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Roy M. Gray

PLANNING AND PROGRAMING IN THE SOIL CONSERVATION SERVICE

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PLANNING AND PROGRAMING

IN THE

SOIL CONSERVATION SERVICE

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INTRODUCTION

The Administrator of the Soil Conservation Service, U.S. Department of Agriculture, in his 1969 message, asked the employees of the agency to "look beyond the present and attempt to develop a new vision of the kind of America which is emerging and to determine our role in helping to shape that America." The result of his request is the SCS Framework Plan--Soil and Water Conservation for a Better America.[1]

The plan evolved in a setting of challenge and change. The innovations, both in technology and institutions, that have characterized the years since World War II have entered our lives incredibly fast, have upset countless patterns of life and livelihood, and have modified the very quality of existence in this country.

The most apparent change has been in the unprecedented urbanization of the nation reflected in the expansion of suburban areas and the conversion of substantial areas of agricultural land into subdivisions and other uses. Since 1945, 60 million people have been added to the population, a number almost equal to the population of the country in 1900 and more than the present population of the United Kingdom, France, or West Germany.[2]

The factors of population growth and mobility alone would have generated a reexamination of traditional concepts of land use, conservation, and

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[1]U.S. Department of Agriculture, Soil Conservation Service. A Framework Plan: Soil and Water Conservation for a Better America. Washington, D.C. 1972.

[2]Letter from Norman Wengert, Attorney and Professor of Political Science, Colorado State University to Gordon K. Zimmerman, Executive Secretary, National Association of Conservation Districts. 1972.

resource development, but their influence has been reinforced by what appears to be rapidly developing changes in national values and goals. It is difficult to identify and measure the impacts of these changing values and goals when one is in the midst of the change process, but evidence is accumulating that they are occurring and their existence exerts influence on the use and development of natural resources.[3]

One of these changes is in increasing concern for visual beauty which has been expressed in a growing concern for the environment and the quality of life. It would be a mistake to assume that there is a concensus on what those terms mean or on what specific actions should be taken to preserve the environment and insure an improved quality of life. Conflicting views concerning the conservation and use of natural resources have emerged. Some believe that we need to develop a new ethic with less emphasis on growth and productivity. Others suggest that as population growth and productivity increase, we should be concerned with the negative consequences of resource development. The SCS Framework Plan, we feel, is one that balances the quantity and quality aspects of resource conservation to improve the lives of Americans. We feel that it is a plan that reflects the changes that are occurring in this country and the kind of society that is emerging.

The plan recognizes that these changes play an important role in determining the needs for resource conservation and use. It is designed to be

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[3] National Association of Conservation Districts. The Future of Districts. Report and Recommendations of the NACD Committee on District Outlook. Washington, D. C. 1965.

flexible for use in any geographic area of the country. It is targeted to a period beyond 5 years and represents a systems arrangement that relates the technical aspects of the soil and water conservation job to the total economic, social, and environmental effort.

THE HISTORICAL BASE FOR THE FRAMEWORK PLAN

Early American leaders were concerned with conservation of natural resources. George Washington not only wrote about it but developed methods for checking erosion on his lands. One of the first official government actions on conservation occurred between 1830 and 1845 when stands of oaks along the Gulf Coast in the public domain were reserved for use by the Navy for shipbuilding.

Among subsequent milestones, each of which marks the beginning of some phase of conservation, are the establishment of the U.S. Department of Agriculture in 1862, which from the beginning has been devoted to better use of land resources; the Hayden and Powell expeditions into the West in the 1870's, which laid some of the groundwork for inventory and classification of land; and the reservation of Yellowstone National Park from the public domain in 1872.

In the early 1900's, public attention was focusing on conservation. President Theodore Roosevelt is credited with establishing the "National Forest" system and, in 1908 at the National Governors' Conference, emphasized the urgent need for a coherent plan of developing the natural resources of the country. He insisted that the objective of conservation was not to lock up natural resources, but to use them in such a way that would maintain or increase their productivity for the next generation.

