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Establishing Planning-Programming Budgeting Systems in two non-Defense Departments

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ESTABLISHING
PLANNING-PROGRAMMING-BUDGETING
SYSTEMS IN TWO
NON-DEFENSE DEPARTMENTS

by

Carl Frederic Juncker

ESTABLISHING PLANNING-PROGRAMMING-BUDGETING SYSTEMS

IN TWO

NON-DEFENSE DEPARTMENTS

by

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Bachelor of Business Administration

The University of Texas, 1956

**A Thesis Submitted to the School of Government and Business
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CHAPTER I

INTRODUCTION

Budgeting in the United States Federal Government has evolved from a basic theory which centered on safeguarding appropriations against careless and malefficient administration to one which makes the budget a planning and management tool. The evolution has culminated in recent years in the development of the concept of a Planning-Programming-Budgeting System which more closely integrates planning and budgeting through programming.

This concept was introduced in the Department of Defense in 1961. In the relatively short time since its application to military budgeting at the department level, its success has become widely known. The success has fostered the extension of the use of the system to the non-defense departments in 1965. The extension was an effort to adapt the Department of Defense's Planning-Programming-Budgeting concept to the civilian programs of the non-defense agencies. Former Budget Bureau Director Schultze said:

The system [Planning-Programming-Budgeting] that has been set up by Mr. McNamara . . . has been a highly successful effort. The PPB system which we are developing in civilian agencies is based upon - but is not a part or a slavish imitation of - this effort.¹

¹Charles L. Schultze, statement before the Subcommittee on National Security and International Operations of the Committee on Government Operations, Hearings, Planning-Programming-Budgeting, U.S. Senate, 90th Congress, 1st Session, August 23, 1967, p. 27. Cited hereafter as Senate Committee on Government Operations, PPBS Hearings.

It is the purpose of this paper to examine the nature of the system being implemented in two non-defense departments by analyzing and comparing the program structures, system mechanics, application of cost-utility analysis, and to report the progress, problems, and potential for the system. This has been undertaken with particular attention to the Departments of Agriculture and Health, Education and Welfare in order to provide specific examples of the areas studied.

The examination was carried out by comparing the requirements of the theory of the Planning-Programming-Budgeting System and the implementing directive of the Bureau of the Budget, with the approaches taken by the two non-defense departments in implementing the system. The study has been subdivided into department program structures and organizations and the application of cost-utility analysis to the departments' programs. By reporting the activities, achievements, and problems of these two departments, it is possible to relate better the opinions of responsible officials and professionals concerning the problems and progress in adapting Planning-Programming-Budgeting to the civilian setting.

Methods of Research

Research has been focussed primarily on the written record. This has involved a review of some of the writings of authorities on budgeting, including the developers of Planning-Programming-Budgeting System concepts. In addition, the reports of hearings held by the U.S. Senate Committee on Government Operations and the Joint Economic Committee were researched

to obtain insight into the approaches taken during the implementation phase of adapting the system to the non-defense departments and to obtain opinions concerning progress, problems, and prospects for the system's adaptation to civilian departments. These have been supplemented by knowledge gained from articles written by professionals on subjects related to the implementation of the system in the civilian departments or which treat the system theory and its relation to the elements of the system in the non-defense setting.

The library research has been supplemented with information obtained in personal interviews and lectures by government officials. Of particular value were the interviews and materials provided by officials of the Departments of Agriculture and Health, Education and Welfare. Although the system is relatively new in these departments, busy officials were most generous with their time and knowledge.

CHAPTER II

EVOLUTION AND OBJECTIVES

Early Budgeting Reforms

The perspective for a discussion of the evolution of Federal budgeting is found in the writings of Allen Schick:

. . . it is anchored to a half a century of tradition and evolution. The budget system of the future will be a product of past and emerging developments; that is, it will embrace both the budgetary functions introduced during earlier stages of reform as well as the planning function which is highlighted by Planning-Programming-Budgeting.¹

The work of the Commission on Economy and Efficiency established by President Taft in 1911 influenced to a large degree subsequent reforms in budgeting. It may well have set the course for the evolution of budgeting to the emerging Planning-Programming-Budgeting by mention of a program budget in its second recommendation:

. . . the commission recognized that the Congress should be given an opportunity to consider the budget in terms of programs or functions [underlining added] . . .²

As is well known, the Commission's report did not result in legislation to establish a Federal budget. The mood in the Congress at that time was one which resulted in rejection of President Taft's recommendation in

¹Allen Schick, "The Road to PPB: The Stages of Budget Reform," Public Administration Review, XXVI, December 1966, p. 243.

²Arthur Smithies, The Budgetary Process in the United States (New York: McGraw-Hill Co., Inc., 1955), p. 69.

1912. The work of the Commission and the resulting Presidential recommendations were significant, however, in that they recognized the responsibility of the Executive for preparation of a national budget as an instrument of executive management and control. This key concept has served as a foundation for all budgetary development. While political scientists may dismiss the rejection of Taft's budgetary recommendations in view of the political climate of the day, the literature suggests a more fundamental reason for the delay in establishing a national budget system. A controversial issue of the time involved the constitutional aspects of how a budget system would fit into a governmental structure based on separation of powers.¹

The Budgeting and Accounting Act of 1921 attempted to answer this question. The time was right following World War I for budget reform. Many members of Congress felt that reform would result in expenditure and tax reductions and, after major wartime costs, they were looking for relief. Instead of handing its budget prerogatives to the Executive branch, the Legislative branch saw the Executive budget as a means for controlling the expenditures of the Executive department. The outcome can be viewed as a compromise because the question of control was largely unresolved. According to Smithies:

The Act does not encourage the flexible appropriation procedure envisaged by the Taft Commission. While lumpsum appropriations

¹Jesse Burkhead, Government Budgeting (New York: John Wiley & Sons, Inc., 1959), p. 26.

are countenanced, the President is required to submit detailed estimates of how those appropriations will be spent, a requirement which may in fact limit the discretion legally permitted by the broad appropriation.¹

The question of dominance of the Executive over the Legislative branch in budgetary matters is still at the crux of budget reform today. In many ways, the Planning-Programming-Budgeting System faces resistance in the Congress today because it is viewed as a further erosion of Congressional budget prerogatives in favor of more control and flexibility by the Executive branch.

Nevertheless, the Budgeting and Accounting Act of 1921 represented a major step forward in budget evolution. It had three main purposes:

- (1) To provide for a comprehensive Presidential budget
- (2) To provide the President with the Budget Bureau to assist him in the preparation of the budget and strengthen his authority over the executive departments.
- (3) To assign responsibility for accounting to a General Accounting Office under a Comptroller General.²

The literature is in basic agreement in describing the early 1920's as the era in which the control aspects of budgeting were emphasized. The new Bureau of the Budget accepted the expected mission of promoting economy and efficiency in government. An expression of this emphasis is found in the writings of the first Director of the Budget Bureau:

¹Burkhead, op. cit., p. 20.

²Smithies, op. cit., p. 72.

. . . the Bureau of the Budget is concerned only with the humbler and routine business of Government. Unlike cabinet officers, it is concerned with no question of policy, save that of economy and efficiency.¹

Several subsequent measures broadened the Executive budgeting responsibilities. One of these was the Reorganization Act of 1939 which placed the Bureau of the Budget closer to the President in the Executive office, rather than "under" the Treasury as it had been originally. Another was the Corporation Control Act of 1945 which brought government controlled corporations into the budget system.

The next phase of budget reform had its roots in Keynesian economics and the New Deal and in the subsequent growth in governmental functions. As significant as these developments were, however, a more important contribution came from the Employment Act of 1946.

The intent of this Act was to establish economic prosperity and social well-being for the nation. It is with the enactment of this legislation that a turning point in American government policy occurred. Government assumed the responsibility for the continued economic prosperity of all in the nation. The President was required by the Act to report regularly to the Congress on how to attain this objective.²

In discharging its assumed responsibilities under the Employment Act of 1946, the Federal government has grown tremendously both in scope of undertaking and in size. It has become a major economic factor and a force

¹Charles G. Dawes, The First Year of the Budget of the United States (New York: Harper and Brothers, 1923), p. 11.

²Schick, op. cit., p. 249.

whose impact has inevitably led to increased attention to the output of programs. In the period from 1932 to 1940, Federal expenditures rose from \$4.2 to \$10 billion.¹ The magnitude of further growth is evident when these figures are compared to the Unified Federal Budget of \$186 billion in fiscal 1969.²

Performance Budgeting

Beginning in 1939 with its placement in the Executive Office, the Bureau of the Budget staff was increased significantly and staffed with public administrators rather than accountants.³ It was during this period that the Bureau acquired the management orientation in budgeting which it has today and which continues to develop.

In this period of its history, Government and its taxing and spending programs began to be viewed differently than in the past. With values attached to its potency as a stabilizing factor in the Keynesian context, converts began to accept the growing size and scope of operations of the Federal Government in the economy of the nation. This factor provided strong impetus for the modification in the approach to budgeting and financial management.

¹Ibid.

²U.S. Bureau of the Budget, Special Analyses Budget of the United States Fiscal Year 1969 (Washington, D. C.: Government Printing Office, 1968), p. 13.

³Schick, op. cit., p. 243.

The increased size of the Federal budget and the expanded scope of functions required that a new look be taken at budgeting after World War II. To increase the size of budgeting and auditing staffs in order to cope with increased budgeting operations may have been self-defeating. The increased emphasis on scientific management, the improvement in accounting and procurement procedures, and the need to devise new methods to control the expanding Federal agency structure all helped to usher in the management oriented budget. The attention in budgeting was focused on promoting efficient operations rather than controlling expenditures in detail. In a sense, a new way to "skin the cat" was devised to control the agencies and their operations. Techniques such as management engineering were adopted to encourage more efficient administration.

In this era, the contributions of the Hoover Commissions to the advancement in budgeting theory and techniques can probably be described as academic. In a sense, the objective of the Commissions was to refine further the management approach to budgeting and at the same time to retain the control features of the past. The Commissions' main contribution was the impetus for further reform through development of the concept known as performance budgeting. The Commission stated as recommendation number one in its report on Budgeting and Accounting:

We recommend that the whole budgetary concept of the Federal Government should be refashioned by the adoption of a budget based on functions, activities, and projects; this we designate a "performance budget".¹

¹Burkhead, op. cit., p. 135, citing the Commission on Organization of the Executive Branch of the Government, Budgeting and Accounting (Washington, D. C., 1949), p. 8.

This does not represent the revolutionary advancement which the words seem to imply, but rather a transitory phase of budgeting aimed at increased managerial effectiveness and efficiency. The main intent of the Hoover Commission, according to Smithies, was to improve public understanding and comprehension in terms of policy objectives.¹

The use of the term "performance budgeting" has caused some confusion with the term "program budgeting". The latter is usually applied to a later stage involving Planning-Programming-Budgeting. Performance budgeting is management oriented. Its principal thrust is to help administrators to assess the work-efficiency of operating units by (1) casting budget categories in functional terms, and (2) providing work-cost measurements to facilitate the efficient performance of prescribed activities.²

Performance budgeting was, and is, concerned primarily with work to be done and the means for accomplishing it most efficiently. It is related to such things as work measurement and to the preceding budget development phase of control for the sake of economy. It treated work and activity as ends in themselves. In this sense, performance budgeting was input oriented. It has emphasized the categorization of work activities into budget activities. Professor Mosher provides an assessment of performance budgeting as probably most regarded it at that time:

¹Smithies, op. cit., pp. 83-4.

²Schick, op. cit., p. 251.

the central idea of the performance budget . . . is that the budget process be focused upon programs and functions - that is, accomplishments to be achieved, work to be done.¹

This definition appears to lean heavily on aggregations of inputs in order to relate budgeting to programs.

In a recent report of the Joint Economic Committee of the Congress, it can be seen that there is no differentiation made between performance and program budgeting:

Some of the techniques of analysis contemplated in current discussions of PPBS have been employed in the past. In the 1930's, the Department of Agriculture and the Tennessee Valley Authority used program budgeting.²

Sherwood and Best contend that there is little distinction between performance and program budgeting.³ Schick says that performance techniques do not presuppose program budgeting and that:

. . . performance budgeting as it was generally understood and applied must be distinguished from the emergent PPB idea.⁴

¹Federick C. Mosher, Program Budgeting: Theory and Practice with Particular Reference to the U.S. Department of the Army (Chicago: Public Administration Service, 1954), p. 79.

²U.S. Congress, Joint Economic Committee Report, The Planning-Programming-Budgeting System: Progress and Potentials, Report No. 86-7410, 90th Congress, 1st Session, December 1967, p. 2. Cited hereafter as Joint Economic Committee, PPBS Hearings, 1967.

³Frank P. Sherwood and Wallace H. Best, "The Local Administrator as Budgeter," Public Budgeting and Finance, Readings in Theory and Practice, ed. by Robert T. Golembiewski (Itasca, Illinois: F. E. Peacock Publishers, Inc., 1968), p. 508.

⁴Schick, op. cit., p. 250.

The Department of Agriculture's budgeting system mentioned in the Congressional report was known as the Uniform Project System and was developed in the 1930's. It provided a budget structure that would permit presentation of the Agriculture budget on a functional basis and would relate projects more precisely to substantive programs and the appropriation structure.¹ The system does not appear to encompass, however, the broader aspects of program budgeting as it is emerging in Planning-Programming-Budgeting. This is evident in a description of the advantages of the Agriculture system:

conveying an understanding of financial needs in terms of work to be done and ends to be achieved.²

Effort was directed toward what the late William A. Jump, the Department of Agriculture's first budget officer, described as:

a universal language for a program of work discussion so that the Congress, the Budget Bureau, the bureau, and the public could all speak the same tongue. This would help remove mystery and confusion from public activity where mystery and confusion are not appropriate.³

This explanation of the system's basic purposes relates it to performance budgeting as proposed by the Hoover Commission and less to the output orientation and marginal analysis under Planning-Programming-Budgeting. Although the Agriculture system may have been a forerunner on the way to

¹Ralph S. Roberts, "USDA's Pioneering Performance Budget," Public Administration Review, XX, (Spring 1960), p. 75.

²Ibid.

³Ibid.

program budgeting, its relationship to the Hoover Commission concept is recognized:

Performance budgeting does not solve the greatest problem in budget decision-making - the comparative evaluation of projects, functions, or activities. Unfortunately, some people think it does.¹

There should be little doubt that the Agriculture system belongs to the management phase of budget development which emphasized cataloging activities in a functional context. Perhaps some of the semantic confusion could be eliminated if the performance budgeting concepts from the Hoover Commission were labeled "functional" budgeting to describe more accurately the emphasis on work and activities.

Nevertheless, this era provided the advance in budget theory upon which the next was built. It promoted the idea that attention should be directed to what government is doing with the resources it is using. There is some over-simplification in saying that only the emphasis was changed from activities as the focal point to actual attempts to measure the output of activities in program budgeting and to relate the output to achievement of predetermined goals.

Program Budgeting

Program budgeting is planning oriented, yet it encompasses the control and management aspects of the previous approaches to budgeting. It extends the time horizon beyond the traditional one-year budget. Its

¹Ibid., p. 78.

emphasis is on outputs rather than the inputs upon which performance budgeting centers. It recognizes achievements and work to be done, but only as they serve the end objective of the master plan. It is allocative in that it seeks to provide objective functions as the framework for selection of program goals competing for the same scarce resources. In the micro-analytical context, it uses the marginal utility analysis of the economist in developing the objective functions from which goals may be selected. In the macroanalytical context, it serves to direct the attention of higher levels of government toward choosing on the basis of broad national goals.

Program budgeting in the form of the Planning-Programming-Budgeting System accompanied the growing influence of the economist in government. The adoption of Keynesian economics and the recognition that the taxing and spending powers of government represent an economic variable which can be used for both stabilization and growth of the nation's economy, have fostered the need for better planning by which to use these powers and resources of government.

Substantial interest in program budgeting emerged in the early 1950's when a number of economists such as McKean, Novick, and Smithies began to urge reform of the Federal budget system.¹ Other developments served to advance the techniques of program budgeting such as the use of operations analysis developed during World War II. From these techniques

¹Schick, op. cit., p. 251.

cost-utility analysis was developed to obtain optimum mixes of resources required to achieve program goals. The extension of the technologies across-the-board to government was urged repeatedly by members of the RAND Corporation during the 1950's.¹

The appointment of Charles Hitch to the position of Comptroller in the Department of Defense was the first step in adoption of the RAND representative's recommendations. It was Hitch who introduced Planning-Programming-Budgeting to the Department of Defense. Its use in the selection of weapons systems, in resource allocations, and in requirements determinations is regarded as one of its most important contributions to military management. This served also in large measure to convince a number of non-defense agencies of its great merit.

