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## THE NATIONAL REGIONAL RESEARCH PLANNING SYSTEM: AN EXAMPLE FROM RURAL DEVELOPMENT

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Public decision makers generally and especially those in the executive branch of the Federal government are demanding increasing amounts of information on which to base research policy and budget decisions. Zero-based budgeting provides a mechanism for revealing the priorities of an organization in a very specific context. The Congress in more general terms is requesting advice on research priorities. Such developments as (1) the proposed cuts in formula grant funds (e.g., Hatch funds) and increases in competitive grant funds contained in FY 1979 executive budget for the USDA, (2) substantial critical testimony before Congressional committees by spokesmen for groups who believe they are underserved by the Land-Grant system (e.g., low income and minority groups), and (3) a possible tax revolt growing out of the recent California referendum, suggest that these demands for information are likely to increase rather than decrease.

The purposes of this paper are to:

1) Outline briefly some of the activities now underway within the USDA-Land-Grant college complex to at least partially meet these demands for information, and 2) To discuss in some detail the national-regional research planning process using rural development in the Northeast as an example.

### BENEFIT-COST ANALYSIS OF RESEARCH

An Interim Research Evaluation Committee of the Experiment Station Committee on Policy (ESCOMP) has prepared *ex ante* evaluations of costs and benefits for and the internal rate of return for FY 1978 and FY 1979 budget requests for research on such commodities as corn, soybeans, wheat, beef-forages, dairy, swine, fruits, poultry and sheep.<sup>1</sup> They utilized Delphi techniques to obtain estimates on such variables as expected change in production and/or changes in production costs growing out of the priority research if successful, the probability of success, the rate of adoption, and the lag between research expenditures and the availability of results. They prepared estimates of the present value of the discounted flow of benefits and costs to provide benefit-cost ratios for the research on each commodity. Annual rates of return for research in livestock ranged from a low of 17 percent for beef-forage (cow-calf operations) to a high of 52 percent for hogs. For research in agronomic crops, the rates of return ranged from 31 percent for soybeans to 46 percent for wheat.

### TECHNOLOGY ASSESSMENT

The Agricultural Research Policy Advisory Committee (ARPAC) established an *ad hoc* committee on technology assessment. The Committee was requested to develop alternative plans for consideration by ARPAC for an assessment of the status and impacts of current and emerging science and technology with

consideration to (a) the nation's capabilities for sustaining increases in agricultural production and productivity, (b) the scope and significance of indirect benefits and costs, and (c) research and technology assessment needs and priorities based upon status of current technology and its adoption or potential adoption, state of progress in development of new technology, and national significance of anticipated direct and indirect effects in terms of productivity, stability, environmental quality, conservation of scarce resources, food prices, rural income and employment, and other major societal concerns. Since ARPAC was discontinued in January 1978, the Committee was reestablished by the joint council on food and agricultural sciences and requested to submit a project plan by the fall of 1978.

Currently, members of a study group who represent ESCS, ES, FR, and CR are putting together the project plan for approval by the Committee on Technology Assessment which will be submitted to the Joint Council.

### THE NATIONAL-REGIONAL RESEARCH PLANNING SYSTEM

The general issue of the responsiveness of the USDA-Land Grant system to societal needs and the specific issue of competitive vs formula grants are not new. You will recall James Hightower's "Hard Tomatoes-Hard Times" and the "Long Range Study", a study mandated by the Congress and jointly sponsored by the USDA and the National Association of State Universities and Land-Grant Colleges. The conclusions and recommendations of this study conducted by a team of six state agricultural experiment stations and six USDA representatives are contained in "A National Program of Research for Agriculture" published by the USDA, October 1966. This study grew out of an earlier attempt by the Secretary of Agriculture to increase competitive grants at the expense of formula grants.

Out of this long range study came a number of developments:

- 1) The development and adoption by SAES and USDA of a system of research classification;
- 2) Development and implementation of the Current Research Information System (CRIS); and
- 3) The evolution of a mechanism for national and regional agricultural research planning and coordination.