In 1935 Congress passed legislation providing for soil conservation work on a permanent basis, establishing the Soil Conservation Service as the agency to carry out the program and transferring the agency from the Department of Interior, where it had been known as the Soil Erosion Service, to the Department of Agriculture.[4]

In its first years, SCS developed a modern technology of erosion control and soil conservation. Soil surveys were improved, land capability determinations devised, and conservation practices invented, improved, and adapted to current conditions. It soon became apparent that local citizen involvement would be required if the soil and water conservation effort were to be successful. This recognition led to the enactment of state legislation to enable local people to establish soil and water conservation districts. These governmental organizations have limited governmental administrative powers but provide a means for citizens to develop a long-range conservation program and to participate in the planning and installation of soil and water conservation measures needed to protect and improve the land and water resources.[5]

Today 3,000 soil and water conservation districts cover more than 98 percent of the privately owned lands of the nation and include over 1.3 billion acres of land in the 50 states, Puerto Rico, and the Virgin Islands.

At the time soil conservation districts were being organized, a primary concern was protecting farmland and ranchland. Topsoil was blowing and

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[4]Charles M. Hardin. Food and Fiber in the Nation's Politics. Technical Papers prepared for the National Advisory Commission on Food and Fiber. 1967. See also, National Advisory Commission on Food and Fiber. Food and Fiber for the Future. Report of the National Advisory Commission on Food and Fiber. Washington, D. C. 1967.

[5]Burnell Held and Marion Clawson. Soil Conservation in Perspective, Resources for the Future. Johns Hopkins Press, Baltimore, Md. 1965.

washing away. The need for soil and water conservation was seen as an almost exclusively agricultural problem.

In the 1960's the increasing pressure of an increased population, growing technology, and affluence intensified public attitudes toward resource conservation. The effects of pesticides, pollution of Lake Erie, smog in the cities, and oil slicks in the oceans became public concerns. More closely related to the SCS mission were the control of agriculture-related pollutants relating to animal wastes, eutrophication of streams and lakes, destruction of fish and wildlife habitat, widespread sedimentation damage of streams and lakes, and destructive land use practices.

The increased interest in conservation and the environment is more than a fad. The mounting of concern for quality of life and environmental improvement in America is reflected by a new set of priorities in resource conservation.

CONSERVATION OF RESOURCES IN A TIME OF CHANGE

It is against the background of change that the use and conservation of resources must be viewed. At a perceptive paragraph from the keynote address at the White House Conference on Conservation 10 years ago, the then Secretary of Interior, Stewart L. Udall commented:

> Resources are caught up in the cycle of dynamic change and we must now program and make a bold, forward thrust to meet the demands of tomorrow. The quiet conservation crisis of the 1960's has resulted neither from folly nor ignorance, but from our very success as a nation--it touches our total environment, affects all of our resources, and is heightened by the demands of our burgeoning cities, thriving industry, and expanding population.[6]

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[6]Stewart L. Udall. The Quiet Crisis. Holt, Rinehart and Winston, New York. 1963.

The Framework Plan reviews SCS program activities, charting new courses for the agency but retaining those past and present activities and relations which continue to be meaningful in the 1970's. It points out important changes in direction and places emphasis on strengthening selected SCS activities, including:

--Developing an improved system that uses recognized standards for quality and quantity for monitoring natural resource conditions and the environment.

--Finding new approaches for treating difficult and persistent erosion and sediment problems.

--Making pollution prevention and abatement an integral part of the conservation program.

--Providing technical assistance in agriculture-related waste management.

--Helping to develop a stream classification system and standards for stream management.

--Assisting state and local governments with legislation, ordinances, regulations, and other planning criteria that lead to prudent land use and treatment.

--Working more intensively with state and local governments on conservation plans, projects, and measures in rural and urban areas.

--Improving soil and water conservation technology by encouraging needed research and development.

--Encouraging preservation of areas with unique characteristics for agriculture, recreation, wildlife use, and historical sites.

--Seeking new approaches to programs that lead to the development,

improvement, and protection of privately owned wetlands and coastal marshes.

--Helping communities to develop and implement plans for the management and protection of lands subject to flooding.

--Developing a system for a rapid storage and retrieval of resource data.

The emphasis and strengthening of the above activities by SCS points out the importance of institutional arrangements in the use and conservation of natural resources. Sanford S. Farness of Michigan State University, in discussing environmental problems in an urban society, puts it this way:

> These considerations indicate the need for unified environmental research and planning along with citizen involvement and education as the necessary institutional basis for effective application of modern knowledge and technology to current environmental problems.[7]

The SCS Framework Plan recognizes that local citizens must actively participate in resource planning and development in order to enlighten themselves about resource problems and exercise their rights in a democratic society. As the necessity for planning increases--and it must in an urbanizing society--the requirement of citizen participation and involvement becomes more important because planning is a process of inventorying, considering alternatives, and allocating priorities to activities; it is the process of selecting the major values which will govern future action. The plan recognizes soil and water conservation districts as institutions for effective leadership and for involvement of people in a broad program

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[7]Sanford S. Farness. Man-Environment Problems in an Urban Age; Resources, the Metropolis, and the Land Grant University. Publication 410. Cooperative Extension Service, College of Agriculture, University of Massachusetts, Amherst, Mass. 1963.

of soil and water conservation. It is designed to help SCS in its work with conservation districts, other organizations, agencies and individual resource users.