Objectives of Planning-Programming-Budgeting

Planning-Programming-Budgeting attempts to integrate multi-year planning with budgeting via programming. In describing the system, one must define the "program" and relate it to the budget by means of an analysis which considers the costs of inputs and outputs of alternative means of achieving defined goals and objectives.²

The definition of a program in Planning-Programming-Budgeting includes each and every one of an agency's efforts or outputs required to

¹Ibid.

²The theory and examples of application of cost-utility analysis in the two non-defense departments will appear in a later chapter.

achieve a particular objective or a set of allied objectives.¹ This is in contrast to the traditional use by which it described a combination of activities to meet an end objective, to describe budget components such as personnel or training of personnel rather than end objects, or to lump together related administrative activities such as procurement of equipment items.²

For some insight into the nature of the Planning-Programming-Budgeting System, the testimony of Charles L. Schultze, a past Director of the Bureau of the Budget, during whose term of office the use of the system was extended to the non-defense agencies, is pertinent:

- . As the first step PPB calls for a careful specification of basic program objectives in each major area of government activity.
- . The second step, under the PPB system, is to analyze insofar as possible, the output of a given program in terms of the objectives initially specified in the first step.
- . The third step is to measure the total costs of the program, not just for one year, but over at least several years ahead.
- . The fourth and crucial step is to analyze alternatives seeking those which have the greatest effectiveness in achieving the basic objectives specified in the first step or which achieve those objectives at the least cost.

¹Samuel M. Greenhouse, "The Planning-Programming Budgeting System: Rationale, Language, and Idea-Relationships," Public Administration Review, XXVI (December 1966), p. 273.

²David Novick, "The Department of Defense," Program Budgeting, ed. by David Novick, (Cambridge: Harvard University Press, 1965), p. 87.

- . The fifth and final element of this approach is establishing this method and these analytic techniques throughout the government in a systematic way, so that, over time, more and more budgetary decisions can be subjected to this kind of rigorous analysis.¹

The emphasis is then, undeniably, on the economic analysis in budget development. This is stated explicitly in the fifth step described by Schultze. However, as a beginning, the initial steps described are more significant. Their purpose is to get agencies to undertake critical self-analysis. Agencies are required to determine what is presently being done with the resources which are under their control. This analysis is not intended to result in a description of functional activities, but rather must answer the question, "What are they really trying to accomplish?"²

Assuming the question is answerable, the next step is to determine what the output of the program is in terms of promoting or satisfying some purpose. That is, does the program output prevent death, relieve poverty, or improve the level of education of the citizenry?

A significant departure from tradition is expressed in Schultze's description of the nature of Planning-Programming-Budgeting. The intent is to include both capital investment costs and operating costs and to project the latter over the life cycle of the program.

The final step involves a comparison of alternative ways to achieve the program objectives. In this phase, it is assumed that the program

¹Schultze, op. cit., pp. 20-1.

²Ibid.

objectives can be rationally selected and, more importantly, specifically defined. The costs of alternative means for achieving the objectives are compared and the optimum, in terms of potential cost and fulfillment of purpose, is selected.

In slightly different form, some of the same reasons were given by President Johnson in his original statement of August 25, 1965, directing the extension of Planning-Programming-Budgeting throughout the Federal Government. His statement expressed the expectation that once the system is in operation, it would enable us to:

- (1) Identify our national goals with precision and on a continuing basis
- (2) Choose among those goals the ones that are most urgent
- (3) Search for alternative means of reaching those goals most effectively at the least cost
- (4) Inform ourselves not merely on next year's costs, but on the second, and third, and subsequent year's cost of our programs
- (5) Measure the performance of our programs to insure a dollar's worth of service for each dollar spent.¹

The basic document directing the heads of Executive departments to implement Planning-Programming-Budgeting describes the principal objective of the system as follows:

The principal objective of PPB is to improve the basis for major program decisions, both in the operating agencies and in the Executive Office of the President Program objectives

¹Ibid., p. 12.

are to be identified and alternative methods of meeting those objectives are to be subjected to systematic comparison.¹

The nature of the system, its purposes, and the expected improvements from its use are reflected at the Departmental level by the Secretary of Agriculture's implementing directive which describes what will be done:

- . Conduct comprehensive reviews to define program objectives
- . Identify concrete measures of program effectiveness
- . Develop and compare alternative ways of accomplishing objectives.²

In analyzing the documents cited, related materials, and interviews with officials of the Planning-Programming-Budgeting staffs in the Departments of Agriculture and Health, Education and Welfare, it is apparent that there may be other purposes for extending Planning-Programming-Budgeting to the non-defense agencies:

- (1) In directing the inclusion of present programs as well as proposed legislation (new obligation authority) in the Program and Financial Plan, the Bureau of the Budget appears to be challenging that aspect of present budget practices which considers the past year's budget as an accepted base for the next year. This is the aspect of present budget practice which Wildavsky calls "incremental".³

¹U.S. Bureau of the Budget, "Planning-Programming-Budgeting," Bulletin No. 68-2, July 18, 1967, p. 1. Cited hereafter as Bulletin 68-2.

²U.S. Department of Agriculture, "Planning-Programming-Budgeting System," Secretary's Memorandum No. 1589, October 27, 1965, p.2.

³Aaron Wildavsky, The Politics of the Budgetary Process (Boston: Little Brown & Company, 1964), pp. 11-13.

- (2) The long range intent may be to sharpen the degree of control of the Executive branch over the agencies and in turn force similar action by the agencies over subordinate units. In his assessment of budgetary reform for the past six decades, Mosher identified a major effect, whether intended or not as raising to a higher level the power to make or influence decisions and to choose among alternatives.¹
- (3) There is continued emphasis on economy in government with slightly more attention paid to effectiveness of program outputs. Subjecting programs to alternative means of accomplishment is expected to result in the revelation of the least costly, but most effective.
- (4) The advanced technology in computer information systems will permit the analysis of programs and program elements by aggregating dollars to be spent on like programs. There are several agencies which sponsor education programs for example. In addition, there is the possibility that other "cuts" can be taken in analyzing a budget. One example is to identify "target groups" and analyze budget dollars being allocated to those groups of the population which benefit by such things as age, ethnic background, geographical region, or economic status. The results of this type of analysis can influence decisions in budget formulation.
- (5) In the final analysis, Planning-Programming-Budgeting is expected to influence the form of the Federal budget and its method for presentation to the Congress. This most ambitious objective, if accomplished, is certainly in the far distant future.²

It is in this last purpose that it can be seen that the case for Planning-Programming-Budgeting as a budget technique rests on the assumption that

¹Frederick C. Mosher, "PPBS: Two Questions," Public Administration Review, XXVII, March 1967.

²William Gorham, "Sharpening the Knife That Cuts the Public Pie," 2nd HEW Forum, December 20, 1967, Department of Health, Education and Welfare Auditorium, Washington, D. C.

the form in which information is classified and used governs the actions of budget makers and, conversely, that alterations in form will produce desired changes in behavior.¹ The behavioral aspects presumably refer to the way in which budget dollars will be allocated among claimants. But take away the assumption that behavior follows form, and the movement of Planning-Programming-Budgeting is reduced to a trivial manipulation of techniques - form for form's sake without any significant bearing on the conduct of budgetary affairs.²

Summary

It has been 56 years since President Taft's Commission on Economy and Efficiency expressed the idea that the budget should be considered in terms of programs or functions. Since then, most budget reforms have been directed toward this end. The Budget and Accounting Act of 1921 provided for an Executive budget. Through the Bureau of the Budget, created by this Act, the Chief Executive was able to gain some measure of control over the agencies and their budgets. The major achievement was a compilation of object-of-expenditures in a document called a Federal budget. It was the first phase in developing the budget as a policy document.

With the coming of the New Deal and the adoption of Keynesian economics, government seemed to be regarded less as an enemy and more

¹Schick, op. cit., p. 257.

²Ibid.

as an economic stabilizer and protector of economic and social well-being through use of its taxing and spending powers. The growth in size of government and scope of operations in this period diverted the attention of the budgeters to management techniques in the cause of efficiency and economy.

The coming of the economist to government has brought emphasis on more sophisticated analytical techniques which have been adapted and combined with the control and management features of past budgeting theory. The result is Planning-Programming-Budgeting which seeks to allocate resources by selecting the most effective and efficient alternative to meet predetermined goals or objectives.

CHAPTER III

SYSTEM, MECHANICS, AND ORGANIZATIONS

System Description

The justification for describing Planning-Programming-Budgeting as a system rests heavily on the form which it provides for proposal, discussion, evaluation, and decision-making on a program basis.¹ These operations are accomplished through various components of the system known as elements.

The elements are described in the Bureau of the Budget's implementing directive. They parallel those of the Department of Defense, although they are given somewhat different names. The initial requirement of the directive is that a program structure be developed by each agency. The structure is used to build three types of documents which represent the basic elements of the system: Program Memoranda, Program and Financial Plan, and Special Studies.²

Program Structure

The program structure is intended to describe the activities of the agencies in a set of between five and ten major program categories which will provide a suitable framework for considering and resolving the major questions of mission and scale of operations.³ That is, the structure is

¹Charles S. Schultze, Senate Committee on Government Operations, PPBS Hearings, 1967, op. cit., p. 48.

²U.S. Bureau of the Budget, Bulletin 68-2, op. cit., p. 3.

³Ibid.

cast in terms of outputs or groups of outputs which are relatable to agency goals and objectives. A goal or objective is defined as being a statement of national purpose; an agency's mission is that part of the national goal which concerns a particular agency.¹

In the Department of Agriculture there was no attempt to establish an overall department-wide set of systematically related goals and objectives applicable to all activities because it was felt that many agencies carried out inter-related activities which were generally in support of published speeches, yearbooks, and other documents.²

The Department of Agriculture for fiscal year 1968 developed seven program categories as the first step in building the system elements. The Program Structure of the department is contained in Appendix A. The following program categories were used for fiscal year 1968:³

Income and Abundance

Growing Nations - New Markets

Dimensions for Living

¹Charles L. Schultze, Senate Committee on Government Operations, PPBS Hearings, 1967, op. cit., p. 54.

²U.S. Department of Agriculture, "The Planning-Programming-Budgeting System in the U.S. Department of Agriculture," based on a presentation made by William A. Carlson, Deputy Director of the USDA Planning, Evaluation, and Programming Staff during the seminar on "Executive Orientation in PPBS" conducted by the Civil Service Commission's Bureau of Training, January 30-February 1, 1968, Milwaukee, Wisconsin, p. 2.

³U.S. House of Representatives, Committee on Appropriations, Hearings, Department of Agriculture and Related Agencies Appropriations for 1968, 90th Congress, 1st Session, 1967, pp. 617-21. Cited hereafter as USDA Appropriations Hearings, 1967.

Communities of Tomorrow
Resources in Action
Science in Service of Man
General Support

These program categories were developed from an original list of 14 which were submitted to the Bureau of the Budget on October 27, 1965. Circulation of the original categories throughout the department's agencies and internal discussion subsequently resulted in a revised list of nine categories. The list was further reduced to seven categories. These have been divided into as many as six subcategories with a maximum of 20 program elements each. This program structure containing seven categories has been approved by the Bureau of the Budget.¹

The program categories have become a descriptive umbrella under which to include the activities of the department. For instance, "Provide Adequate Housing in Rural Areas" in the original program structure has been incorporated into a broader category entitled "Communities of Tomorrow" which includes other portions of the original 14 program categories.

The proliferation of subcategories and elements indicates that an effort was made to include all present activities of the department and its agencies in the program structure rather than to attempt definition of the proper province of agriculture programs in meeting the Federal Government's goals and objectives. Realistically, it should not be expected that this

¹Interview with William Carlson, Deputy Director, Planning, Evaluation and Programming Staff, U.S. Department of Agriculture, January 25, 1968.

objective could have been accomplished in the implementation phase. Rather, this is the longer range objective of installing Planning-Programming-Budgeting in the first place. The department's approach in developing the program structure that it did, is an appropriate first step. In this way can it begin to satisfy the purpose of the undertaking which is to provide the framework for considering and resolving the questions of mission and scale of operations.

A review of the Program and Financial Plan of the Department of Agriculture indicates the difficulty of the job of defining activities in a program context. The department's scope of operations is larger than that which the traditional term of agriculture usually connotes as farming, husbandry, horticulture, and stock raising. The department is involved in human health, safety, education, housing, recreation, natural resource conservation, and research in a large number of areas. John Haldi, formerly of the Budget Bureau, commented on identifying programs:

It was only with a great deal of effort and concentration that agencies were able to state what was a reasonable way of looking at their programs, or what constituted a reasonable definition of the programs. This alone is sometimes a major job. Take a big department like Agriculture, which spends \$6 billion a year, which has 22 bureaus, and try to decide what their programs are.¹

Much of the attention of the department has been directed toward determining the scope of present research efforts, the purposes, and the

¹U.S. Congress, Joint Economic Committee, The Planning-Programming-Budgeting System: Progress and Potentials, Hearings, 90th Congress, 1st Session, 1967, p. 229. Cited hereafter as Joint Economic Committee, PPBS Hearings, 1967.

expected benefits. Assistant Secretary Robertson summarized some accomplishments in this area in testimony before a House Appropriations Subcommittee:

. . . until we went through the PPB procedure last summer, action agencies had never had a chance to see in advance what the research agencies were planning to do in the same field - and the research agencies hadn't seen the advance plans of the action agencies.¹

In line with the initial objectives of cataloging and examining present activities, this accomplishment should be considered a pattern for the future on the way to the longer range objective of defining the output of the department and its agencies in terms of programs relatable to national goals and objectives and of tackling the questions of scope of operations and mission. For the present, however, the emphasis remains on activities:

The PPB system requires the development of a mission-oriented program structure for all USDA activities which relates the resources we use to the goals and objectives we seek.

. . . These are the types of activities it performs - the means used to achieve its objectives.²

The Department of Health, Education and Welfare has developed a program structure composed of six major categories:³

¹House Committee on Appropriations, USDA Appropriations Hearings, 1967, op. cit., p. 603.

²Ibid., p. 612.

³U.S. Department of Health, Education and Welfare, Planning-Programming-Budgeting, Guidance for Program and Financial Plan, March 1967, p. 17.

Education
Health
Vocational Rehabilitation
Social Services
Income Maintenance
International

From the descriptive title, the nature and purpose of the programs are more clearly discernable than those of the Department of Agriculture. The program categories have been divided into not more than six subcategories which are about the same as those of the Department of Agriculture. One notable difference is in the placement of general-support type programs in the structure. These programs are recognized as being primarily administrative overhead type activities, and the identification of an inherent output of these programs is theoretical at best. In the Department of Health, Education and Welfare structure contained in Appendix B, general support is a subcategory in five of the six programs. This suggests that all general support costs are allocated to a program rather than identified as a separate program as was done in the Department of Agriculture.

Below the subcategory level, the Department of Health, Education and Welfare program structure branches out to describe the purpose and nature of the program in further detail. Even at this lower level, the description is directed more toward program output than to the activity. But, in spite of the structure terminology, the unavoidable bases are activities. This is because the program structure represents an allocation of operating programs (activities) in terms of their purposes and objectives.¹

¹Ibid., p. 57.

In the Department of Health, Education and Welfare, the initial effort was directed toward the same purpose as those of the Department of Agriculture; namely, inclusion of all present activities in a program framework. This purpose is stated explicitly in the department's guidance directive:

Every operating program in the Department must be assigned to one or more categories in the program structure outlined in the preceding sections¹

A portion of the Program and Financial Plan backup data was obtained from the Department of Health, Education and Welfare. It contains explicit goals, such as a national total of 334,000 practicing physicians by 1973.² Alternatives to achieve this goal were given in detail, such as incentives to medical students; financial support for medical school faculties; upgrading schools of public health and hospital administration; and establishing a National Medical Corps. The level of proposed program funding was cited although, as in many other program areas, one specific alternative was not recommended because existing programs were still being explored and analyzed. A major goal of the Department of Health, Education and Welfare appears to be improving the lot of those in the lower income groups with emphasis on health services and education.