While the planning and coordination system is undergoing some changes as a result of the passage of the Food and Agricultural Act of 1977, it may be useful to describe the system as it existed prior to January of this year. Think of a hierarchy of committees made up of representatives of the National Association of State Universities and Land-Grant Colleges (SAES, Colleges of 1890 and Forestry Schools) on the one hand and on the other, representatives from the USDA (SEA-CR, SEA-FR, ESCS and FS). At the top of the hierarchy is the Agricultural Research Policy Advisory Committee (ARPAC) followed down the chart successively by the National Planning Committee (NPC), four regional planning committees for each of the four regions (RPC's) and by Regional Research Coordinating Committees (called Research Program Steering Com-

<sup>1</sup> Lee M. Day is Director, Northeast Regional Center for Rural Development.

<sup>2</sup> See A.A. Araj, J.D. Jansma, R.S. Mantby and B.R. Eddleman. This mimeograph is available in your experiment station office.

mittees in the Northeast). These Research Program Steering Committees are organized around the Research Classification System. There are about 40 Research Programs in the classification scheme at the National level. In the Northeast, Research Program Steering Committees have been developed for 10 of these Research Programs covering more than 80 percent of the total research effort in the Northeast. Two of these Steering Committees are of special concern to social scientists; Rural Development and Marketing and Competition.

The essence of the Research Program Steering Committees is that they are a joint operation of the Regional Association of Experiment Station Directors and the USDA. Thus, the Northeast Experiment Station Directors Association names a co-chairman and co-administrative advisor and the USDA (usually ESCS in the case of research programs that are largely social science in content) names a co-chairman and co-administrative advisor. These 4 people after consulting with other researchers and administrators, identify the committee membership. The membership is in most cases predominantly research scientists, although it is considered appropriate to solicit membership from industry, consumers and other interest groups.

The major purposes of the Research Program Steering Committee are to review the total research needs in its area of responsibility and to identify the kind of total regional program (SAES and USDA) to best meet those needs. Each Research Program Steering Committee is charged with a continuing responsibility not only for the development of a master research program including research needs and priorities within the region, but also to take an active part in the implementation of these research plans.

To briefly capsulize the entire National Regional Agricultural Research Planning System, it is a system in which planning decisions are made at each level based on information developed at the next lowest level. In the Northeast, the Research Program Steering Committees, composed largely of researchers, provide the basic technical judgements and data which are submitted as advice up through the system where they are interpreted, massaged and adjusted to reflect the perspectives and responsibilities of the higher levels of the hierarchy of committees. The outputs from the system include: (1) the development of a basis for the budget requests which are placed before the Congress each year and which ultimately influences the amount of funds available at each Agricultural Experiment Station around the Nation, and (2) an advisory system to each experiment station director when he faces the question of how to allocate the funds available to him among the departments, programs and projects in his institution.

The effect of the Food and Agricultural Act of 1977 on the precise nature of the research planning system is unclear at this moment. ARPAC, the top of the committee hierarchy, ceased to exist as of January 1978. Sec. 1407 of the Act provides for a Joint Council on Food and Agricultural Sciences. The responsibilities of the Joint Council include: (1) analyze and evaluate the economic, environmental, and social impacts of agricultural research, extension, and teaching programs conducted in the United States and determine high priority agricultural research areas, and submit annual reports identifying such high priority research areas to the Secretary, and (2) assist the Secretary in carrying out the responsibilities assigned to the Secretary under this title through planning and coordination efforts in the food and agricultural sciences that utilize an effective system of regional and national planning, and by the development of recommendations and reports describing current

and long-range needs, priorities, and goals in the food and agricultural sciences and means to achieve these goals.

Note that the responsibilities of the Joint Council with respect to research appear to be very much like the functions of the National-Regional Research Planning System. Note also that the Joint Council has responsibilities with respect to teaching and extension as well as research. Finally, as an interim measure the Joint Council has voted to continue the National Planning Committee. Thus it appears safe to assume that the National-Regional Research Planning effort will continue, although the committee structure to carry out the functions may change.