DEVELOPMENT AND CONTENT OF THE FRAMEWORK PLAN

The conservation of natural resources and the environment is a big job. It is a job that is growing faster than the resources available to meet it. Mounting pressures on natural resources and the environment require the most effective use of the resources allocated to carry on soil and water conservation measures.

President Nixon in his 1970 message to Congress transmitting the first annual report of the Council on Environmental Quality, said:

> . . . .The uses to which our generation puts the land can either expand or severely limit the choices our children have. The time has come when we must accept the idea that none of us has a right to abuse the land, and that on the contrary society as a whole has a legitimate interest in planning proper land use. There is a national interest in effective land use planning all across the Nation.[8]

Land use and subsequent land and water management is the key to what many people call environmental issues today.

Land use represents the true point of conflict between man and the natural environment. It is through the wise use or the misuse of land that man makes his most direct and significant impact on the overall quality of the area in which he chooses to live, to make a living, or to enjoy some form of outdoor recreation--man's total environment.

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[8]Council on Environmental Quality. Environmental Quality, the First Annual Report of the CEQ. Washington, D. C. August 1970.

Program planning and management control is the process by which program dollars are translated into the achievement of mission objectives. To choose wisely between alternatives, it is necessary to understand the cause-effect relationships between program objectives, program activities, and program costs. Issues need to be disclosed and alternative program approaches need to be developed and evaluated.

Present requirements call for program planning and management systems that are "output" oriented. Dwight Ink, Assistant Director for Executive Management, Office of Management and Budget, declares that too many management systems are input oriented, designed in terms of input rather than output criteria. He argues for management systems that are oriented toward people problems as well as resource problems and are therefore far more useful in assessing needs and results.

Elmer Staats, Comptroller General of the General Accounting Office, implies the same. He asserts that without a link between output measures (the program objectives the agency is held accountable for) and measures of benefits and effectiveness, the use of output measures may be self-defeating because the quality of results (effects and benefits) may be overlooked in attempts to meet stated program accomplishment goals. He goes on to say that in agency checks of program evaluation, the General Accounting Office will be looking into the linkage between program accomplishments (inputs) and benefits (outputs).

The foregoing comments illustrate the need for a systems approach that relates inputs to outputs. This need was one of the primary considerations in the development of the Soil Conservation Service Framework Plan.

The input-output approach, not to be confused with the Leonteif Econo-

metric Model, sets forth the unifying framework for program planning and management control. It identifies the important elements in the process and the relationships between them. It provides the systematic basis for applying the theory of choice to analysis of alternatives and provides the basis for linking long-range planning to the shorter period programing and budgeting and to the current operations control.

At this point, it might be worthwhile to discuss the differences between program planning, programing and budgeting, and operations control as these terms are used in the Framework Plan.

Program planning is a creative and analytical process concerned with the need, basis, rationale, objectives, and design of public programs. Its goal is the development of a long-range plan that sets forth broad program strategy, policy, priority, and goals. While it focuses on objectives and benefits, the planning perspective moves to effects, accomplishments, activities, and costs. Alternative strategies and directions are developed and evaluated as issues are surfaced and explored. The resulting long-range plan serves as a blueprint for needed authorities and for the shorter range programing and budgeting process.

Programing and budgeting is the executive, administrative, and legislative process of deciding on the nature and level of proposed program accomplishments and costs for a specified time period. It is concerned with the activities to be undertaken to produce the proposed accomplishments and with the resources needed to carry out the proposed activities. Work scheduling to provide a smooth flow of accomplishments consistent with the efficient use of resources is an important part of the process. The effort is directed toward the development of a multi-year program and financial

plan that provides for optimum achievements in terms of the general priorities and goals set forth in the long-range plan. The program and financial plan is the link between the long-range framework plan and the shorter-range programing, and serves as the basis for operations control.