¹U.S. Department of Health, Education and Welfare Planning-Programming-Budgeting, Guidance for Program and Financial Plan, March 1967, p. 17.

²U.S. Department of Health, Education and Welfare, Discussion of Program and Financial Plan, December 10, 1967, p. 55.

Program Memoranda

In developing the first element of the system, agencies are required to prepare a Program Memorandum for each program category.¹ In essence, these documents outline the program strategy upon which plans and programs are built for the future years and provide backup data for development of annual budget and legislative programs. The Program Memoranda are designed to show what choices were made, why these choices were made, and the alternatives considered in arriving at the decisions taken. In short, the Program Memoranda are designed to provide a statement of program strategy, with the bases for major program decisions stated explicitly.

The very nature of these documents classifies the information contained in them as "privileged discussion" and, therefore, not generally available to the public. The political aspects of program and budget decisions, alternatives, and means for accomplishment preclude their general distribution because of the certain clamor of clientele and interest groups. It stands to reason that the greater the political overtones which are attached to program and budget decisions, the more judgmental type of factors enter into those decisions and, therefore, less reliance can be placed on system analysis, cost-benefit analyses, and quantitative output data for determining program levels. The essence of this theory was expressed by Assistant Secretary Robertson of the Department of Agriculture.²

¹U.S. Bureau of the Budget, Bulletin 68-2, op. cit., p. 3.

²Interview with Joseph M. Robertson, Assistant Secretary of Administration, U.S. Department of Agriculture, January 23, 1968.

Another official of this department, William Carlson of the Planning, Evaluation and Programming Staff, confirmed that the department has established some unpublished goals which, because they may favor one clientele as opposed to another, are generally not releasable to the public. The example given was a goal which is directed toward providing food to the public at the lowest possible cost, while another is directed toward increasing incomes of certain farm groups. To some extent, both objectives may be partially achieved through research and development. However, in order to increase the farmer's income significantly, an increase in prices to the consumer is necessary.

Program and Financial Plans

The second element of the Planning-Programming-Budgeting System is the Multi-year Program and Financial Plan. It represents in tabular form, and for a period of several years, pertinent data relating to the outputs and costs of agency programs.¹ In requiring that the cost and output implications of the present year budget decisions be shown for future years, the extended requirements of current program decisions are disclosed explicitly. The Program and Financial Plan is designed to show the implications of current program decisions and will not necessarily reflect accurate estimates of agency budget totals for the years beyond the budget year because it omits new programs not yet recommended and fails to reflect program level changes, including the termination of some existing programs, decisions on which are not part of the current budget.

¹U.S. Bureau of the Budget, Bulletin 68-2, op. cit., p. 5.

The Program and Financial Plan Summary of the Department of Agriculture is a comprehensive document showing the program structure in terms of mission, goals, and objectives.¹ The objectives are stated in general terms such as:

INCOME AND ABUNDANCE.

(a) Farm Income. The first goal is to help provide the opportunity for farmers to earn an income compatible with their abilities and resources.²

Appendix C is a summary of the Department of Agriculture's Program and Financial Plan cost data. Appendix D is representative of the department's cost/output data for the program category Income and Abundance, Farm Income.

Appendix E was extracted from the Department of Health, Education and Welfare's Program and Financial Plan. Appendix F represents the corresponding output data for the cost data in Appendix E. Funding levels cited in the department's Program and Financial Plan were based on Special Studies.³

¹U.S. Department of Agriculture, "Program and Financial Plan Summary," January 1968, p. 1.

²Ibid.

³See U.S. Department of Health, Education and Welfare, "Maternal and Child Health Care Programs," Program Analysis, October 1966.

Special Studies

The third element of the system is called the Special Studies. These essentially are cost-benefit analyses. They are designed to review in terms of costs and benefits, the effectiveness of prior efforts, comparisons of alternative mixes of programs, the balancing of increments of costs against increments in effectiveness at various program levels with attention directed to diminishing returns and limitations of physical resources.¹ According to former Budget Bureau Director Schultze:

These studies, addressed to issues of particular importance, form the analytic background for many of the recommendations in the Program Memorandum. Work on these studies should be a year-round affair, not something confined to the few weeks or months before the budget is developed.²

The business of program analysis does appear to be a year-round effort of the program staffs in both departments. As previously mentioned, the Department of Health, Education and Welfare has developed eight special analyses with several additional studies underway. The Department of Agriculture has completed studies with more planned, both at the department level and in the agencies. Several have been summarized for public distribution.³

Not all program decisions and, therefore, budget decisions are yet justified on the basis of the special study element using cost-benefit

¹U.S. Bureau of the Budget, op. cit., p. 9.

²Ibid., p. 25.

³House Committee on Appropriations, USDA Appropriations Hearings, 1967, op. cit., pp. 613-15.

analyses. The progress in two years of staff operations in the two departments and agencies studied does, however, represent a notable achievement. The Bureau of the Budget is obviously allowing time for staffing, training, and shakedown of the analysis staffs. Schultze summarized the Bureau's expectations:

Realistically, we cannot yet expect that every choice be backed up by a full analytic approach. Analytic staffs are just being developed in many cases, and there are thousands of issues. But we have required that where the analytic base is lacking, the Program Memoranda at least contain a clear statement of the reasons which were employed in choosing the particular recommendations involved.¹

Is PPBS A System?

Having described the system elements and related some aspects of their introduction to the two non-defense departments, one might well ask, In what sense are these elements considered a system? This question was asked of Budget Bureau Director Schultze by Senator Howard W. Baker, Jr. of Tennessee during recent hearings:

Senator Baker: The whole PPB system, it seems to me, is essentially, as you point out, a system, but you haven't yet described it as a closed system. I have not ascertained whether there is an effective feedback on cause and effect performance into the system itself which in turn would make it a closed system. Is there such a feedback?

Mr. Schultze: I guess the honest answer is in general "no".²

¹Senate Committee on Government Operations, PPBS Hearings, 1967, op. cit., p. 25.

²Senate Committee on Government Operations, PPBS Hearings, op. cit., pp. 47-8.

The designation of Planning-Programming-Budgeting as a true system in the sense in which Senator Baker describes a system, must await the development of a budget in program format with funds appropriated on the same basis and with an accounting system which is compatible with the program budget.

Staffing Organizations

Bureau of the Budget

In August 1967, Budget Bureau Director Schultze gave the go-ahead for a reorganization of the Bureau. The changes were aimed at the divisions that review each agency's budget plans and the creation of an Office of Executive Management.¹ This resulted in the creation of six program divisions in order to accommodate the adoption of Planning-Programming-Budgeting by the non-defense agencies. These divisions were designated as:²

National Security Programs

International Programs

Natural Resources Programs

Human Resources Programs

Science, Technology and Economic Programs

General Government Management Programs

¹Business Week, "A McNamara-style Budget Bureau," September 23, 1967, p. 129.

²Ibid.

In addition to the budget examiners, an Assistant Director with a staff of 12 people has been designated to insure that the examiners use the Planning-Programming-Budgeting techniques.¹ This staff also develops systems policy and works with the Planning-Programming-Budgeting staffs in the departments.

General Accounting Office

Not to be outdone, or anticipating the growing importance of Planning-Programming-Budgeting and its implications for auditing, as well as the need for revising accounting systems, the General Accounting Office has developed an analytic capability. According to Frank Weitzel, Deputy Comptroller General:²

. . . we recently established a new systems analysis group within our office of policy and special studies . . . in July 1966, we selected three young men . . . and sent them to universities for additional training in systems analysis. They completed this work in June of 1967. And they are now on board our staff.

More recently, we obtained the services of an experienced system analyst, . . . , from the Department of Defense to provide leadership for this group. We plan to expand the size of this group slowly. . . .

¹Senate Committee on Government Operations, PPBS Hearings, op. cit., p. 43.

²Joint Economic Committee, PPBS Hearings, 1967, op. cit., pp. 217-18.

Department of Agriculture

The Bureau of the Budget classifies the Department of Agriculture as being engaged in Natural Resource Programs.¹ The department is organized along functional and subject matter specialty lines. Individual bureaus are grouped under the general direction of Assistant Secretaries or Directors who are equivalent in authority to Assistant Secretaries, but do not have the title. There are 20 program agencies and department level staff groups which together comprise the 24 "Agencies" for Planning-Programming-Budgeting purposes.² The number of agencies conducting various activities is as follows:³

| <u>Activity</u> | <u>No. of Agencies</u> |
|------------------------------------|------------------------|
| Research and development | 6 |
| Technical assistance and education | 9 |
| Credit | 3 |
| Cost-sharing | 8 |
| Transfer payments | 4 |
| Insurance | 1 |

¹Business Week, op. cit.

²William Carlson, "Related Organizations to Program Plans in the Department of Agriculture," unpublished brochure, December 11, 1967, p. 2.

³U.S. Department of Agriculture, Secretary's Memorandum No. 1589, October 27, 1965, op. cit., p. 2.

The Secretary of Agriculture's memorandum of October 27, 1965, established the Planning, Evaluation and Programming (PEP) Staff in the Office of the Secretary to be headed by a Director who was designated Special Assistant to the Under Secretary.¹ This staff became operational in the Spring of 1966. The staff is composed of 10 analysts, 4 programmers, and several statistical and clerical assistants. The annual cost of the staff is approximately \$400,000, which was the amount appropriated by the Congress in fiscal year 1968 for this purpose.²

The incumbent Director of the PEP Staff is Howard Hjort. He is an Agricultural Economist who has been with the department for about five years. Hjort holds a Master of Science degree and has completed all work, except the dissertation, for the Doctor of Philosophy degree at the University of North Carolina. The Deputy Director is William Carlson. He has been with the department for about 15 years and holds a Master of Business Administration degree from Harvard University. His experience in the Department of Agriculture has been in the fields of budgeting and organization analysis.³ These individuals had no prior experience with Planning-Programming-Budgeting.⁴

¹Ibid.

²Interview with Charles L. Grant, Director of Finance, U.S. Department of Agriculture, January 23, 1968.

³Interview with William Carlson on March 28, 1968.

⁴Ibid.

The Secretary's memorandum requires that staff resources be available in eight of the 20 agencies in order to analyze the effectiveness of agency programs and participate in special studies. No funds were provided for additional personnel spaces for this purpose.¹

In the Forest Service, an agency of the Department of Agriculture, an analytic organization similar to that of the department was established as the Division of Programs and Special Projects. This organization is a staff unit, headed by a Director, Dr. Adrian M. Gilbert, who reports to the Chief of the Forest Service. The division is composed of nine analysts and clerical and statistical assistants.²

Similar units have been established in seven of the other 19 agencies of the Department of Agriculture. These units are staffed in relation to the size and amount of resources which are normally allotted to the agencies.³ Analysis of the programs of the remaining 12 agencies is presently handled by the department PEP Staff, with assistance from the agencies involved, when required.⁴

¹Interview with Charles L. Grant, op. cit.

²Interview with Melvin Yuhas, Chief, Program Evaluation Branch, Division of Programs and Special Projects, U.S. Forest Service, January 26, 1968.

³Interview with William Carlson, January 25, 1968.

⁴Ibid.

Department of Health, Education and Welfare

Under six divisions, there are 25 major offices and bureaus grouped as education, health, food and drug, and social security. The Bureau of the Budget classifies the programs of the department as Human Resources Programs.¹

An analytic staff has been created under an Assistant Secretary for Program Coordination. There are approximately 25 people working on the staff. The distribution of professionals and clerical and statistical assistants is about the same as in the Department of Agriculture.

Analytic staffs have also been established in the larger agencies of this department. These consist of four or five people assigned to the planning divisions who devote full time to Planning-Programming-Budgeting. In some cases, agency personnel have been assigned temporarily to work in the department's Program Coordination Office.² The nucleus staff at the department level was funded out of the Secretary's Office ceiling, while the agencies absorbed the costs of the additional efforts required by Planning-Programming-Budgeting.³

In the Department of Health, Education and Welfare, several individuals have been recruited from outside the organization. The Assistant Secretary,

¹Business Week, op. cit.

²Interview with Dr. Douglas Wilson, Office of the Assistant Secretary for Program Coordination, Department of Health, Education and Welfare, February 3, 1968.

³Ibid.

William Gorham, was a staff assistant in the Department of Defense prior to coming to his present assignment.¹ Dr. Robert N. Grosse, Deputy Assistant Secretary, was Chief of the Factors and Estimates Branch, Cost Analysis Department of the RAND Corporation from 1954 to 1961. From 1961 to 1963 he assisted the Assistant Secretary of Defense (Comptroller) in developing the Defense Program Budgeting System.²

These individuals have brought valuable experience in systems analysis and program budgeting to the department. They, and several other individuals recruited from outside the organization, have brought vigor and sophistication to the Planning-Programming-Budgeting efforts in the Health, Education and Welfare fields. A good portion of the progress made in the department is attributable to the past experience of key officers in this field. The department is considered a leader in adapting the system to a non-defense agency.³

Analytic Staffs

The placement of the staffs at the highest levels in the organization hierarchy in both departments complies with the stated requirement of the Bureau of the Budget on the subject of organization:

¹William Gorham, op. cit.

²Robert N. Grosse and Arnold Proschan, "The Annual Cycle: Planning-Programming-Budgeting," Defense Management, ed. by Stephen Enke, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967), p. 23.

³Roger Jones, Address to the U.S. Navy Graduate Financial Management Class, The George Washington University, Washington, D. C., November 13, 1967.

Whether or not analytic staffs are provided the principal managers, each agency should establish a specialized analytic staff reporting directly to the agency head or to his deputy.¹

The principal duties of these staffs are to: coordinate the analytic and planning work done in the subordinate bureaus; initiate and conduct Special Studies; provide first drafts of Program Memoranda; and supervise or monitor research for program analysis.

Because of a lack of adequately trained and qualified program analysts, the initial emphasis has been directed toward staffing and making the program coordination units at the department level operational. Of necessity, these organizations have undertaken the major portion of program analysis work and have made the most progress toward implementing program budgeting in the non-defense agencies.

Training Program Staffs

In both departments and agencies, there have been some efforts to train on-board personnel in systems analysis and program budgeting techniques. Under the sponsorship of the National Institute of Public Administration, both departments and their agencies have sent individuals to one-year programs at leading universities, such as Harvard. In addition, other individuals have attended classes in a program sponsored by the U.S. Civil Service Commission. The evaluation of the contribution of both programs to

¹Bureau of the Budget, op. cit., p. 12.

the development of a competent program analyst has been marginal. According to Dr. Wilson of the Department of Health, Education and Welfare, many universities offer a curriculum which is not optimally suited to the development of a program analyst. He cites emphasis on such subjects as calculus as being unnecessary in a program to train personnel for the program staffs. Likewise, in the Department of Agriculture, neither programs have been well received in terms of the time the individual is lost to the organization and the benefit gained in the training.¹

To some degree, these evaluations may be biased by the fact that directors are trying to show initial results in Planning-Programming-Budgeting with a number of staff vacancies. The Program Coordination Office of the Department of Health, Education and Welfare cited five vacancies in February 1968.² The loss of staff members to training programs aggravates a difficult situation for directors.

Relationships of Planning, Programming and Budgeting Organizations

In the organizations of both departments, the budget and finance functions have remained in separate organizations. At the department level, both the financial and programming units are headed by individuals of equal rank and the organizations have been placed at about the same levels in the hierarchy. The Department of Agriculture is a slight exception in that the

¹Interview with William Carlson, op. cit.

²Interview with Dr. Douglas Wilson, op. cit.

Director of Finance reports to the Assistant Secretary for Administration, while the Director of the PEP Staff reports directly to the Under Secretary.

Officials interviewed in both departments and agencies pointed out the close working relationship which has developed between the analytic staffs and the budget and finance organizations. The separation of these organizations follows the pattern of the Department of Defense. However, their separation has necessitated an accommodation; one which can probably best be described as a rapprochement.