### THE PRIORITY RECOMMENDATIONS OF THE RURAL DEVELOPMENT STEERING COMMITTEE

The Rural Development Steering Committee was organized in 1977. It has (1) completed an identification and description of 30 research needs in 6 broad areas (economic development, housing, human resources, local government and finance, community services and land use); (2) assigned priority ratings to these research needs; (3) projected the SY's needs to make a significant impact on the 17 needs identified as having high and highest priority; and (4) prepared a preliminary draft of the report to be made to the Northeast Experiment Station Directors.

The Committee has refused to present a rank ordering of priorities in the belief that the art of determining priority recommendations is so unprecise that a rank ordering of research areas could be misleading. Consequently the committee aggregated its ratings into two groups, 10 areas of highest priority and 7 areas of high priority. The rest of this paper will present a brief description of 10 highest priority areas and a listing of the 7 high priority areas.

#### Highest Priority Areas

1. The construction and implementation of models to determine the effects and interrelationship of key factors in the economic development process of rural areas.

Previous attempts to identify the relationships between socio-economic factors (e.g., labor quantity and quality, energy cost and supply, public service availability, land and natural resources, market access and social institutions), and the level of economic activity have been ineffective in deriving useful generalizations. Sources of ineffectiveness include: simplistic measures of variables, incomplete models with complex measures of variables, limited samples, and use of levels of aggregation which obscure the effects of local characteristics.

2. The evaluation of federal, state and local policy instruments to affect economic activity at the community level.

The majority of policy instruments to attract industry used over the past twenty years have focused on input subsidy or infrastructure development. These are designed to lessen costs for new firms and, thereby, make location in a community more attractive. Debate over the effectiveness of these policies in promoting growth has raged for years. The problem is compounded because local areas must not only understand how to attract new industries, but also to retain existing ones. Retaining industries is a particular problem for some communities in the Northeast. Other communities, however, must be concerned about controlling the rate of growth. Much of the present understanding of these relationships is based on case study analysis. Successful completion of research in area 1 above would contribute greatly to the purposes of this priority area.



3. The development of better measures of the distribution of income and wealth.

To ultimately develop policies designed to enhance the income distribution or other indicators of well-being, accurate measures of the problem's magnitude are essential. Measures of current income which are frequently used do not adequately reflect the total wealth or asset position of rural residents. Assets other than current income constitute a significant portion of the current wealth position of older citizens and self-employed individuals. To the extent that these groups predominate in rural areas, measures of well-being based solely on income are inadequate.

The cost of developing these measures from primary data for the Northeast or the United States could be prohibitive. Hopefully, pilot studies will help provide a link between measures developed from primary data and those which would be developed from existing secondary sources and applied to the entire region or the entire country. The Committee suggests that the work of Weisbrod and Hansen provides considerable insight.<sup>2</sup>

4. The analysis of alternative methods of obtaining good health care and practices among individuals and groups.

Research in this area should be concerned with the impact of these services on productivity and well-being of people. It should address questions of organization and the impact of organizations on individuals. Information is needed on the cost-quantity-quality relationships of alternative health care delivery systems and the access to alternative systems by people in different spatial and income situations.

5. Interlocal cooperation in the provision of services.

Cooperation among local government units frequently provides methods of furnishing services which could not be furnished separately or, if so, only at significantly higher cost. Research is needed on the extent of inter-local cooperation, the types of services on which local governments are cooperating, the legal arrangements under which they cooperate, the possible ways of facilitating this type of cooperation, and the effects that these agreements might have upon both service quality and local government structure and functioning. Particular attention should be given to new organizational and/or technological innovations.