Operations control is the supervisory process of obtaining and managing the resources to carry out program activities. Its concern is with the efficient management and scheduling of people and materials to produce planned outputs supporting the mission objectives. Current progress and costs are monitored and compared with the program and financial plan. There may be instances when goals and projections set forth in the program and financial plan will need to be further detailed as to timing for effective control. Adjustments in operations or in plans are made as needed. Post-period analysis of progress and costs are useful for planning and management control activities.

The program planning and management control process takes place over extended periods of time and at various points within the organization. To be truly effective, the various parts of the process must be related. This demands the existence of a unifying structure or framework plan.

The Framework Plan

The framework for program planning, programing and budgeting, and management control is a representation of the cause-and-effect relationships between program objectives, benefits, accomplishments, activities, and costs. It has been developed following a rational, orderly scheme for classifying program and related data. Its primary functions are to help organize the thinking within the agency, to communicate ideas, and control the direction of agency operations. It reveals important planning and management control

issues and highlights the need for analysis. It provides the basic structure for the management information system, which is presently under development.

The Framework for Soil and Water Conservation (Chart 1) outlines the key elements of the Framework Plan. It shows the long-range planning sequence which is the basis for the plan. It begins with a statement of objectives. Benefit goals to achieve the objectives are next. These represent the values of the conservation effort to society. They may be social, environmental, or economic in nature. Examples of benefits include improvements in recreational opportunities, in the enjoyment of the use of unpolluted streams, in improvement in health resulting from decrease in air and water pollution, in increased economic efficiency in the use and management of soil and water resources, and in increased job and income opportunities in rural areas. Effects are the changes in the physical condition of soil, water, and related benefits which lead to realization of benefits and to the accomplishment of objectives. Changes and improvements in resource management systems result from program accomplishments, program activities, and program costs by all agencies and groups concerned with resource conservation and use.