The budget and finance organizations in the Department of Health, Education and Welfare and its agencies have also remained separate organizations. At the department level, this organization is headed by an Assistant Secretary. The two organizations have worked together in the initial phases of Planning-Programming-Budgeting. However, there are indications in the Department of Health, Education and Welfare that the two organizations are not in complete agreement on the structure and classification in the Program and Financial Plan. The budget and finance organization has modified the Program and Financial Plan; this may adversely affect the bases for future program analyses.¹

There appears to be no intent to combine the budget and analytic organizations in the near future in either department. This is for good reason. For until the program budget comes into being, the necessity for the budget and finance organizations to develop and present the budget

¹Interview with Dr. Douglas Wilson, op. cit.

remains a fixed responsibility, one which the Congress apparently intends to have remain unchanged for the near future. In response to Congressman Whitten's question concerning the impact of establishing an analytic staff in the Department of Agriculture, Assistant Secretary Robertson provided the department's policy on the future of the budget office:

It [PPBS] is a different type of operation from the budget office. I suppose to use a medical analogy this [the PEP Staff] might be referred to as the specialists' type of operation where Mr. Grant and the budget office is the general practitioner operating across the spectrum here. No, sir, this is not to replace the budget office.¹

While it probably will not replace the budget office, there is some question that creation of the analytic staff will require a change in the role of budget and finance organizations. If the program decisions precede the budget decisions, as it appears the pattern is developing, the role of the budget and finance officer becomes a supporting one which is more that of an accountant, fiscal, and financial adviser and less that of the general practitioner. He will specialize in appropriations, financial reporting, and control systems.

If the program budget comes into being, these systems will form a part of Planning-Programming-Budgeting. They will be integrated into a larger information system which centers on program analyses in terms of levels, outputs, benefit-cost ratios, rationale, resource allocations, and

¹House Committee on Appropriations, USDA Appropriations Hearings, 1967, op. cit., p. 622.

measures of effectiveness - the elements which make a program budget. As the focal point for this information system, the prominence of the program coordination organizations should increase, while the responsibilities and importance of the budget offices may decrease somewhat.

There may already be indications of concern for the future role of the budget and finance organization. In discussions with the writer, one official of a budget and finance organization emphasized the importance of his organization as compared to the newly created analysis staff. It was pointed out that the planners and programmers do not appear before the Congressional Committees to defend the department's budget requests, and that the possibility of Congress agreeing to a budget in program format was so far in the future that the dominant role of the budget and finance organization was likely to remain. It was further cited that, although the Budget Bureau considered the fiscal 1969 budget in program terms, it translated it into the traditional appropriation structure before making the real decisions.

In contrast, one officer in a planning and program staff expressed his opinion that the center of attention was shifting away from the budget and financial unit to the analysis staff. He cited not only the Budget Bureau's use of program categories in budget formulation, but the reference of the House Appropriations Committee to certain elements of the Department of Defense budget for 1968 by program terminology.

Until the program budget arrives, the emphasis placed on each unit by the head of the department or agency will undoubtedly determine the

prominence of one unit or the other in the organization. That there will be such a change in roles, should provoke little denial. The status quo cannot remain. The future depends upon selling program budgeting to the Congress.

System Mechanics

Use of Committees in Agriculture

The Forest Service, an agency of the Department of Agriculture, was cited as being well advanced in implementing Planning-Programming-Budgeting at the agency level.¹ In part, this is probably due to the work done by this agency and consultants from the Bureau of the Budget in a pilot study undertaken in late 1965.²

In the Forest Service, the planning and programming staff chairs a Task Force which develops primary issues and major program recommendations for the agency. These are distributed to division heads for review prior to being submitted to the Chief of the Forest Service for approval.

Approximately four Program and Evaluation Committees have been formed to undertake program review and analysis of those programs approved by the Chief for study. In the analysis, the Committees attempt to define agency goals, evaluate costs and effectiveness of the programs, and develop

¹Interview with William Carlson, op. cit.

²Case study prepared under the supervision of Richard F. Vancil, Associate Professor of Business Administration, Harvard University, on behalf of the Office of Career Development, U.S. Civil Service Commission.

alternatives and recommendations. The committees are made up of representatives of the line divisions and may include field organization participants. The role of the planning and program staff analyst is significant in the committees. A representative usually chairs the committee and often provides another staff member who takes the lead in the analytic aspects of the committee's work.

The committee approach permits wide participation of knowledgeable individuals and promotes more critical and constructive evaluation of goals, programs, and alternatives. In addition, it introduces the program management approach in that it permits a cutting across organizational lines to induce creative thinking and evaluation without sending the resulting recommendation through the traditional echelons in the hierarchy for decimation. Inefficient, obsolete, and marginally effective activities are reviewed critically. In some cases, the biases of the bosses can be overcome by permitting a more open formulation and evaluation of alternatives in the committee setting. The Forest Service has found that this advantage of the committee approach is being realized.¹

The process results in Program Memoranda and a Program and Financial Plan which is forwarded to the Department of Agriculture for further consideration in combination with inputs from its agencies. At the department level, a planning mechanism exists for reaching program decisions and formulating the department's Program Memoranda and the Program and Financial Plan.

¹Interview with Melvin Yuhas, op. cit.

The department's Program Planning Committees (sometimes called Program Task Forces) are chaired by an Assistant Secretary, with agency heads or their representatives as members. These committees review and evaluate agency proposals and special evaluation studies. They develop a proposed multi-year plan of action for the program-planning period and a draft Program Memorandum for each program planning package which is then transmitted to the Program and Budget Review Committee.

The Program and Budget Review Committee reviews the Program Planning Committee recommendations, modifies them as needed, and makes recommendations to the Secretary. The Secretary makes the final decision on goals, objectives, programs, and program levels.

Systematic Approach in the Department of Health,
Education and Welfare

The Department of Health, Education and Welfare uses a similar mechanism in the Planning-Programming-Budgeting operation. At the headquarters level, the agencies have set up program and analysis groups with permanent members from the planning organizations, supplemented with representatives from line divisions.¹

Assistant Secretary Gorham described the process in the department:

First, very early in the calendar year we drew up a list of significant issues which would have to be addressed in formulating a fiscal year 1969 budget and legislative program. We discussed this list of issues with the office of the Secretary, with the operating agencies, and with the Bureau of the Budget.

¹Interview with Dr. Douglas Wilson, op. cit.

We decided which of these issues seemed likely to be illuminated by analytical work and initiated studies of many of them.

The second step was the development of a set of tentative departmental objectives for 1973. We began by asking the operating agencies to formulate their objectives for 1973 in program terms. We gave each agency two ceilings for 1973 - a "low" which implied continued budget stringency and a "high" which implied somewhat greater availability of funds. We asked each of them to answer the question: How would you allocate these sums in 1973 among existing programs or new programs which could be developed between now and then?

The agencies took this assignment seriously, despite the difficulties of forcing busy administrators to take time away from daily crises to think 5 years into the future. The 1973 objectives which the agencies sent back to the Secretary obviously reflected considerable thought and effort on the part of agency heads and their bureau chiefs.

The agencies 1973 objectives were reviewed and revised somewhat by the Secretary and his staff and a tentative set of departmental objectives for 1973 was formulated. These departmental objectives, reflecting the Secretary's judgment about priorities for 1973 were then transmitted back to the operating agencies to serve as guidance for formulating their fiscal year 1969 budget submissions and fiscal year 1969-73 suggested program and financial plan.¹

The emphasis in the Department of Health, Education and Welfare is more on program analysis and less on the mechanics for considering programs at the various levels of the organization. The difference between this department's handling of Planning-Programming-Budgeting and the Department of Agriculture's procedure is apparent in the former's development of high and low budget figures and the formulation of the tentative list of issues and objectives drawn up at the department level. This approach may

¹Joint Economic Committee, PPBS Hearings, 1967, op. cit., p.9.

reflect the previous experience of Assistant Secretary Gorham and others in his office in the Department of Defense.

Summary

Both the Departments of Agriculture and Health, Education and Welfare have developed program structures which include present activities and functions of these departments. This represents a starting point from which to analyze outputs in order to determine future mission and scope of operations. Goals and objectives of the two departments do not appear to be as explicit as the literature and directives imply they should be. This is probably due to a lack of explicit National Goals, as well as the particular political orientation in each department.

With limited analytic capabilities, both departments developed Program and Financial Plans for the fiscal year 1968 Budget submission, although all data included in them were not based upon cost-utility analysis. Attention has been directed toward developing analysis staffs in each department. Exceptionally well-educated personnel have been placed in the top jobs. They should provide a nucleus for extension of the planning and programming into the agencies of the two departments.

In a little more than two years, the two departments have managed to staff and operate planning and programming units. Their efforts to provide the capability to evaluate resource allocations in terms of programs and analysis are commendable. However, this represents only the beginning. It will probably be a long time before Planning-Programming-Budgeting becomes a system which includes the present elements and a feedback on program accomplishments - a closed system.

CHAPTER IV

COST-UTILITY ANALYSIS

Definition and Discussion

There are a number of terms used today to describe the concept of measuring and comparing costs and benefits. These are "cost-benefit analysis," "cost-effectiveness analysis," "systems analysis," and "operations-analysis". Fisher rejects all of these because of terminological confusion and adopts the title "cost-utility analysis".¹ Some explanation for this preference is provided by Wildavsky:

In many important areas of policy . . . it is not possible to value the product directly in the market place. Since benefits cannot be valued in the same way as costs, it is necessary to resort to a somewhat different type of analysis. Instead of cost-benefit analysis, therefore, the work is usually called cost-effectiveness or cost-utility analysis.²

Acceptance of the term "cost-utility analysis" favors the contention concerning incommensurability of some outputs of government programs. In his definition, Fisher provides some distinguishing characteristics:

1. A fundamental characteristic is the systematic examination and comparison of alternative courses of action . . . to achieve specified objectives for some future time period.

¹Gene H. Fisher, "The Role of Cost-Utility Analysis in Program Budgeting," Program Budgeting, ed. by David Novick (Cambridge, Massachusetts: Harvard University Press, 1965), p. 66.

²Wildavsky, op. cit., p. 294.

2. Critical examination of alternatives . . . but, the two main ones are: assessment of the cost (in the sense of economic resource cost) and the utility (the benefit or gains) pertaining to each of the alternatives
3. The time context is the future
4. Because of the extended time horizon, the environment is one of uncertainty
5. Usually the context in which the analysis takes place is broad . . . with numerous interactions among the key variables in the problem.
6. . . . purely quantitative work must often be heavily supplemented by qualitative analysis.
7. Usually the focus is on research and development and/or investment-type decision problems¹

Essentially these characteristics refer to the operation of comparing costs and usefulness of alternative activities in achieving a specified objective. Cost-utility analysis is a tool which plays a role in the decision-making process. By maximizing the present value of all benefits less that of all costs, cost-utility analysis presents the decision-maker with quantitative choices. The analytic process is directed toward assisting the decision-maker in such a way that his intuition and judgment are better than they would have been without the results of the analysis.²

Fisher provides two conceptual approaches to cost-utility analysis:

1. Fixed utility approach. For a specified level of utility to be attained in the accomplishment of some given objective, the analysis attempts to determine that alternative (or feasible combination of alternatives) likely to achieve the specified level of utility at the lowest economic cost.

¹Fisher, op. cit., p. 71.

²Ibid.

2. Fixed budget approach. For a specified budget level to be used in the attainment of some given objective, the analysis attempts to determine that alternative (or feasible combination of alternatives) likely to produce the highest utility for the given budget level.¹

Fisher states that either or both of these approaches may be used, depending upon the context of the problem at hand.² Either approach results in the development of a cost-utility ratio. In developing the elements of these ratios, it is often the practice to discount the costs and benefits (or utilities) to present value. The General Accounting Office supports this technique in evaluating program alternatives:

The analyst who examines a given project in detail, develops the discount rate which he considers appropriate, and calculates the present value of benefits and costs is in a better position to make defensible recommendations than if his analysis ignored the time periods over which benefits will be realized and costs incurred.³

At present there is no uniformity among Federal agencies concerning discount rates used in cost-utility analysis. A survey made by the General Accounting Office in October 1967 revealed that there was a wide variation in discount rates and techniques used by the executive agencies for justifying their programs.

¹Ibid.

²Ibid.

³U.S. General Accounting Office, Report to Joint Economic Committee, Congress of the United States, Survey of Use by Federal Agencies of the Discounting Technique in Evaluating Future Programs, Report Number B-162719, January 29, 1968, p. 15.

The report further cited two schools of thought concerning the proper discount rate. One holds that the rate should be equal to the rate paid by the Department of the Treasury for borrowed money; the other holds that the rate should be determined by the return that could have been earned in the private sector of the economy when the decision is made to commit resources to the public sector.¹ The report stated that Congress may wish to provide guidance to the agencies in this matter.²

In hearings before the Joint Economic Committee of the Congress, Professor Baumol spoke in favor of the use of a discount rate which is higher than that paid by the Department of the Treasury for borrowed money:

Therefore, while there is not complete unanimity among economists on the precise number that should be used in discounting it would be misleading to infer that there is any disagreement on the basic point at issue. The profession speaks with one voice in asserting that a discount figure of 3.5 or 4 percent is too low in present circumstances, and warns us clearly of the misallocation of resources and inefficiencies that are likely to result from the use of such unjustifiable figures.³

The selection of a discount rate is of significance to agencies attempting to develop cost-utility analyses in that the outcomes of their attempts can be biased by the discount rate used. Inefficient or ineffective program alternatives may be justified by analyses which use low discount rates.

¹Ibid.

²Ibid., p. 16.

³Statement of William Baumol, Professor of Economics, Princeton University, before the Joint Economic Committee, September 20, 1967. Joint Economic Committee, PPBS Hearings, op. cit., pp. 158-59.

This practice does not promote the basic objectives of Planning-Programming-Budgeting which is the rational allocation of resources based on economic considerations.

Application to Agricultural Programs

The use of economic analysis was not new to the Department of Agriculture:

For a long time we had been applying quantitative techniques to selected program issues -- including economic and statistical analysis.¹

But it did force the department to extend the methods to program areas where they had not previously been applied and at organizational levels at which they previously had not been used.²

In a status report submitted for the record during the fiscal year 1968 appropriations hearings, the Department of Agriculture reported that thirteen special studies had been undertaken. The report contained a resume of each study. The following four appear to be among the more significant of those reported:

1. Timber Stand Improvement - Rates of return for intensification of timber management on National Forests were estimated for 87 timber-type soil-quality classes in 5 different regions. Current program funds are distributed about equally among the 4 major regions. The study indicated that an alternative

¹U.S. Department of Agriculture, The Planning-Programming-Budgeting System in the U.S. Department of Agriculture, op. cit., p. 12.

²Ibid., p. 13.

allocation of the same funds over the next 10 years to opportunities returning over 6 percent on investment, would significantly alter the regional distribution of funds. Additional benefits to the public, measured in terms of present value of increased yields, would be increased over \$40 million.

2. **Screwworm Eradication in Mexico** - The U.S. spends \$5 million a year to maintain a barrier at the Mexican border to prevent entry of screwworms. A program to eradicate screwworms in northern Mexico and establish a shorter and less costly barrier would return, at an annual rate, \$2.18 to U.S. and Mexico jointly for each dollar of added investment in eradication. The break-even point would come in the second year of the program, when the cumulative costs plus losses to the U.S. would fall below the projected costs and losses if present programs are continued.
3. **Outdoor Recreation** - This study analyzed the Forest Service recreation program on National Forests and the Soil Conservation Service program of assistance to recreation development on private lands. Comparisons were made between recreation use available from these programs by census areas and indices of existing supply by census areas, developed by the Bureau of Outdoor Recreation. The development of private lands was closely correlated with the relative supply deficit divisions. The development on National Forests has been heavily concentrated in the West. The planned development for FY 1968 indicates a shift in recreation development on National Forests to the supply deficit areas of the East.
4. **Peanut Special Study** - The following alternatives to the present type price support program were considered:
(1) a producer assessment; (2) domestic certificate; and (3) edible quota. The present type program shows an estimated cost to the government for the 1967-68 marketing season of \$46 million. The producer assessment program shows cost to the Government of \$32 million, but the increase in price support level adds \$17 million to the consumer bill. The domestic certificate and edible quota programs show cost to the Government of \$21 million with an additional cost to consumers of \$34 million. In terms of cost to the Government alone, the producer assessment, the domestic certificate, and the edible quota approach are all

better than the present type of program. In terms of cost to the Government and additional cost to consumers, the present type program is a little better than either of the other programs.¹

Since these studies were reported in the Appropriations hearings, the results of ten additional analyses have been reported in the Department of Agriculture's Program and Financial Plan Summary. These analyses are summarized as follows:

1. Benefit/Cost Analysis of Research on Scab Resistant White Potato Varieties.

Research proposals to develop scab resistant varieties of white potatoes were calculated to have a favorable benefit/cost ratio of 92.8:1, assuming a ten-year research program and using a 5 percent discount rate. Effectiveness of the proposed research was estimated at 80 percent, representing the proportion of potential benefits most likely to be achieved.

