forcing a landowner to pay for mandatory measures; however, that may change in the future. Finally, the present state of the art of erosion control can provide only imprecise measures of the amount of soil loss or potential for loss from a particular field.[311] Thus, even if the funds, equipment and technicians were available to do the measuring, the results would not be totally reliable.

To date, little or no evidence exists that the Section 208 program will prove to be the ultimate solution to the soil erosion problem. After more than six years of unenthusiastic activity, Section 208 appears to be nothing more than another addition to a long line of

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Caro, Stewart and Wischmeier, *Control of Nonpoint Water Pollution from Agriculture: Some Concepts*, 32 J. SOIL & WATER CONSERVATION 260, 264 (1977).

[309] There are numerous techniques for controlling erosion. In terms of complexity, they can range from conservation tillage methods, through to stripcropping, contouring, and a variety of waterways and terraces and finally, all the way to dams and other retention structures. Krivak, *supra* note 307, at 161.

[310] Very little study has been done on the costs, nationwide, for achieving adequate erosion control. It has been estimated that an average of $12,000 is needed to install a full conservation system on a typical farm with serious erosion problems. Costs for a particular farm, however, can easily be much higher. Plus, these are only the out-of-pocket costs and do not include agency time and personnel. Davis, *Soil Conservation on Agricultural Land: The Challenge Ahead*, 32 J. SOIL & WATER CONSERVATION 5 (1977).

[311] Predicting soil losses is discussed in Wischmeier, *Use and Misuse of the Universal Soil Loss Equation*, 31 J. SOIL & WATER CONSERVATION 5 (1977); SOIL CONSERVATION SOCIETY OF AMERICA, SOIL EROSION: PREDICTION AND CONTROL, THE PROCEEDINGS OF A NATIONAL CONFERENCE ON SOIL EROSION, SPECIAL PUBLICATION NO. 21 (1977).

ineffective soil conservation efforts. While there are some indications of progress, such as setting priorities for funding assistance and monitoring and evaluating conservation efforts, Section 208 promises no great progress unless its enforcers fashion implementation plans which recognize and correct past weaknesses. Goals must be clear, plans must be administered with long-range objectives in mind and the formidable challenge of dealing with a pollution "source" of almost two billion unique acres must be recognized and dealt with realistically.