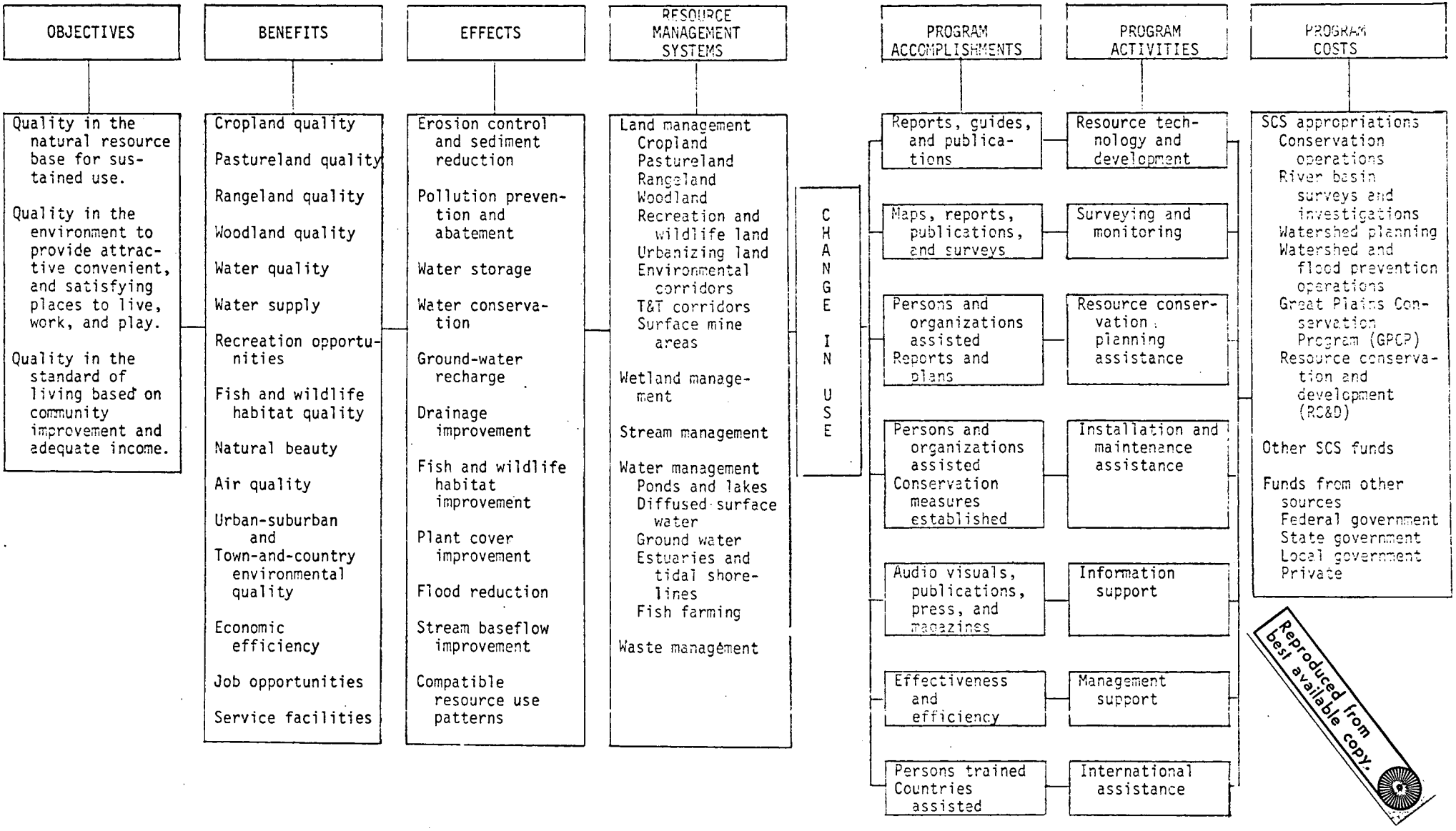
Mission Objectives

The mission objectives of the Soil Conservation Service are the ultimate aims of SCS activities--the ends it is striving to achieve. The objectives are stated in the Framework Plan:

> The mission of the Soil Conservation Service is to assist in the conservation, development, and productive use of the Nation's soil, water, and related resources so that all American may enjoy:
>
> --Quality in the natural resource base for sustained use;

CHART 1.

FRAMEWORK FOR SOIL AND WATER CONSERVATION



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--Quality in the environment to provide attractive, convenient, and satisfying places to live, work, and play;

--Quality in the standard of living based on community improvement and adequate income.

These broad objectives describe why the Soil Conservation Service exists. Progress toward achievement is not always measurable in quantitative terms.

The Soil Conservation Service, like any federal agency, is normally given its objectives by legislative authorization and by periodic policy statements by the President or other officials in the Executive Branch. Since conditions change over tiem, the agency is responsible for periodically reviewing its objectives and proposing legislative or administrative action to keep objectives current.

Conservation Benefits

In the Framework Plan, benefits are the values or satisfaction received by people as a result of SCS activities and accomplishments. They are defined in a way that permits measurement. Benefit terms are used to describe and scale the achievement of objectives, even though the relationship between them is not precise.

Benefits are normally categorized in three broad groupings:

1. Additions to national output (increased economic efficiency);
2. Improved income distribution (for specified target groups or target areas);
3. Improvement in nontangible (aesthetic) conditions or values (monetary measurement of which is rather meaningless).

Benefits are set forth in terms such as improved land and water quality, enhanced scenic quality, increased safety, and additional jobs.

CONSERVATION EFFECTS

Effects are the direct physical results of changes in resource management systems. They are normally set forth in terms that parallel major conservation and resource management problems; e.g., erosion control, water conservation, flood control, and pollution abatement. Effects are commonly classified into two broad groupings--onsite and offsite. Onsite effects, such as changes in erosion, changes in production, etc., occur on lands occupied by the resource management system under consideration. Benefits and costs from onsite effects commonly accrue to and are incurred by the landowner or operator responsible for the resource management system. Offsite effects such as changes in sediment delivery or changes in streamflow accrue on lands removed from those occupied by the resource management system and result in benefits and costs that are designated as "externalities."

Joint effects are common in conservation work. Reduced erosion, reduced sedimentation, reduced flood peaks, water conservation, and increased soil productivity, for example, all may result from one modification of a single resource management system.

Measurements of effects, in combination with data indicating the potential for benefits (the significant economic and cultural circumstances surrounding the occurrence of the effect) are used to estimate benefits. Measurements of effects are also used to indicate the effectiveness of the conservation program.

RESOURCE MANAGEMENT SYSTEMS

Resource management systems are the combinations of intentional man-generated developments, treatments, and forces acting on a naturally inter-dependent area of soil, water, and related resources to produce the sought-for conservation effects and benefits. For convenience they are grouped into five broad classifications: land, stream, wetland, water, and waste management systems.

A land management system is the combination of use and treatments of a given land area. Six basic land management system types are identified in accordance with the primary use of the land, i.e., cropland, pastureland, rangeland, woodland, recreation-wildlife areas, and special use systems.

Improvements of land management systems are those changes in land use or treatments that bring the system more nearly in conformity with conservation standards.