2. Benefit/Cost Analysis of Research on Mechanized Equipment to Harvest Citrus Fruit.

Research proposals to develop economically efficient mechanical harvesters were calculated to have a favorable benefit/cost ratio of 115:1, assuming a ten-year research program and using a 5 percent discount rate. Effectiveness was estimated at 90 percent for citrus being processed, and 75 percent for citrus going into the fresh market, representing the proportion of potential benefits most likely to be achieved.

3. Witchweed Eradication Program Evaluation.

Witchweed is a parasitic seed-bearing plant which attacks more than 60 species of plants including corn, sorghum, sugarcane, and small grains. . . . the objectives of the program are to limit the production of the long lived

¹House Committee on Appropriations, U.S. Department of Agriculture Appropriations Hearings, 1967, op. cit., pp. 613-15.

witchweed seeds, and to limit its spread. This is achieved by applications of herbicides, quarantines, surveys, and research. The internal rate of return, estimated by comparing the effects of the present program with the consequences of letting the parasite spread, was 96 percent. This assumes a 40 percent annual increase in infested acreage. The present program, compared to a 3-year suspension, yielded an internal rate of return of over 200 percent.¹

The studies include quantitative measures of the cost of the program compared to the expected benefits. In some cases, the discount rate is cited or the internal rate of return technique is used. The Department of Agriculture stated that its analysts often prefer to calculate internal rates of return for comparing investment-type programs, rather than use a benefit/cost ratio analysis which requires discounting.² The procedure is to find the rate of discount that equates the present value of the output from an investment with the present value of the amount invested.³ In those program analyses which employ the discounting technique, the Department of Agriculture is using a discount rate representative of the Treasury's cost to borrow money.⁴

The Department of Agriculture uses both the fixed utility and the fixed budget approach to cost-utility analysis:

. . . the program planning strategy involves selecting for each program planning package a set of activities and program levels

¹U.S. Department of Agriculture, Program and Financial Plan Summary, January 1968, op. cit., pp. 3-5.

²U.S. General Accounting Office, Report Number B-162719, op. cit., p. 21.

³Ibid.

⁴Ibid.

which: (a) will yield the maximum output of specified benefits . . . within a given budget level, or (b) will yield a given output of specified benefits . . . at minimum cost . . .¹

Most of the analyses which have been summarized use a fixed utility approach. The Reforestation and Timber Stand Improvement analysis uses the fixed-budget approach. This analysis states that if expenditures were maintained at current levels for 10 years, and reallocated to highest return opportunities, additional benefits to the public of \$40 million in terms of the present value of the increase yields could be realized.²

The success of cost-utility analysis is dependent upon accurate data. Both cost estimates for the inputs to a program, as well as the accomplishments in terms of outputs, are required for the analysis. The Department of Agriculture was fortunate in having much input data available in a form which was adaptable to use in cost-utility analysis.³ However, input data are of little value in this type of analysis unless they can be related to outputs in the same terms.

There was and still is a lack of output data.⁴ However, there are meaningful measures of some of the department's activities. The timber

¹U.S. Department of Agriculture, The Planning-Programming-Budgeting System in the U.S., Department of Agriculture, op. cit., p. 14.

²U.S. Department of Agriculture, Program and Financial Plan Summary, January 1968, op. cit., p. 4.

³Claude B. Freeman, Jr., "Program Budgeting in the United States Department of Agriculture," unpublished student research report No.55, 1967, Industrial College of the Armed Forces, Washington, D.C., p. 34.

⁴Ibid.

production program output can be measured as to timber growth or timber cut. The conservation activities can be measured quantitatively by water-shed plans completed or acres improved. But the outputs of other programs such as the loan and food subsidy programs are not as easily measured.

The Department of Agriculture has recognized this problem and has developed a reporting system to gather output data:

On the output side we found that agencies had been using quantitative measures of accomplishment in the old system -- but many of them had never established reliable reporting systems to determine performance against these measures. So we have established what is called a Program Attainment Reporting System -- to obtain periodic reports on the status of achieving the outputs targeted for the year.¹

This is a problem which undoubtedly will not be solved in the near future. In order to provide meaningful information, a data bank of this nature should include several years of historical program outputs. However, the recognition of this deficiency and the development of a program to gather the required data represents a major step in the direction of providing the information required for meaningful cost-utility analysis.

Even with the increased availability of output data, it will be difficult to define the output of some of the department's programs in terms of value. One example is the food program for school children involving the school lunch and milk programs. Not only will these programs have different costs, but the benefits will be different depending upon the geographic areas of the

¹U.S. Department of Agriculture, The Planning-Programming-Budgeting System in the U.S. Department of Agriculture, op. cit., p. 17.

country in which programs are undertaken and the income levels of the population segments in these various areas. Similarly, a measure of program effectiveness or utility of the food stamp program is difficult because of diverse income levels of the target populations and different price levels throughout the nation. Lower cost programs concentrated in economically depressed areas or among low-income families, could easily have a higher cost-utility ratio than more costly programs spread over a larger segment of the population to include areas and families of moderate poverty.

Such other program elements as gathering and reporting agricultural statistics, agricultural market news, and education efforts aimed at improving rural homes and rural life are less amenable to measures of utility. In addition, there are programs administered by the department whose expenditures are fixed by law. A study based on fiscal year 1964 showed that only 52 percent of new obligational authority requested was subject to review.¹ Although this may serve to remove these programs from cost-utility analysis, it does not prevent the department from doing so and presenting any results which would justify modification of these programs.

¹Murray L. Weidenbaum, Federal Budgeting, The Choice of Government Programs (Washington, D. C.: American Enterprise Institute, 1964), p. 46.

Health Programs

There has been increasing participation by the Federal Government in the nation's health programs. From 1935 to the 1960's, expenditures for health by all government agencies - federal, state, and local - rose from 20 percent of all outlays to only 25 percent; but the federal share of outlays increased from 17 percent in 1935 to approximately 50 percent in the 1960's.¹

The Department of Health, Education and Welfare has undertaken three analyses of Disease Control Programs and one study of Maternal and Child Health Care Programs. In fiscal year 1967, Department of Health, Education and Welfare Disease Control Programs are budgeted at \$320 million.² These programs cover many of the major diseases such as heart, cancer, kidney, mental illness, and injuries. The programs are aimed at assisting state and community organizations in the development, operation, and improvement of activities to prevent disease and injury or to minimize the health effects through better diagnosis and care.

The objectives of some of the programs were cited as follows:

1. Motor Vehicle Injuries -- Reduce annual motor vehicle deaths from 55,300 projected for 1972 to 42,300 and injuries from 4,611,000 projected to 3,680,000.

¹Marvin Frankel, "Federal Health Expenditures in a Program Budget," Program Budgeting, ed. by David Novick (Cambridge, Mass.: Harvard University Press, 1965), p. 208.

²U.S. Department of Health, Education and Welfare, Program Analysis, Selected Disease Control Programs (Washington, D. C.: Government Printing Office, September 1966), p. 3.

2. Lung Cancer -- Reduce the 250,000 deaths projected for lung cancer through 1972 by 7,000; test and demonstrate education programs designed to curb smoking.
3. Tuberculosis -- Reduce annual mortality by 30 percent from 9,306 to 6,460 and prevalence by 20 percent from 100,000 to 80,000.¹

Programs may achieve objectives in the following way:

1. demonstrate and test the application of scientific advances to patient care,
2. provide for additional case finding personnel,
3. provide training for health personnel in patient care, and technical procedures,
4. improve the quality and coverage of medical practices.²

The two principal criteria used as a basis for recommending funding allocation among the programs within each disease category, as well as among the different diseases analyzed, are cost per death averted and the benefit-cost ratio.³ The cost per death averted is determined by calculating the costs of each five-year program and dividing these costs by the deaths averted as a result of the program. The cost for each program is an average cost figure. Some of the costs would actually be many times the average cost. For example, the uterine cervix program has an average cost per death averted of \$3,470; however, of the 34,000 lives expected to be saved due to the programs through 1972; 30,000 of these have an average cost of about

¹Ibid., p. 6.

²Ibid., p. 3.

³Ibid., p. 8.

\$2,000; 2,300 have an average cost of over \$3,500; and 400 have an average cost of over \$7,000.¹ While it is possible to add lives saved at the lower figure, any significant investment of funds in this program would probably be oriented toward the more expensive cases, thus averaging over \$7,000.²

The benefit-cost ratio includes both morbidity and mortality implications of the disease.³ Simply stated, it is the relationship between the amount of dollars invested in relation to the dollars saved. These savings are composed of direct and indirect dollar amounts. The direct savings are dollars that would have been spent on medical care cost including physician's fees, hospital services, drugs, etc.⁴ The indirect savings are the earnings of the individual which are saved because the patient did not die or was not incapacitated due to illness or injury.⁵ For example, a twenty-seven year old man who died this year had expected future earnings, if he had lived a full life, of \$245,000. The earnings are based on calculations for each 5-year age and sex group on the basis of 1964 life tables, 1964 labor force participation rates adjusted for full employment (an average 4 percent unemployment rate), 1964 mean earnings, inputted value of housewife's

¹Ibid.

²Ibid.

³Ibid., p. 9.

⁴Ibid.

⁵Ibid.

services, and 1964 housekeeping rates.¹ Earnings estimates are based on unpublished data from the Bureau of Census survey of earnings and income for 1964 and the Department of Commerce report of wage supplements in the Survey of Current Business.²

The earnings of \$245,000 cited in the example are then discounted to present value. A basic rate of 6 percent is used and is adjusted by 1.6 percent to reflect projected price increases per year in medical care prices.³ The difference was rounded to arrive at a 4 percent discount rate. In response to the General Accounting Office survey concerning discount rates, the Department of Health, Education and Welfare replied that it used rates from 0 to 10 percent in analyses of disease programs.⁴ However, the department added the following note:

We feel that discounting a future stream of dollars to present value is helpful, but we are uncertain what rate to set. We use several to see whether the difference is critical, for the specific purpose of the study. If it does not seriously disturb relative rankings we note this . . .⁵

The Department of Health, Education and Welfare uses both the benefit-cost ratio and the cost per death averted in its program analyses

¹U.S. Department of Health, Education and Welfare, Program Analysis, Disease Control Programs, Cancer (Washington, D. C.: Government Printing Office, 1966), p. 16.

²Ibid., p. 109.

³Ibid.

⁴U.S. General Accounting Office, op. cit., p. 19.

⁵Ibid., p. 23.

because there are two important difficulties in the use of the latter as a single criterion for determining program effectiveness:

1. There is no distinction made regarding the age at which the death is averted
2. There is no way to rank those diseases which are not primarily killers.¹

In the disease control programs there are other problems which affect the accuracy, reliability, and usefulness of the analyses. The economic loss or even death itself does not completely state the damage and harm caused by disease. Pain and its effect on family activities and relationships is difficult to measure. Benefits in the calculations do not include the spillover effects of training specialists who will take the newly learned or developed technology outside the public sector.²

There are expenses which are not included in the cost side of the analysis ratio. These are costs for which there are no direct link between the Federal decision and the costs. For example, the Seat Belt Use Educational Program will probably cause an increased consumption of these devices. The cost of the belts is not attributed to the program.³ The benefits of successful injury prevention programs could result in lower auto insurance rates. These are not credited to the program benefits.⁴

¹U.S. Department of Health, Education and Welfare, Selected Disease Control Programs, op. cit., p. 9.

²Ibid., p. 10.

³Ibid.

⁴Ibid.

Tables 1 and 2 on pages 69 and 70 provide a summary of the cost-benefit ratios of disease control programs ranked according to highest ratios and smallest cost per death averted. For the most part, there is a close correlation between the cost-benefit ratio ranking and the cost per death averted. This invites program budget emphasis on those elements which offer the highest return from dollar investment and which produce the greatest results at the cheapest cost.

It is not difficult to understand that the cost-utility analysis cannot provide the decision-maker with this type of simple choice. Certainly, the cancer programs cannot be eliminated in the fixed-budget approach. Nor can the more beneficial programs be adopted in the fixed-utility approach.

The reasoning for this conclusion is clear. As in most of the disease control programs, the interdependencies are numerous. In attempting to keep the number of variables to a manageable number, constraints in the vehicular accident complex such as law enforcement, road design, and traffic engineering were excluded.¹ The result is an analysis which includes the important variables and an outcome which is intended to provide information to sharpen the intuition of the decision-maker.

Education Programs

Under the general classification of Human Investment Programs, the Department of Health, Education and Welfare conducted a program analysis

¹U.S. Department of Health, Education and Welfare, Program Analysis, Motor Vehicle Injury Prevention Program (Washington, D. C.: General Printing Office, August 1966), p. 2.

TABLE 1
 SELECTED DISEASE CONTROL PROGRAMS
 COSTS PER DEATH AVERTED 1968 - 1972

| Program | Deaths Averted | Program Cost Per Death Averted |
|------------------------|--------------------|-----------------------------------|
| Seat Belt Use | 23,930 | \$ 87 |
| Restraint Devices | 5,811 | 103 |
| Pedestrian Injury | 1,650 | 666 |
| Motorcyclist Helmets | 2,398 | 3,336 |
| Uterine Cervix Cancer | 34,200 | 3,470 |
| Reduce Driver Drinking | 5,340 | 5,824 |
| Lung Cancer (Smoking) | 7,000 ^a | 6,400 |
| Breast Cancer | 2,396 | 7,663 |
| Driver Licensing | 442 | 13,801 |
| Syphilis | 11,590 | 22,252 |
| Tuberculosis | 5,700 | 22,807 |
| Head and Neck Cancer | 268 | 29,100 |
| Colon-Rectum Cancer | 170 | 42,944 |
| Arthritis | N/A | N/A |

^aLives saved through 1972 only.

Source: U.S. Department of Health, Education and Welfare, Program Analysis, Selected Disease Control Programs (Washington, D.C.: Government Printing Office, September 1966), p. 12.

TABLE 2
 SELECTED DISEASE CONTROL PROGRAMS
 BENEFIT COST DATA
 (\$ millions)^a

| Program | 1968-1972 HEW Cost ^b (millions) 1 | 1968-1972 HEW & Others Direct Costs ^c (millions) 2 | 1968-1972 Savings Direct and Indirect ^c (millions) 3 | Benefit Cost Ratio 4 |
|---------------------------|-------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------|
| Seat Belt Use | \$ 2.2 | \$ 2.0 | \$2,728 | 1351.4 |
| Restraint Devices | .7 | .6 | 681 | 1117.1 |
| Pedestrian Injury | 1.1 | 1.1 | 153 | 144.3 |
| Motorcyclist Helmets | 8.0 | 7.4 | 413 | 55.6 |
| Arthritis | 37.6 | 35.0 | 1,489 | 42.5 |
| Reduce Driver Drinking | 31.1 | 28.5 | 613 | 21.5 |
| Syphilis | 55.0 | 179.3 ^b | 2,993 | 16.7 |
| Uterine Cervix Cancer | 73.7 | 118.1 | 1,071 | 9.0 |
| Lung Cancer | 47.0 | 47.0 ^b | 268 | 5.7 |
| Breast Cancer | 17.0 | 22.4 | 101 | 4.5 |
| Tuberculosis | 130.0 | 130.0 | 573 | 4.4 |
| Driver Licensing | 6.6 | 6.1 | 23 | 3.8 |
| Head and Neck Cancer | 8.1 | 7.8 | 9 | 1.1 |
| Colon-Rectum Cancer | 7.7 | 7.3 | 4 | .5 |

^aFunding shown used as basis for analysis not necessarily funding to be supported by Administration.

^bNot discounted.

^cDiscounted.

