A Conservation Partnership Sets the Standards

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The U.S. Department of Agriculture (USDA) was the sole leader in research, planning, and application of soil and water conservation in the United States for many years. In the 1980's, however, the Federal Government's role changed from that of source to partner with private organizations as well as State and local governments.

Some of the forces behind the shift are:
- Reduced Federal Budgets;
- Public concern over the environmental effects of land abuse;
- Public concern over the offsite effects of runoff;
- Local concern about causes and responsibilities for nonpoint source pollution;
- Increased awareness that ground water and surface water must be considered jointly;
- Established standards and specifications that provide for pollution control;
- Stronger role of State and local governments in conservation work on non-Federal land; and
- Adoption of established standards for pollution control by local units of government and professional organizations.

SCS Standards Facilitate Change
The Soil Conservation Service (SCS), the lead agency of USDA in soil and water conservation, began assisting landowners in constructing field conservation measures in the 1930's and 1940's. The landowners arranged and carried out the construction, which SCS designed.

Starting in the mid-1950's through 1980 local contractors and equipment manufacturers worked cooperatively with Federal and State conservation agencies and soil and water conservation districts to do conservation work more quickly. Training sessions and demonstrations in design and construction layout were held. Where this occurred, SCS technical assistance to landowners was limited, but qualified contractors were available. The work on highly productive agricultural land usually involved terracing, land level-
As farming methods change, engineering design standards are modified to accommodate the new techniques and equipment. A grassed, steep back-sloped terrace and tile outlet help conserve soil on an Iowa cornfield. (SCS)

ing, irrigation canal lining, and tile drainage. SCS standards and specifications, originally developed for employees in the field, were used for this work.

These standards helped to assure landowners of quality necessary for a credible job of conservation. Other Federal and State agencies, consulting firms, and towns and counties have used them as a starting point for developing consensus industry standards in soil and water conservation.

Consensus Industry Standards
To increase efficiency, the Federal Government in 1968 grew interested in the development and use of consensus industry standards. Circular A-119, "Federal Participation in the Development and Use of Voluntary Standards," issued by the Office of Management and Budget, became effective March 1, 1983. It calls for each Federal contracting officer to give preference to voluntary standards when describing a product or a service. SCS helped lead the way in the use of industry consensus standards when a shift was made in 1964 to use American Society of Testing Materials (ASTM) and other authorities in place of specifications developed by Federal agencies.

USDA Contributes to Industry Standards
Working with ASTM. USDA engineers participate with engineers throughout government, industry, and academia in ASTM. Its standards,
developed jointly by users and producers of products, procedures, and quality control tests, are the accepted procedures and quality control standards for the industry. Manufacturers use them both in production and in testing. These standards also are useful in the competitive pricing of quality products. This society currently has 30,000 active members, operates through 140 main technical committees, and is the world's largest source of voluntary consensus standards.

**Benefits from Industry Standards.** USDA benefits by having the products, procedures, and quality control tests that are used in soil and water conservation included in ASTM standards. They eventually become industry standards. Not only does this minimize time and effort in preparing specifications, but also installation costs are substantially reduced.

SCS recently issued the *Surge Irrigation Field Guide* which they developed in cooperation with the Agricultural Research Service, universities, and industry for technicians and land users. This new technology guide provides for standardization of equipment, recommendations for use, and help for the farmer in decisionmaking. An industry standard that evolves from a consensus process will be the next step.

**Working With ASAE.** Many USDA engineers are members of the American Society of Agricultural Engineers (ASAE) and participate on committees to develop consensus standards and specifications. ASAE is the principal engineering standards-writing organization for agriculture equipment, systems, and processes, supporting a global system of international standards. ASAE standards exemplify the cooperation of interest groups working together to develop standards acceptable to all.

**Other USDA Participation.** Some of the professional and industrial organizations with which USDA employees have worked in the developing of standards have been the National Association of Conservation Districts (NACD), Land Improvement Contractors of America (LICA), Associated General Contractors (AGC), Farm and Industrial Equipment Institute (FIEI), and the American Society of Civil Engineers (ASCE).

Many of the USDA agencies have made contributions to the development of agency and industry consensus standards. The most active have been employees of the Forest Service, Extension Service, and SCS.

**Soil and Water Conservation Standards**

SCS is working with technical and professional societies to establish technical standards for systems of soil and water conservation measures. These groups are involved with hydrology, hydraulics, geology, soil mechanics, landscape architecture, stream mechanics, structures, and corrosion. The concept of developing industry standards by consensus is being expanded to include soil and water conservation in view of the increasing regulation of natural resources conservation by State and local governments.
Based on proven standards, a parking lot storm runoff management system of multiple outlets safely carries away intense rainfall—controlling flooding and erosion. (Gene Alexander, SCS, OH-60,975)

Expanding Technology

Significant technological progress has been made in the basic and applied soil and water sciences. This has led to greater public understanding of resource degradation as well as support for resource conservation. The improved technology is the product of public and private institutions, organizations, and individuals.

The effort was spurred by the environmental concerns of the 1960's and 1970's. Studies were initiated to assess requirements of the National Environmental Policy Act of 1969. They ranged from examining whole watersheds and river basins to determining how a soil particle was moved from a point of origin and what chemicals or organic compounds went along for the ride.

These studies produced reports, standards, criteria, rules, and regulations. The work was done largely through contracts with private firms, through contracts and agreements with colleges and universities, and by employees in Federal and State agencies.

The data that was produced has been used by engineers, architects, and other technicians as well as by companies, contractors, and government agencies, knowledgeable in conservation and development of soil and water resources.
A stone-center sodded waterway that safely handles storm runoff is based on proven standards that allow for flexibility, esthetics, and low-cost maintenance. (J.F. Hazen, SCS, MD-30,501)

Future Partnership
A reduced Federal work force and increased responsibilities in carrying out the 1985 Food Security Act have made it necessary for USDA to involve more people in soil and water conservation projects. Conservation contractors, land users, and volunteers are being trained to layout, install, and check the simpler practices. Special interagency and Federal-State agencies are developing training modules for use by local groups and individuals. This concept also is being applied to dam safety so that landowners and sponsors fully understand their responsibilities for operations, maintenance, and safety inspections.

A Federal-State-local partnership must be established and maintained to manage the Nation’s soil and water resources. This network is essential for technology transfer and feedback through personal contacts and participation. The 1985 Food Security Act and the Clean Water Act of 1987 present opportunities for Federal-State-local cooperation on soil and water conservation projects, including some dealing with nonpoint source pollution control. SCS can assist in developing standards and specifications that will be acceptable to all groups.