A stream management system is the combination of resource uses, developments and treatments (including major structural measures) in natural hydrologic units (watersheds). A stream management system is supported by the land management systems making up the watershed area.

PROGRAM ACCOMPLISHMENTS

Accomplishments are the products and services produced directly by program activities: soil surveys, conservation plans prepared, owners and operators assisted, and improvements made in resource management systems. Specific accomplishments are identified and defined for each

program activity. They are selected on the basis of their usefulness for programing, for work measurement, or for effect and benefit measurement.

Resource management system accomplishments are evaluated directly in terms of effects and benefits. Accomplishments for program activities other than installation and maintenance activities are evaluated primarily in terms of their contribution to the conservation process. Many resource conservation planning accomplishments result in benefits directly by preventing losses in values associated with unsound land use decisions.

PROGRAM ACTIVITIES

A program activity is a subdivision of a program with which costs can be identified and which produces an identifiable accomplishment. Normally program activities are separately identified only when their product or service is particularly useful for effect or benefit measurement, for annual or longer-term programing (work scheduling), or for work or cost measurement.

The activity structure classifies program activities and arranges them in accordance with their contribution to the conservation process. The process begins with the identification and measurement of resource problems and opportunities. It moves on to the development of possible or alternative approaches and solutions, to reaching decisions about priorities, goals, and actions to be taken, and it culminates in the installation, operation, and maintenance of improved resource management systems. In addition, a number of activities--e.g., personnel administration, accounting, and information work--are recognized that support two or

more stages of the process. The resulting major classifications for the program activities of SCS are:

Technology Development

Surveying and Monitoring

Resource Conservation Planning Assistance

Installation and Maintenance Assistance

Information Support

Management Support

International Assistance

PROGRAM COSTS

Costs are the goods and services consumed in carrying out program activities. They are commonly referred to as "inputs." They may be expressed in a variety of ways, e.g., dollars, man-years, vehicle miles, and office space. Costs measured in dollars have been traditionally classified in the budget in terms of object class. Costs measured in terms of manpower have been traditionally classified by grade and salary.

Service program costs are usually funded as appropriations from Congress. The appropriation structure of SCS is not identical with its activity structure. This requires a cross-classification of costs for budget purposes.

Costs are identified with specific program activities and thus with specific program accomplishments. This identification is made through the operation of the accounting system. Cost-accomplishment comparisons are generally known as "work measurement".

Costs identified with installation and maintenance accomplishments may be compared with the resulting effects and benefits. These cost-effectiveness or cost-benefit comparisons usually require an analytic process.

Only a part of the costs of program accomplishments are borne by the Soil Conservation Service. Private, state, local, other USDA, and other federal agencies contribute to program accomplishments and incur costs for their contribution. These costs are important considerations in program planning.

FUNCTIONAL RELATIONSHIPS

Benefits and effects depend on accomplishments. The achievement of one kind of accomplishment depends on the existence of another. Costs are determined by activities. These are the important relationships involved in program planning and management control.

Analysis seeks to identify the principal variables in these functional relationships and to measure their role and influence. Predictions based on knowledge about these relationships are used to help managers make decisions about future program activities. Variables that can be controlled to a degree by managers and those which quantify the kind, amount, and timing of accomplishments are significant. Target groups, geographic location, program approach, and time are variables that influence costs, activities, accomplishments, effects, and benefits.

Analysis supports the planning process. For the most part, analysis seeks to quantify the relationships set forth in the framework. Analysis usually should deal with the options open to the program manager for whom

the analysis is being done. Special analysis seeking to improve the general character or particular aspects of the framework will be needed on a continuing basis.

The Framework in Action (Chart 2) shows the flows for planning and programming.