Source: U.S. Department of Health, Education and Welfare, Program Analysis, Selected Disease Control Programs (Washington, D.C.: Government Printing Office, September 1966), p. 11.

of Adult Basic Education Work and Experience Training in 1966. The objective of the program is stated in Title II.B of the Economic Opportunity Act of 1964:

to initiate programs of instruction for individuals who have attained age 18 and whose inability to read and write the English language constitutes a substantial impairment of their ability to get and retain employment commensurate with their real ability, so as to help eliminate such inability and raise the level of education of such individuals with a view to making them less likely to become dependent upon others. . . .¹

The expected program benefits are provided in the analysis:

1. Maximize the change in the total lifetime earnings of the target population.
2. Reduction in Federal, State, and local welfare payments to the beneficiaries of the program.
3. Improve the potential for children of those who participate in the education program.
4. Enhance participants ability to enjoy a wider variety of recreational activities by improving their economic status over the long run.²

The significant criterion in education program analysis is improved potential earnings of the individual participant. While it may be more beneficial to aim disease control programs at the youngest target group with the greatest potential earnings, the education programs appear to be more beneficial when directed toward a medium age group of lower education

¹U.S. Department of Health, Education and Welfare, Program Analysis, Adult Basic Education Work Experience and Training, (Washington, D. C.: Government Printing Office, September 1966), p. 2.

²Ibid.

levels. This would show the earliest realization of improved earnings potential. In the education programs, there is a secondary benefit. The reduction of welfare payments to the target population also makes these programs attractive because through education, the unemployed become employable and can be removed from welfare rolls.

The magnitude of the benefits will vary with the composition of the target population. Such characteristics as age, sex, and the level of educational attainment at the time of entry into the program will influence the cost-utility analysis.

The remainder of this section is an abbreviated summary and analysis of the application of cost-utility techniques to the Adult Basic Education Program.¹

Four variables were tested for sensitivity in the Adult Basic Educational Program. Using census data, the hypothetical target population was distributed among the following four levels of educational attainment: zero years of school, 1-4 years of school (E.1); 5-7 years of school (E.2); and 8 years of school (E.3). Two dropout rates of 25% (D.1) and 15% (D.2) were hypothesized. It was assumed that dropouts receive no quantitative benefits from the program.

The sex variable was varied to represent a population which is 75% male and 25% female (S.1), 50% male and 50% female (S.2), and 25% male and 75% female (S.3). It was further hypothesized that the target population

¹Ibid., pp. 1-16.

has one of three age distributions. These were grouped as ages 18-44 (A.1), the age distribution of those actually currently enrolled in the Adult Basic Education Program 18-64 (A.2), and a relatively old population 35-64 (A.3).

It was necessary to calculate the present value of the expected lifetime incomes of males and females at each age from 18-64 with 0, 1-4, 5-7, and 8 years of schooling. Median income data for the 1960 Census of Population were utilized. Since the median income data are for those persons who were actually employed in 1959, the median income for individuals with any given age, sex, and level of educational attainment was adjusted by the appropriate labor force participation and unemployment rates. In addition, the adjusted median income data were multiplied by the appropriate survival rates for males and females for each age from 18-64.

For a given target population alternative, the present value of the anticipated total lifetime income of a thousand persons was calculated. Then, the educational characteristics of the specified target population were modified to reflect the increased level of educational attainment which resulted from the Adult Basic Educational Program. In achieving an educational level of attainment for the specified target population, it was assumed that each individual who does not drop out of the program will move up one educational level. To measure the present value of the anticipated increase in income attributable to the Adult Basic Education Program, the before and after estimates of the present value of the anticipated lifetime income for a specified target population were subtracted from one another. With several

exceptions, the same general procedure outlined previously for income benefits was utilized to calculate the present value of the anticipated welfare savings associated with a given target population.

Cost information for this program is not complete. Estimates indicate that the average training position occupying one classroom seat for a complete year would cost \$379 in FY 1967.

Table 3 shows selected cost-utility ratios. The hypothetical population with the characteristics E.2, A.2, S.3, and D.1 will yield quantifiable benefits of \$8.8 million for each \$1 million expended on the program. It is evident from Table 3 that the anticipated benefits increase with a change in the population variable mix.

The benefits of the Adult Basic Education Program rest on the potential for raising the income-earning capacity of educationally deprived adults. However, there is almost a complete lack of information on the actual effectiveness of the program in improving literacy and raising the earnings capabilities of participants.¹

The analysis is also built on the assumption that an individual who participates in the Adult Basic Education Program advances from a given equivalent number of years of education to completion of a higher equivalent number of years of education and can command the differential in income between the two different education levels as indicated in the 1960 Census

¹U.S. Department of Health, Education and Welfare, Program Analysis, Adult Basic Education Work Experience and Training, op. cit., p. 14.

TABLE 3

ADULT BASIC EDUCATION PROGRAM

BENEFIT COST RATIOS

(Assumption E.2, r=8%)

| <u>Target Population Characteristics and Dropout Rate</u> | <u>Cost-Utility Ratios</u> |
|-------------------------------------------------------------------|--------------------------------|
| A ₂ -S ₃ -D ₁ | 8.8:1.0 |
| A ₁ -S ₃ -D ₁ | 9.8:1.0 |
| A ₂ -S ₃ -D ₂ | 10.0:1.0 |
| A ₂ -S ₂ -D ₁ | 13.3:1.0 |
| A ₂ -S ₁ -D ₁ | 17.8:1.0 |
| A ₁ -S ₁ -D ₂ | 22.4:1.0 |
| A ₃ -S ₃ -D ₁ | 4.3:1.0 |

KEY:

E.2 - Distribution of years of schooling for the target group:
0 years - 10%, 1-4 years - 60%, 5-7 years - 30%

A.2 - Age distribution 18-64

S.3 - 25% Male, 75% Female

D.1 - 25% dropout rate

Source: U.S. Department of Health, Education and Welfare, Program Analysis, Adult Basic Education Work Experience and Training (Washington, D.C.: Government Printing Office, September 1966), p. 15.

data.¹ This assumption is deficient for two reasons. One, the program concentrates on only a portion of the skills acquired in the regular school system and, thus, the equivalent potential earnings impact does not result.² Second, those who participate in the program are likely to be among the unskilled and unemployed who will be unlikely to improve their earnings capabilities without additional occupational training.³

There are other benefits of the program which are not measurable. People whose literacy has been improved are better able to carry out their civic responsibilities, such as voting and family development. The children of such people should do better in school and, thus, benefit from the education of their parents.

There is a lack of data on the effect that alternative methods of producing adult basic education might have on the costs and the quantifiable benefits of the program.⁴ If the number of training positions was decreased and the funds resulting from this action were spent on increasing teaching aids and instructional aids, an increase in the number of individuals who complete one instructional level in a given fiscal year may result.⁵ Likewise, an increase in the student-teacher ratio may result in an increase in

¹Ibid., p. 15.

²Ibid.

³Ibid.

⁴Ibid., p. 16.

⁵Ibid.

the average length of time required to complete the various instruction levels; but this effect might be more than compensated for by the reduction in costs resulting from an increase in the student-teacher ratio.¹

It is apparent that the lack of data and the apparent inability to establish and quantify functional relationships in these areas detracts from the accuracy and reliability of the analyses. The fact that many of the programs of the Department of Health, Education and Welfare are grant-in-aid type involving educational efforts at the state and local level, also makes this type of analysis difficult.

Significance of Cost-Utility Analysis

Fisher's fifth distinguishing characteristic of cost-utility analysis (see page 53) is probably more important than the order of presentation would suggest. The cost-utility analysis in the agriculture and health and education fields must be supplemented with qualitative analysis. This does not mean that this type of analysis is not useful in these fields. Enthoven, who has worked in the Department of Defense for a number of years, made the following statement concerning the application of the concept of non-defense programs:

. . . let me repeat my conviction that Systems Analysis can be applied fruitfully to social problems. I feel certain that good analysis can assist in the design, development and consideration of alternative approaches to education, health, natural resources, urban transportation . . . and numerous other problems. It is often suggested that these problems

¹Ibid.

will be resistant to systematic analysis because they do not lend themselves to quantification. . . . It has been our experience that in those areas most difficult to quantify, years of research and the application of a good deal of ingenuity will often yield ways of measuring and making comparisons that were not available at the outset.¹

At the decision-making levels, it will probably be difficult to resist the natural tendency to use the quantitative results of cost-utility analysis in trading off between more health and less education. It is at this point that the results of cost-utility analysis should be combined with the qualitative analysis and the judgment of the decision-maker. It should be remembered that the thrust of cost-utility analysis is in the direction of sharpening the intuition of the decision-maker. The intent is to provide the decision-maker with an array of information which will assist him in making better decisions. Yet, the most complete and accurate analysis cannot provide the basis for trading off between program areas in resource allocation decisions. In evaluating the Department of Health, Education and Welfare's efforts in cost-utility analysis, Assistant Secretary Gorham testified as follows:

Let me hasten to point out that we have not attempted any grandiose cost-benefit analyses designed to reveal whether the total benefits from an additional million dollars spent on health programs would be higher or lower than from an additional million spent on education or welfare. If I was

¹Statement of Alain C. Enthoven, Assistant Secretary of Defense, Systems Analysis, U.S. Senate, Committee on Government Operations, Planning-Programming-Budgeting, Selected Comment, 90th Congress, 1st Session (Washington, D. C.: Government Printing Office, 1967), pp. 9-10.

naive enough to think this sort of analysis possible, I no longer am. The benefits of health education and welfare programs are diverse and often intangible. . . . The "grand decisions" - how much welfare, and which groups in the population shall benefit - are questions of value judgments and politics. The analyst cannot make much contribution to their resolution.¹

In recognizing the value judgments and political implications in resource allocation decisions, the program analyst's task then appears to be that of improving the ability of the decision-maker by providing better information or at least information from which the decision maker can determine what is being bought by incremental dollars of expenditure in the various program areas.

Summary

By discounting the costs and quantifiable benefits of programs, the Departments of Agriculture and Health, Education and Welfare have been able to develop cost-utility ratios for some of their program outputs. In addition to this measure, the Department of Health, Education and Welfare has adopted the cost-per-death-averted and the increase-in-earnings-potential as measures of the effectiveness of their programs. Both of these analyses center around the earnings of the individual and are based on some deficient assumptions.

These efforts at developing cost-utility analyses cited in the programs analyzed, represent the initial attempts to adapt this concept to

¹William Gorham, Testimony, Joint Economic Committee, PPBS Hearings, 1967, op. cit., p. 5.

non-defense areas. Such problems as lack of specific data applicable to the situation and the absence of a uniform discount rate, make comparison of the results difficult. In addition, there are conceptual problems concerning analysis design and the inability to establish functional relationships between certain variables in the analysis. These problems will take a great deal of time to resolve. Nevertheless, the progress in using cost-utility analysis in the fields cited is significant.

In the future, it is anticipated that better analyses will provide the decision-maker with more relevant information based on better quality data which will assist in allocating resources at the Federal level. It is important that the basic purpose of the analysis be recognized.

CHAPTER V
SYSTEM PERSPECTIVES

Progress and Prospects

The introduction of Planning-Programming-Budgeting to the non-defense agencies was an ambitious undertaking. Pilot studies were conducted in early 1965 concerning the feasibility of introducing the system to the civilian agencies.¹ However, there was little time to evaluate the results of the studies. The directive for the implementation of the system in all agencies was issued in October 1965.²

It is generally accepted that Planning-Programming-Budgeting was introduced to the Department of Defense in 1961 and that the experience with the system thusfar in that department has been successful.³ However, according to Enthoven, the system was not in full operation in the Defense Department until January 1963.⁴ Thus, there was little more than two and one-half years' experience with the system in the Defense Department before its use was extended to the other Federal agencies.

¹See Chapter III, p. 47.

²U.S. Bureau of the Budget Bulletin No. 66-3, October 12, 1965.

³See Chapter I, p. 1.

⁴Testimony of Dr. Alain C. Enthoven, Assistant Secretary of Defense, Systems Analysis, Senate Committee on Government Operations, PPBS Hearings, September 27, 1967, op. cit., p. 88.

With this perspective in mind, most officials interviewed agreed that progress made in implementing the Planning-Programming-Budgeting System in the non-defense agencies has been good. The Departments of Health, Education and Welfare and Agriculture have been cited to this writer as having made significant progress. Former Budget Bureau Director Schultze evaluated the general progress in recent testimony:

. . . Not surprisingly, the application of PPB to 21 agencies so far (36 agencies ultimately) dealing with a variety of national problems, has resulted in great differences in technique and result. Performance so far has been spotty, with great disparities between agencies and between constituent parts of agencies. This is due in part to differences in the extent to which agencies have worked out means of adapting and using PPB . . .¹

The report of the Joint Economic Committee of the U. S. Congress summarized progress of the agencies in adapting Planning-Programming-Budgeting as a result of the hearings held in late 1967:

. . . executive agencies appear to be progressing at a moderate rate toward efficient application of PPBS to their activities.²

These statements, as well as related comments from officials interviewed by this writer, imply good prospects for future progress and are optimistic. They are in conformity with Steiner's writings on the subject:

¹Charles L. Schultze, Statement before the Senate Committee on Government Operations, PPBS Hearings, op. cit., p. 25.

²U.S. Congress, Joint Economic Committee, PPBS Progress and Potentials, Report, op. cit., p. 4.

There is no question about the fact that important milestones have been achieved in introducing program budgeting into federal budgetary operations. The question is not, Shall the use of program budgeting be expanded? It is rather, How fast and in what depth shall program budgeting be further used in the federal government?¹

In conformance with the structure of this paper, a perspective for evaluating the progress and potential and for understanding the problems facing the non-defense agencies in implementing Planning-Programming-Budgeting is presented.

Goals and Objectives

An attempt to define national goals was undertaken by a commission created by President Eisenhower. The recommendation of the Committee was that a redefinition of broad goals, objectives, and priorities for governmental action be undertaken at the beginning of each presidential term during the coming decade.² In recent years, however, President Johnson has used ad hoc task forces in formulating broad objectives.³

These are the goals and objectives around which Planning-Programming-Budgeting centers. In interpreting the Bureau of the Budget's directive for implementing the system, Schultze provided a definition for goals and objectives:

¹George A. Steiner, "Problems in Implementing Program Budgeting," Program Budgeting, ed. by David Novick (Cambridge, Mass.: Harvard University Press, 1965), p. 308.

²Committee for Economic Development, Budgeting for National Objectives. A statement by the Research and Policy Committee (New York: 1966), pp. 27-8.

³Ibid.

We generally would define "goal" or "objective" as being a statement of national purpose. . . . The statement of national goals is, of course, a function of the political process, but there is a great deal of variation in the specificity with which our goals are expressed initially.¹

The degree of specificity required and the process for developing national goals and objectives are somewhat uncertain. There were no specific goals and objectives provided to the agencies for use in developing a more narrow set of goals and objectives. In this area, Planning-Programming-Budgeting itself is being looked to as a basis for formulating national goals and objectives:

. . . PPB can provide information on what it would cost, in money and in other ways, and what we would accomplish if we did adopt a particular goal. In this way it can stimulate the specification of our goals that is necessary if they are to guide program decisions.²

Whether goals and objectives of the Executive department are developed in this manner or are created by a commission established by the President, there is a need for increasing the specificity of goals and objectives for use by the agencies. Smithies says, "governmental objectives should be as clearly and explicitly defined as possible."³

Weitzel supports Smithies point of view:

. . . there is simply no chance of developing and operating programs on rational bases if this essential requirement

¹Charles L. Schultze, Statement before the Senate Committee on Government Operations, PPBS Hearings, August 28, 1968, op. cit., p. 54.

²Ibid.

³Smithies, op. cit., p. 25.

[explicit identification of objectives] has not been satisfied. This will frequently involve an agonizing reappraisal of long-established programs, but whether this involves merely making explicit previously identified aims or a redirection of effort, it is the cornerstone of effective planning/budgeting.¹

Because of the lack of explicit national goals and objectives, agencies have had latitude in establishing their own. Undoubtedly, these conform in a broad sense to national goals and objectives, but they may not foster the optimum allocation of resources. The Bureau of the Budget has apparently begun to work in this area:

. . . the Bureau of the Budget has created a small Resources Planning Staff to work on problems of interprogram and inter-sector priorities and longer range resource allocation.²

The formulation of national goals and objectives will require the participation of the Legislative and Executive branches. The development of such goals and objectives, if such an objective is realized at all, will undoubtedly be in the distant future. In the meantime, there are benefits to be derived from the requirement that goals and objectives be developed at the agency level. Henry Rowen, former Associate Director of the Bureau of the Budget, and now President of the RAND Corporation, expressed the following in testimony to the Joint Economic Committee:

If PPB led to nothing more than each agency re-examining its objectives, then PPB would be a successful system. In such complex subjects [as health care and education] there is a

¹Frank H. Weltzel, Assistant U.S. Comptroller General, Statement before the Joint Economic Committee, PPBS Hearings, September 20, 1967, op. cit., p. 215.