6. Studies of the economics of supply of local government services.

The technology of service delivery combined with either the decline or growth of rural communities, is raising serious questions about the most appropriate organization of service delivery systems. A number of prescriptions are available. Some promote specialization, on efficiency grounds; others promote integration of services also on efficiency grounds; still others propose regionalization or consolidation as a means of improving service delivery systems. There is a considerable lack of information about these and other alternative prescriptions. The types of research needed include the delineation of alternative organizational arrangements with special emphasis on organizational innovations, such as interlocal cooperation and performance contracting, the estimation of cost-quantity-quality relationships, benefit cost or cost effectiveness analysis, and studies of the distribution of costs and benefits.<sup>2</sup>

7. Research to help local governments anticipate changes in population.

Recent changes in migration patterns are causing increased population in many rural areas. Local governments need help in anticipating the impacts of increased population, and the implications of this population growth for changes in demand for public services thus needs investigation. Because many of these governments have had little experience with anything but population decline for many years, they may be unprepared for changes in local policy which may now become necessary. Research which would help illuminate this issue would be valuable.

8. Utilities including solid waste, sewerage, drainage and water supply.

Types of research include the identification and analysis of alternative organizational arrangements (including estimation of cost, quantity-quality relationships, cost benefit or cost effectiveness analysis and studies of the distribution of costs and benefits) and methodological studies of needs assessment.

9. The impact of demographic and socio-economic changes on land use.

It is hypothesized that significant demographic and related socio-economic changes will occur in the Northeast. It appears that the migration to the non-metropolitan areas will continue. This is especially true for the northern New England states of Maine, New Hampshire and Vermont. The continued migration and other factors such as the expected increase in energy prices raise a number of questions such as: what will be the effect on the use of land; will the new landowners utilize their land in more "consumptive" or productive uses; will the in-migration have a positive or negative impact on agri-business; are the institutional arrangements adequate to guide land use; should institutional arrangements be instituted to protect land resources which are identified as prime agricultural land?

10. Research in support of land use planning including critical areas and natural hazards.

The current regional project (NE-90) has explored a number of control mechanisms, but basic to all these mechanisms, is the concept of land use planning. Frequently land use planning decisions are made without adequate data and analysis in support of the planning efforts. Criteria for land use decisions should be established. What will be the effect of alternative plans on land use; what will be the economic impact, for example, of a zoning ordinance; what effect will alternative planning decisions have on the price of different kinds of land; will the planning decision cause a premature disinvestment in the agricultural sector; will there be an impact on the structure of land tenure; what will be the impact of alternative plans on the structure of economic activity? Answers to these kinds of questions will provide useful background for planning efforts whether the planning effort deals with coastal development, wetlands or lands in agricultural areas.

### High Priority Needs

The Rural Development Steering Committee also identified 7 high priority needs. They are:

1. The development and application of efficient techniques for evaluating the distribution of costs and benefits of rural economic development for people, communities and governmental units.

<sup>2</sup> For a more complete description of needed research, see Priorities in Community Services Research for the Northeast, pages 11-21, and Committee Print, U.S. Senate, pages 125-193, 207-355.

2. Identification, categorization, analysis and evaluation of the impact of state and federal and other housing policies on magnitude and distribution of adequate housing in rural communities and regions.

3. Improved understanding of the relationships between educational systems and human resources.

4. Studies regarding the allocation of local government responsibilities and resources.

5. Research on costs and benefits of capacity building of local governments.

6. Evaluative research on the impact of federal aid programs.

7. Transportation including public transportation for people.

These are the recommendations of priority needs by a committee of your colleagues<sup>3</sup>. A different set of people might de-

<sup>3</sup> R. Bird, R. Coltrane, D. Colyer, M. Cotner, E. W. Coward, L. M. Day, K. Deavers, J. Delphendahl, D. Derr, G. Donovan, M. Feld, I. Fellows, F. Goode, T. Hady, E. F. Jansen, J. W. Malone, B. Mason, R. P. Prince, N. Reid, L. Schertz, R. Sinclair, and J. M. Stam.

scribe these needs somewhat differently and/or place different emphasis on some of the identified needs. Yet it is hoped that efforts such as this will be helpful to researchers, administrators and public bodies that support our research efforts.

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