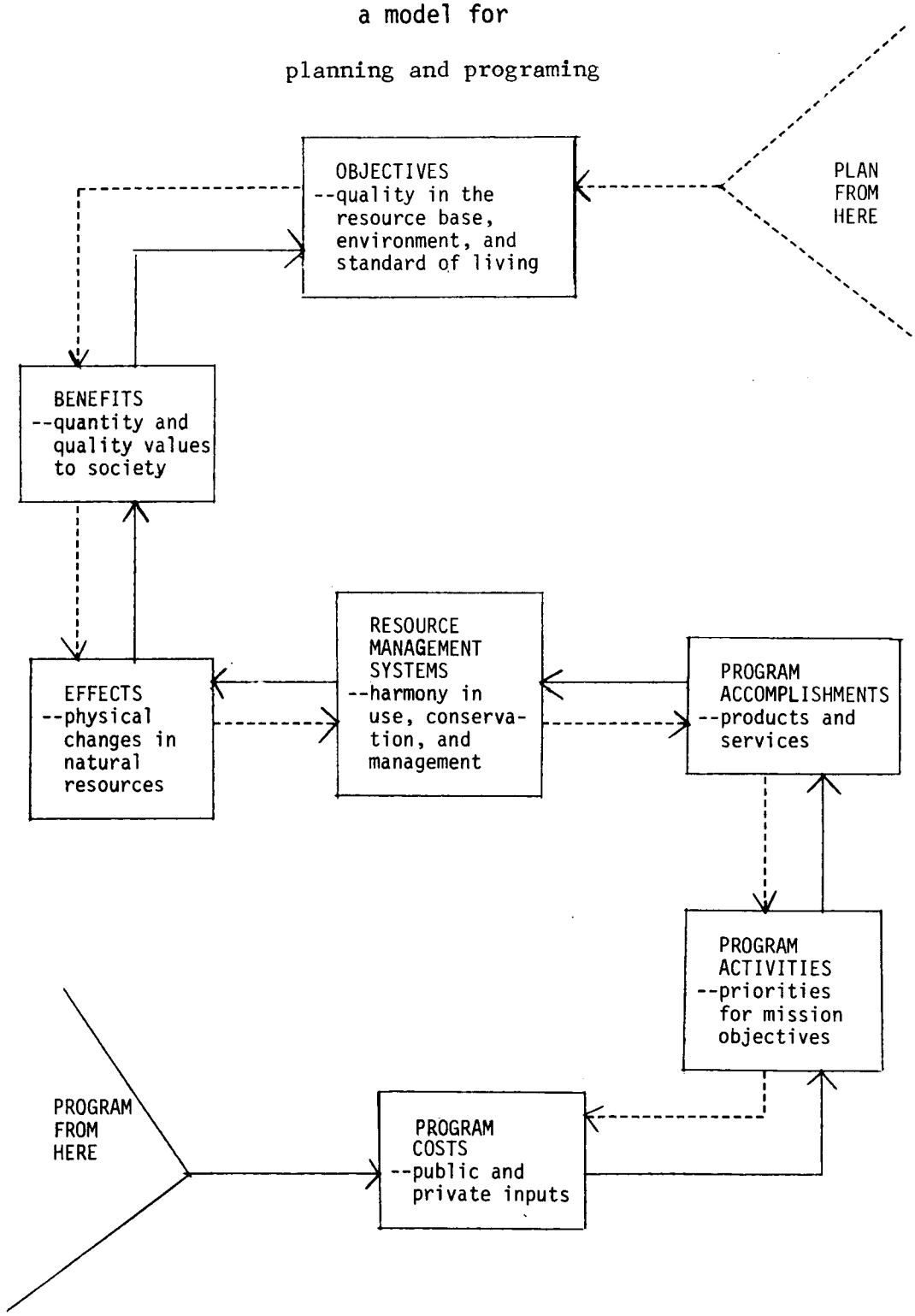
In planning, the flow begins with the objectives. The attainment of objectives is dependent on the attainment of benefits. Benefits represent the values of the conservation effort to society as natural resources are used and managed according to quality standards. They are realized by planning for effects, which are the physical results of changes and improvements in resource management systems. Resource management systems are the pivotal items in planning. Goals and future needs planned for resource management systems bring about effects and benefits and determine the program accomplishments, program activities, and program costs that will be required.

In programing, the flow is reversed. Objectives are known. Emphasis is on program costs, activities, and accomplishments to bring about needed changes in use and improvements in resource management systems. These systems are the pivotal items in programming as well as in planning. Effects and benefits determine where priorities for changes in use and for improve resource management systems should take place. Program costs determine the kinds and amounts of program activities. Activities lead to program accomplishments. Program accomplishments are evaluated primarily in terms of their contribution to mission objectives and goals. Accomplishments culminate in changes in use and in the installation, operation, and maintenance of improved resource management systems, which lead to effects, benefits, and objectives.