²Michael S. March, "Federal Programs for Human Resource Development," unpublished article, February 12, 1968, p. 91.

danger that poor work will reduce the multiple, incommensurable, and conflicting goals to a single objective that admits of easy measurement: for example, the loss of gross national product occasioned by deaths from heart attack . . . But the risks of selecting the wrong goals are minimized if it is required that the analysis be clear and explicit, that it be open and subject to review and criticism, and that it be exposed to competitive analysis.¹

It is not difficult to understand why some of the objectives of the departments studied are narrow while others are quite broad.

Program Structure and Organization

The introduction of Planning-Programming-Budgeting to the civilian agencies presented a choice concerning development of a program structure. The option was either to include those activities of the agency which fit a predetermined program structure designed to reflect the agency's proper mission in the overall national scheme and composed of program sub-categories which were amenable to cost-utility analysis, or to construct a program structure which included all present activities and functions. The choice of the two departments studied to include all present activities and functions in the program structures represented a logical beginning. For in this approach, each department was able to consider the entire operation and thus obtain a better position to determine its future mission, goals, and objectives.

The program structure should not be regarded as static, but rather as subject to modification as agency goals, objectives, and missions are revised. As Anshen says:

¹Henry S. Rowen, Statement before the Joint Economic Committee, PPBS Hearings, September 20, 1967, op. cit., p. 186.

. . . It would be unrealistic to assume that any initial program budget structure would in operation be found to be fully and continually responsive to the planning requirements of the federal government. The composition of individual programs will require revision as a result of knowledge gained through annual budget-making experience.¹

The development of broad program structures by the Departments of Agriculture and Health, Education and Welfare permits this refinement of the structure as more experience is gained with Planning-Programming-Budgeting.

The program structures of the two departments studied cut across organizational lines within the departments. The structures also include only portions of certain national programs. For example, forty-two Federal departments, agencies, and bureaus have funds for education in their budgets.² In the field of health, funds are distributed among at least twelve agencies and six departments outside the Department of Health, Education and Welfare.³ Concerning this situation, Frankel says:

. . . It also causes one to doubt whether there can exist in the administrative echelons the kind of overall perspective that would seem indispensable if federal health resources are to be rationally allocated.⁴

¹Melvin Anshen, "The Program Budget in Operation," Program Budgeting, ed. by David Novick (Cambridge, Massachusetts: Harvard University Press, 1965), pp. 355-56.

²Werner Z Hirsch, "Education in the Program Budget," Program Budgeting, ed. by David Novick (Cambridge, Massachusetts: Harvard University Press, 1965), p. 179.

³Wildavsky, op. cit., p. 304.

⁴Frankel, op. cit., p. 237.

Similarly, other authors are proponents of the need for changing the present organization of the Executive department.¹ There have been recommendations for organizational changes within departments such as that cited by Assistant Secretary Gorham of the Department of Health, Education and Welfare:

Within our own agencies, we have made some recommendations to transfer functions from one of the subordinate agencies to another as a result of our analysis.²

Undoubtedly there will be recommendations for reassignment of responsibilities from one department to another as more experience is gained with Planning-Programming-Budgeting. In this regard, however, Steiner says:

The success of program budgeting neither depends on nor requires great immediate reorganization of government. Some reorganization would indeed be helpful, but it would be better to get on with the job of introducing program budgeting. . . . If Secretary McNamara had tried to reorganize the Pentagon in conformance with program budgeting needs, he would still be reorganizing. . . .³

For the immediate future, a dual budget system is expected to exist and consideration of one in terms of the other will be carried out by translating through "crosswalks." This arrangement permits aggregation of the costs and benefits of similar programs at the Executive level. Thus, there is no immediate need for changing the present organization in order to analyze program costs and benefits in the aggregate.

¹Steiner and Hirsch in Ibid., p. 348 and p. 280.

²William Gorham, Testimony before the Joint Economic Committee, PPBS Hearings, op. cit., p. 79.

³Steiner, op. cit., p. 349.

Anshen suggests that one way of doing this might be through the Bureau of the Budget.¹ Former Budget Director Schultze shed some light on the Budget Bureau's plans:

. . . we are trying to build up . . . a very complicated system, a classification system which, when somebody wants a special classification, lets us push a computer button and come up with that special classification. . . . We are working toward it but I can't promise it to you for five years. When you start looking at the difficulty of getting the federal budget into a set of building blocks, so that you can cut it almost any way, it is a tremendous information system. I have a specific team working on this to try to come up with a system which will do it.²

The Congress has also expressed interest in developing an information system which will permit it to use some modified form of Planning-Programming-Budgeting in the appropriation process.³ The General Accounting Office has recently begun a survey of the use of Planning-Programming-Budgeting in the Executive departments and agencies in order to provide advice in this matter to the Congress.⁴

¹Anshen, op. cit., p. 360.

²Charles L. Schultze, Statement before the Senate Committee on Government Operations, PPBS Hearings, op. cit., p. 51.

³U.S. Congress, Joint Economic Committee, PPBS: Progress and Potentials, Report, 1967, op. cit., p. 8.

⁴Interview with Keith E. Marvin, Associate Director, Office of Policy and Special Studies, U.S. General Accounting Office, April 2, 1968.

Cost-Utility Analysis

Cost-utility analysis is the heart of the Planning-Programming-Budgeting System. Yet, it is in this area that most of the difficulties seem to exist. John Haldi, former Chief of the Program and Evaluation Staff of the Bureau of the Budget, with the responsibility for the application of Planning-Programming-Budgeting said:

Probably the most important component of the PPB system, the most difficult to initiate, and the most difficult part to gain acceptance of in the Government is systematic analysis of Government programs.¹

These difficulties are related to the problem of defining goals and objectives. Others involve difficulties in quantifying the outputs of programs as discussed in Chapter IV. Both the Departments of Agriculture and Health, Education and Welfare also cited the problems of obtaining qualified staff analysts for the newly created program offices.² This problem was not peculiar to these departments. Concerning the availability of qualified personnel, Henry Rowen said:

. . . we have a very serious problem in the shortage of talent. There is not all that much to go around. The people at this table can testify, and in Washington as well, that there is a rather substantial number of Government agencies scrambling for a rather limited supply of talent.³

¹John Haldi, Statement before the Joint Economic Committee, PPBS: Progress and Potentials, September 21, 1967, op. cit., p. 200.

²See Chapter III, pp. 42-43.

³Rowen, op. cit., p. 187.

There are also problems of a uniform discount rate and the absence of necessary data for carrying out analyses. Assistant Secretary Gorham provided a specific example about lack of information in the health area:

. . . We have stopped anticipating easy analyses, by the way. Hard information on the state of health of children is difficult to come by. Surprisingly, estimates of improvement in health attributable to medical care are almost nonexistent. We simply do not know whether children who receive medical checkups and continuous medical attention are healthier than those who do not.¹

In addition, there are the political considerations in the decision-making or resource-allocation processes, but which are not included in the cost-utility analysis. Nevertheless, there are valuable results to be expected. Wildavsky says:

The dependence of cost-benefit analysis on a prior political framework does not mean that it is a useless or trivial exercise. Decisions must be made. If quantifiable economic costs and benefits are not everything, neither would a decision-maker wish to ignore them entirely. The great advantage of cost-benefit analysis, when pursued with integrity, is that some implicit judgments are made explicit and subject to analysis.²

Much emphasis will probably be placed on improving the analytic capabilities of the agencies. This is an area requiring creative ability and progress will therefore be slow. In the initial stages of implementing Planning-Programming-Budgeting in the non-defense agencies, the principal efforts were in dealing with questions of format and structure and the phasing of procedures into the budgetary cycle.³ In the future, the effort

¹Gorham, op. cit., p. 7.

²Wildavsky, op. cit., p. 297.

³Rowen, op. cit., p. 185.

should be devoted increasingly to better analysis, to being more inventive and more imaginative at designing useful alternatives.¹ It is anticipated that the two departments studied will pursue this course.

Observations

The progress thus far in implementing Planning-Programming-Budgeting in the two departments studied represents only a beginning. If a longer period had been allowed for planning prior to issuing the directive to implement the system, more progress might have been possible. But it would have been only slightly more progress. The interdependencies, incommensurables, and the nature of the elements of the system, the differences in department organizations, missions, information systems, programs, and activities make the entire undertaking experimental.

Because it is experimental, there should not be expectations for revolutionizing the budget process, the allocation of resources, or changes in administrative organizations. The literature and the interviews conducted by this writer lead to the conclusion that the art of cost-utility analysis has not progressed to the point where it will permit trade-offs between health and education programs or between any other programs. The state-of-the-art may never reach this stage because of the political processes and the intuitive judgments involved. For these reasons, Planning-Programming-

¹Ibid.

Budgeting should not be oversold. The report of hearings held by the Subcommittee on Economy in Government of the Joint Economic Committee concluded:

There is a tendency to exaggerate both the potential and the progress of PPBS. Judging from the brief hearings held, it is the subcommittee's conclusion that some progress has been made in bringing a more rational means of decision making into the public sector, but that this is only a beginning. The Government has a long way to go in applying PPBS or any similar system of program management on any kind of comprehensive basis. . . . Our knowledge is not sufficiently advanced to answer definitely such questions as whether we ought to put more money into housing or welfare Given determined objectives, cost-benefit analysis or any other systems approach can help us in deciding which alternative would provide the most effective means of achieving an objective. But we should not expect it to go beyond this.¹

Several officials interviewed reported resistance in the two departments and agencies to Planning-Programming-Budgeting. But this does not appear to be a serious problem since some of the same officials explained that education has reduced resistance. Rather than fail due to resistance, there is the danger that the bureaucracy will twist the elements of Planning-Programming-Budgeting into such a form and modify the procedures and methods so as to reduce the probabilities for changes in organization or in the allocation of funds which may be indicated. Two officials interviewed acknowledged this prospect.²

¹U.S. Congress, Joint Economic Committee, PPBS: Progress and Potentials, Report, op. cit., p. 9.

²Dr. Douglas Wilson, Department of Health, Education and Welfare and Clare Hendee, U.S. Forest Service.

Most officials interviewed agreed that if Planning-Programming-Budgeting did not succeed in accordance with present expectations, the planning organizations and functions established in the two departments studied would probably be retained. It is felt that they have become valuable to top management in the departments and agencies.

It is in this context that the initial stages of implementing Planning-Programming-Budgeting should be viewed. That is, it represents improved planning and information for top management. In the future, it represents a system with the potential for integrating planning and budgeting, a basis for making rational recommendations for resource allocations, and ultimately a feed-back system reporting outputs and effectiveness of budget decisions.

Summary

Planning-Programming-Budgeting was introduced to the non-defense agencies on relatively short notice. The two departments studied have made better-than-average progress in implementing it. Because of the experimental nature of the undertaking, it is doubtful that much more could have been made, even if a longer preliminary study period had been allowed.

Broad program structures were developed by the two departments. This permits flexibility in refining the structure and possibly the organization to conform with agency goals and objectives which are expected to be refined as a result of implementing the system.

Cost-utility analysis presents the more difficult aspect of the Planning-Programming-Budgeting System. The initial analyses developed

by the two departments studied are promising. This is the area in which future efforts will probably be concentrated. However, the limitations of cost-utility analysis should be recognized especially in light of the political framework in which resource allocation decisions are made.

In the long run, the system represents improved planning and a basis for making more rational budget recommendations. It should not be expected to revolutionize budgeting or organizations overnight. For these reasons, it should not be oversold.

CHAPTER VI
IN CONCLUSION

As suggested earlier, the Departments of Agriculture and Health, Education and Welfare have made considerable progress in the last two years in implementing Planning-Programming-Budgeting. There are problem areas in each department which have been discussed in this paper. The following is a summary of the problem areas. They apply to both departments, although they may be regarded with differing degrees of concern in each:

1. Lack of specific national goals upon which to base department and agency sub-goals. Hopefully, the former will emerge from the Executive and Legislative Branches. These may still be quite broad and thus the departments need to develop agreement on their own program goals and objectives.
2. Lack of adequate data for many programs. This deficiency has its major impact in the limitation it places on the capability to develop meaningful cost-utility analyses. Efforts to collect required data may take several years. In the interim, best estimates or imputed data can be used if limitations are explicitly recognized.
3. Insufficient numbers of trained and experienced personnel. The dissatisfaction with the various training programs suggests that on-the-job training may provide the solution given that individuals have a predetermined education level in the required fields.

4. Inability to measure output of programs. This is related to the lack of data in many cases, but may also be related to the expectation that esoteric values or measures are possible.
5. Difficulties in designing analyses. The selection of proper criteria and the difficulties in establishing functional relationships makes design of cost-utility analyses challenging. The problems of interdependencies and incommensurables is also pertinent.
6. Continuing resistance and foot-dragging by some people who don't like change, or who are not convinced that this particular change will help them. This problem is underlined by the Department of Agriculture but, of course, is present elsewhere as well.¹ It is not, however, as serious a problem as some others and is being overcome through education.² The Department of Health, Education and Welfare, for example, does not regard this as a major problem.³

Many of these problems are interrelated. For example, the inter-relationship of like programs carried out by other Federal, as well as state, agencies makes cost-utility analysis at the Federal department level

¹U.S. Department of Agriculture, The Planning-Programming-Budgeting System in the U.S. Department of Agriculture, op. cit., p. 18.

²Interview with William Carlson, March 28, 1968.

³Interview with Dr. Douglas Wilson, op. cit.

difficult. It also involves the difficulty in measuring program outputs and developing goals and objectives.

These problems have not overshadowed the accomplishments of Planning-Programming-Budgeting in the implementation phase. Witnesses of the Executive branch testified that in the relatively short time since its inception, Planning-Programming-Budgeting has produced the following results:

1. Agencies can see their objectives in a more comprehensive framework.
2. Agencies have become more aware of and have sought out alternative ways of achieving program objectives.
3. Planning-Programming-Budgeting has been very helpful in determining program priorities.
4. Planning-Programming-Budgeting has promoted a more specific expression of program objectives.¹

These are representative of the accomplishments of Planning-Programming-Budgeting thus far as cited by officials interviewed in the two departments studied and by those of other agencies such as the General Accounting Office and the Bureau of the Budget.

The accomplishments relate directly to the objectives cited by President Johnson when the implementation of the System was directed in

¹Joint Economic Committee, PPBS: Progress and Potentials, Report, op. cit., p. 3.

1965.¹ In future efforts to complete the implementation of Planning-Programming-Budgeting and to make it a viable system for planning and budgeting, it should be anticipated that improvement in certain areas of management will result. These may be categorized as follows:

1. A more rational basis for resource allocation. The information developed as a result of measuring program outputs, inventing alternative means for accomplishing objectives, and analyzing the alternatives to determine the least costly and most effective means will provide the decision-maker with choices and an array of supporting information not previously available in this form. The prospect of Planning-Programming-Budgeting becoming a true system with feedback on the accomplishments of programs in quantifiable measures will further improve the quality of information available to the decision-maker. All of this will serve to provide heads of agencies, departments, the President and the Congress with better information upon which to base resource allocation decisions. While it may not alter radically the present budget system or the mechanics for proposing and authorizing appropriations, it should raise the level of the dialogue to the more relevant issues.
2. Improved management of resources through integration of planning and budgeting. The requirement to develop a Five-Year

¹See Chapter II, p. 18.

Program and Financial Plan and the necessity for basing each year's budget on the programs of the department or agency, suggests that a form of long-range planning be undertaken. In this effort, management at all levels of the Federal government will direct increased attention to acquisition, use, and disposition of resources in terms of a budget plan which extends beyond the traditional one-year period. In effect, management will be provided with the objectives, alternatives for achieving those objectives, and an explicit five-year financial plan for achieving those objectives. This can serve as a better basis upon which to make current operating decisions which have an impact on or are related to the long-range plan expressed in the program budget.

3. Impact on State and local governments. Successful implementation of Planning-Programming-Budgeting at the Federal level should have spillover effects on State and local governments because of mutual problems and the force of example set by the Federal government.¹ Because all governments experience resource allocation problems, and particularly because State and local governments are closely tied to Federal programs such as education, housing, and health through grant-in-aid

¹Anshen, op. cit., p. 365.

or similar arrangements, it can be expected that the former will be encouraged to adopt Planning-Programming-Budgeting. This will permit Federal departments and agencies to obtain and include the activities of State and local governments in program decisions and resource allocations. It should promote better measurement of effectiveness of programs because both Federal, State, and local governments will employ compatible program structures and information reporting systems. In the final analysis, it may improve communications between various levels of government. This may invite greater participation in program decisions by the lower levels of government.