CHART 2. -- FRAMEWORK IN ACTION --

a model for

planning and programing



IMPLEMENTING THE FRAMEWORK PLAN

The Framework Plan is an output-oriented plan. The output of the Soil Conservation Service has been well summarized in the three basic mission objectives of (1) quality in the natural resource base for sustained use, (2) quality in the environment to provide attractive, convenient, and satisfying places to live, work, and play, and (3) quality in the standard of living based on community improvement and adequate income. According to the foreword of the Framework Plan, it is designed to "guide the Soil Conservation Service in its mission in this decade and in those ahead." The methodology of measuring SCS output in terms of changes in resource conditions and environmental parameters is in the process of development. Under this concept, the installation of resource management system components are considered as system inputs which cause changes in resource conditions and in the quality of the environment.

Development of the methodology needed to evaluate the condition of natural resources and to relate the activities of SCS to its mission objectives is currently one of the major tasks of the Program Planning Division. If the Framework Plan is to be effectively implemented, two objectives must be achieved: 1) sound knowledge of the present condition of the resource base must be secured as a starting point, and 2) the degree to which each of the program activities contribute to the realization of effects and benefits must be known.

In carrying out the first objective, we are working to develop the procedures needed to monitor the quality condition of the resource management systems which make up the resource base. This will involve the

establishment of "quality standards" for resource conditions. Individual tracts of land with attendant soil and water conservation measures will be rated according to a standard. We envision that the resulting information can be used in several ways: first, it can be used with individual land users to point out the condition of their resources and to help them to decide on the needed measures to achieve their objectives; second, it can be used in the planning processes of regional planning commissions and councils of government to assess the conditions of an area's resources; and third, when done on a sampling basis it can be used to monitor the condition of the Nation's resource base.

A second objective of the Program Planning Division, at the present time, is to develop the methods and procedures needed to relate the activities of SCS to mission objectives. We feel that we can do this by first developing analytical models to help us determine the impact of our program accomplishments which lead to changes in resource management systems or effects and benefits. For example, we need to know the impact of the installation of resource management system components (soil and water conservation measures) on stream and other environmental parameters such as (1) runoff reduction, (2) reduction of sediment in the streams, (3) reduction of agriculture-related pollutants in streams, (4) reduction of soil particles in the air (in wind erosion areas), and other effects. Each model will be specific to an area, and at this time we feel that the basic area for a model will be the land resource area. The model will include the effects or benefits which are important in the areas and the major components used in that area.

An analytical model that we are in the process of developing uses multiple regression to study the relationships between resource management system components and the effects and benefits that they generate.

Following the development of the analytical model that relates components and effects, coefficients from this model will be incorporated into a linear programing model to assist in selecting the combinations and quantities of components that will minimize the cost of achieving a specified level of the benefits or effects. We will analyze the total cost of resource management system component installation and the cost to SCS in terms of technical assistance to determine the differences in the basic solutions.

The use of the techniques of statistical analysis and mathematical programing routines such as linear programing as management tools in SCS will mean that we will be using Automatic Data Processing (ADP) and computer technology more in SCS than in the past.

Summary

The Framework Plan for the Soil Conservation Service is based on the premise that a cooperative federal-state-local program to assist with the conservation of soil, water, and related resources is vital to the welfare of the nation's people. The changing social, economic, and environmental conditions make the wise use and management of resources even more important today than at any time in history.

The Soil Conservation Service is concerned with the complex interactions between people and their environment, and the focus of its effort is to:

--Protect and improve the nation's soil and water resource base;

--Improve environmental quality, especially as it pertains to soil and water problems in town-and-country and urban-and-suburban environs;

--Support rural development that will result in increased job opportunities, better facilities, a more stable economy, an improved standard of living, and a better place in which to live;

--Consider the needs and purposes of all life forms.

The long-range Framework Plan, in combination with shorter-range program and financial planning and related operations control, should provide a firm basis for allocative decisions that will make the optimum contribution to these objectives.

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15. Supplementary Notes

16. Abstracts

This paper focuses on the planning and programing processes of the Soil Conservation Service, U. S. Department of Agriculture. It traces the history of soil and water conservation activities in this country and calls attention to the impact of technological, economic, social and environmental changes which influence the use and development of resources. It highlights the development and concepts of the SCS Framework Plan, "Soil and Water Conservation for a Better America", which was published in 1972. It points out the "output oriented" approach to programing and management control which is inherent in the Framework Plan. It also emphasizes the need for quantifying the linkages between output measures and public and private inputs if the objectives of resource management are to be met.

17. Key Words and Document Analysis. 17a. Descriptors

Natural Resources 0503
Planning, Management 0501
Soil Conservation 0807, 0203
Water Conservation 0203, 1302

17b. Identifiers/Open-Ended Terms

Soil Conservation Service
Planning and Programing

17c. COSATI Field/Group

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