4. Long-range planning in government and industry. Program budgeting brings to government the necessary framework to assure comprehensive, reasonably consistent, and organized long-range planning of a type so successfully developed in business.¹ While the details of long-range planning in business are somewhat different from those used by government in program budgeting, the basic characteristics and derivative values are comparable.² By emphasizing the long-range implications of Federal budget decisions in the Five-Year Program and

¹Steiner, op. cit., p. 47.

²Ibid.

Financial Plan, private enterprise can become a more cooperative partner with government in promoting the economic and social objectives of the nation. The availability of long-range Federal resource allocation plans in program terms, even though not a firm commitment of the President or the Congress, may serve as a better guide for industry planning than the traditional one-year Federal budget.

The success of Planning-Programming-Budgeting in the non-defense departments is dependent upon the support given to it by top management. Both the Departments of Agriculture and Health, Education and Welfare appear to support the System and its concepts.¹

The prospects for success, however, are related to the political environment in which program budgeting operates. There are differences of opinion on how program budgeting should be regarded. Wildavsky holds that:

. . . if the present budgetary process is . . . unsatisfactory, then one must alter . . . the political system of which the budget is but an expression.²

¹According to officials interviewed

²Aaron Wildavsky, The Politics of the Budgetary Process, op. cit., p. 131.

Hirsch views program budgeting as:

. . . a planning and management process which departs from the earlier . . . Federal budget design and process that was shaped mainly by the desire to safeguard appropriations against careless or malfasant members of the Executive branch . . .¹

Anshen says that the program budget:

. . . is a neutral tool . . . it has no politics. It is simply a method of organizing information to help officials who bear the responsibility for allocation of public resources to make better decisions in accomplishing public objectives.²

As a minimum, program budgeting in the form of Planning-Programming-Budgeting should fill the expectations of both Hirsch and Anshen. However, the System does have the potential for altering the political system in that it tends to centralize decision-making. Wildavsky emphasizes that:

. . . economic rationality, however laudible in its own sphere, ought not to swallow up political rationality - but will do so, if political rationality continues to lack trained and adept defenders.³

The interest expressed by the Congress in developing its own capability to develop a program budget or to pre-audit the program budget proposed by the Executive branch is an interesting development when related to the two views in which Planning-Programming-Budgeting is currently held. The impact of the System on the relationship between, and its use as a management tool by, the Executive and Legislative branches, presents an area for further research.

¹Werner Z. Hirsch, "Toward Federal Program Budgeting," Public Administration Review, XXVI (December 1966), p. 269.

²Anshen, op. cit., p. 370.

³Aaron Wildavsky, "The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting," op. cit., p. 310.

APPENDIX A

U. S. Department of Agriculture Program Structure

Income and Abundance

Farm Income
Agricultural Production Capacity
Agricultural Marketing and Distribution System

Growing Nations - New Markets

Food for Freedom
Export Market Development
Agricultural Development
International Agricultural Services
Imports

Dimensions for Living

Diets and Nutrition
Health
Education and Training
Services for Living

Communities for Tomorrow

Community Development Service
Housing
Public Facility and Business Expansion
Resource Protection and Environmental Improvement
Recreation, Wildlife, and Natural Beauty

Resources in Action

Resources for Agricultural Production
Resources for Timber
Resources for Recreation, Wildlife, and Natural Beauty
Resources for Community Development
Resource Protection and Environmental Improvement

Science in Service of Man

Income and Abundance
Growing Nations - New Markets
Dimensions for Living
Communities of Tomorrow
Resources in Action

General Support

General Administration
Program Support

APPENDIX B

The Department of Health, Education and Welfare Program Structure

Education

- Development of Basic Skills and Attitudes
- Development of Vocational and Occupational Skills
- Development of Advanced Academic and Professional Skills
- Individual and Community Development
- General Research
- General Support

Health

- Development of Health Resources
- Prevention and Control of Health Problems
- Providing Health Care
- General Support

Vocational Rehabilitation

- Rehabilitation for Disabling Conditions
- General Rehabilitation

Social Services

- Improving the Social Functioning of Adults
- Improving the Social Functioning of the Child and Family
- Improving the Organization and Delivery of Social Services
- General Support

Income Maintenance

- Aged Assistance
- Disability Assistance
- Other Individual and Family Support
- General Support

International

- Bilateral Activities (State Department)
- Bilateral Activities (AID)
- Bilateral Activities (Other)
- Multilateral Activities
- General Support

APPENDIX C

UNITED STATES DEPARTMENT OF AGRICULTURE

Summary Program and Financial Plan

| PROGRAM CATEGORY Program Subcategory | FY 1967 Actual | FY 1968 Estimate | FY 1969 Budget Estimate |
|--------------------------------------------------------|-------------------|---------------------|-------------------------------|
| (Dollars in Millions) | | | |
| INCOME AND ABUNDANCE: | | | |
| Farm Income..... | 3,783 | 3,489 | 3,995 |
| Agricultural Production Capacity..... | 591 | 595 | 472 |
| Agricultural Marketing & Distribution System..... | 79 | 85 | 71 |
| Total, Income & Abundance..... | 4,453 | 4,169 | 4,538 |
| GROWING NATIONS--NEW MARKETS: | | | |
| Food for Freedom..... | 1,618 | 1,607 | 919 |
| Export Market Development..... | 20 | 45 | 22 |
| Agricultural Development..... | 3 | 6 | 10 |
| International Agricultural Services..... | 7 | 7 | 8 |
| Imports..... | 13 | 15 | 18 |
| Total, Growing Nations--New Markets..... | 1,662 | 1,680 | 976 |
| DIMENSIONS FOR LIVING: | | | |
| Diets and Nutrition..... | 823 | 925 | 1,009 |
| Health..... | 73 | 86 | 109 |
| Education and Training..... | 24 | 25 | 26 |
| Services for Living..... | 49 | 47 | 49 |
| Total, Dimensions for Living..... | 970 | 1,083 | 1,193 |
| COMMUNITIES OF TOMORROW: | | | |
| Community Development Services..... | 22 | 29 | 29 |
| Housing..... | 131 | 173 | 276 |
| Public Facility & Business Expansion..... | 561 | 521 | 513 |
| Resource Protection & Environmental Improvement.... | 220 | 239 | 156 |
| Recreation, Wildlife, and Natural Beauty..... | 53 | 60 | 65 |
| Resources for Timber..... | 302 | 306 | 263 |
| Total, Communities of Tomorrow..... | 1,290 | 1,327 | 1,302 |
| RESOURCES IN ACTION: ^{a/} | | | |
| Resources for Agricultural Production..... | [416] | [415] | [297] |
| Resources for Timber..... | [302] | [306] | [263] |
| Resources for Recreation, Wildlife & Natural Beauty | [53] | [60] | [65] |
| Resources for Community Development..... | [58] | [63] | [66] |
| Resource Protection & Environmental Improvement.... | [220] | [239] | [156] |
| Total, Resources in Action..... | [1,049] | [1,083] | [847] |
| SCIENCE IN SERVICE OF MAN: ^{a/} | | | |
| Income and Abundance..... | [178] | [181] | [176] |
| Growing Nations--New Markets..... | [7] | [11] | [15] |
| Dimensions for Living..... | [90] | [90] | [95] |
| Communities of Tomorrow..... | [24] | [27] | [29] |
| Resources in Action..... | [61] | [63] | [62] |
| Total, Science in Service of Man..... | [361] | [371] | [377] |
| GENERAL SUPPORT: | | | |
| General Administration..... | 4 | 5 | 5 |
| Program Support..... | 23 | 25 | 28 |
| Total, General Support..... | 27 | 30 | 32 |
| TOTAL, USDA PROGRAMS..... | | | |
| | 8,401 | 8,288 | 8,042 |
| Payment of Sales Inefficiencies..... | -- | +13 | -- |
| Total, USDA New Obligational Authority and Loan | | | |
| Authorization..... | 8,401 | 8,301 | 8,042 |
| Loan repayments deposited in General Fund of the.. | | | |
| Treasury..... | -180 | -192 | -190 |
| Applicable receipts from the public..... | -357 | -377 | -370 |
| Trust funds..... | +64 | +67 | +60 |
| TOTAL, USDA BUDGET AUTHORITY..... | 7,928 | 7,800 | 7,530 |

^{a/} The figures in these Categories are included for display purposes only, and are not included in Department totals. They represent a reclassification of certain programs included in the other Categories.

NOTE: Details may not add to totals due to rounding.

January 26, 1968

APPENDIX D

UNITED STATES DEPARTMENT OF AGRICULTURE

COST/OUTPUT DATA

| Program Category, Subcategory, and Element | Program Cost (in million \$) | | | Units | Outputs | | |
|---------------------------------------------------------------|------------------------------|------------------|------------------|---------------------------------------------------------------|----------------|------------------|------------------|
| | FY 1967 Actual | FY 1968 Estimate | FY 1969 Estimate | | FY 1967 Actual | FY 1968 Estimate | FY 1969 Estimate |
| I. INCOME AND ABUNDANCE | | | | | | | |
| I - A. Farm Income | \$ | \$ | \$ | | | | |
| Feed grain direct payments program (ASCS).... | 1,388 | 1,010 | 1,465 | Acreage diverted (Million acres)..... | 34.7 | 20.0 | 31.0 |
| Cotton direct payments program (ASCS)..... | 816 | 887 | 778 | Acreage diverted (Million acres)..... | 4.6 | 4.9 | 4.9 |
| Cropland adjustment program (ASCS)..... | 57 | 84 | 90 | Acres diverted, cumulative (Millions)... | 2.0 | 4.0 | 4.0 |
| Cropland conversion program (ASCS)..... | 2 | 4 | 3 | Acres converted (Thousands New agreement)..... | 19 | 135 | -- |
| Conservation reserve program (ASCS)..... | 143 | 126 | 112 | Acres diverted (Millions)..... | 13.3 | 11.0 | 9.2 |
| Wheat direct payments program (ASCS)..... | 708 | 752 | 770 | Domestic marketing certificates issued (Million bushels)..... | 496.0 | 533.0 | 533.0 |
| Commodity Credit Corporation inventory operations (ASCS)..... | 710 | 485 | 372 | Beginning inventory (Million \$)..... | \$ 3,103 | \$ 1,857 | \$ 974 |
| | | | | Acquisitions (Million \$)..... | 1,465 | 938 | 1,027 |
| | | | | Dispositions (Million \$)..... | -2,711 | -1,820 | - 995 |
| | | | | Ending inventory (Mil. \$)..... | 1,857 | 974 | 1,006 |
| Farm ownership loan program (FHA)..... | 12 | 12 | 13 | Number of loans..... | 13,987 | 11,450 | 15,500 |
| Soil and water loans to individuals (FHA)... | 1 | 1 | 1 | Loan level (Thousand \$)..... | \$260,000 | \$205,000 | \$280,000 |
| Farm operating loan program (FHA)..... | 20 | 20 | 18 | Number of loans..... | 833 | 1,350 | 1,200 |
| | | | | Loan level (Thousand \$)..... | \$3,619 | \$12,939 | \$3,000 |
| | | | | Number of loans..... | 64,899 | 57,000 | 51,800 |
| | | | | Loan level (Thousands \$)..... | \$300,314 | \$275,500 | \$250,000 |

APPENDIX E

U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
PROGRAM AND FINANCIAL PLAN

| Appropri- ation | Program | <u>233 Special</u> | | | | | |
|--------------------|----------------------------------------|--------------------|----------------|--------------|--------------|--------------|--------------|
| | | <u>1968</u> | <u>1969</u> | <u>1970</u> | <u>1971</u> | <u>1972</u> | <u>1973</u> |
| <u>Total</u> | | <u>\$229.2</u> | <u>\$307.6</u> | <u>\$456</u> | <u>\$623</u> | <u>\$804</u> | <u>\$972</u> |
| | Welfare Administration | 193.3 | 266.0 | 387 | 521 | 658 | 800 |
| 1569 | Maternal & Infant* | 35.0 | 54.0 | 68 | 91 | 91 | 91 |
| 1569 | Maternal & Child Health* | 50.0 | 55.0 | 79 | 103 | 103 | 103 |
| 1569 | School (Children & Youth) | 37.0 | 44.0 | 68 | 91 | 91 | 91 |
| 1569 | Crippled Children | 50.0 | 70.0 | 91 | 128 | 164 | 200 |
| 1569 | MCH Research | 5.9 | 13.0 | 15 | 18 | 24 | 30 |
| 1569 | MCH Training | 7.0 | 12.0 | 17 | 21 | 26 | 30 |
| 1569 | Dental | -0- | 2.0 | 20 | 38 | 38 | 38 |
| 1472 | U.S. Nationals | .4 | .4 | .4 | .4 | .5 | .5 |
| 0173 | Cuban | 4.6 | 5.8 | 7 | 8 | 9 | 10 |
| 1556 | Children's Bureau Salary & Expenses | 3.4 | 3.8 | 4.5 | 5 | 6 | 6 |
| 1471 | Family Planning | -0- | 6.0 | 17 | 17 | 17 | 17 |
| 1569 | (Family Planning*) | (5.5) | (16.0) | (20) | (24) | (28) | (32) |

* Figures for Family Planning are included in the Maternal and Infant and Maternal and Child Health programs.

APPENDIX E (Continued)

| <u>Appropriation</u> | <u>Program</u> | <u>1968</u> | <u>1969</u> | <u>1970</u> | <u>1971</u> | <u>1972</u> | <u>1973</u> |
|----------------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Leg. | <u>Comp. Services</u> | | | | | 89 | 183 |
| | <u>PHS</u> | 8.6 | 11.4 | 34 | 40 | 50 | 53 |
| 0312 | Dental | | | 8 | 10 | 14 | 17 |
| 0342 | Rural | .2 | 1.0 | 15 | 18 | 18 | 18 |
| 0342 | Migrant | 8.0 | 10.0 | 11 | 12 | 18 | 18 |
| 0390 | Menon. Indians | .3 | .3 | .4 | .4 | -0- | -0- |
| 0399 | Management | -0- | .1 | .1 | .1 | .1 | .1 |
| Leg. | <u>Parolees</u> | | .3 | .4 | .5 | .5 | .5 |
| 0279 | OE Title I | 27.4 | 29.9 | 35 | 37 | 58 | 72 |
| L-221 | Pre-School | | | | 25 | 38 | 47 |

- 109 -

(\$ millions)
Rev. 9/29/67

APPENDIX F

U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
PROGRAM AND FINANCIAL PLAN

233 SPECIAL GROUPS

Output Data

| <u>Program</u> | <u>1968</u> | <u>1969</u> | <u>1970</u> | <u>1971</u> | <u>1972</u> | <u>1973</u> |
|---------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| # U.S. Nationals Assisted | 108 | 114 | 118 | 124 | 130 | 136 |
| (FP) Maternal & Infant # of Patients Served (thousands) | 144 | 250 | 415 | 600 | 800 | 990 |
| Maternal & Child Health | | | | | | |
| # Well Child Conferences (millions) | 1.6 | 2.1 | 2.9 | 3.6 | 4.3 | 4.8 |
| # Public Health Nurses (millions) | 3.6 | 4.7 | 6.4 | 9.0 | 9.6 | 9.9 |
| # School Exams (millions) | 1.8 | 23.8 | 32.2 | 40.1 | 47.7 | 54.4 |

APPENDIX F (Continued)

| <u>Program</u> | <u>1968</u> | <u>1969</u> | <u>1970</u> | <u>1971</u> | <u>1972</u> | <u>1973</u> |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Crippled Children | | | | | | |
| # Projects | | 9 | 13 | 17 | 20 | 23 |
| # Served (thousands) | 475 | 495 | 780 | 962 | 1,145 | 1,300 |
| Cuban | | | | | | |
| # Patient Visits | 229,976 | 300,300 | 377,000 | 452,000 | 525,400 | 599,000 |
| MCH Projects | | 100 | 160 | 200 | 250 | 251 |
| Dental | | | | | | |
| # Children Served (thousands) | | 44 | 800 | 1,500 | 2,200 | 2,700 |

* # after 1971 are to be absorbed by community service projects.

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