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# **Evaluation of Agricultural Research**

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## EVALUATION INFORMATION ON AGRICULTURAL RESEARCH

Molly Frantz\*

As one of your lead-off speakers, my task is to give you one user's perspective on the need for evaluation information in making decisions affecting agriculture research and development. This is not to imply that agricultural research and development policy decisions are made in isolation. Far from it; these decisions are made in the context of overall agricultural policy objectives. With that said, let me tell you the points my brief remarks will cover. I hope to give you first, a feel for:

1. The OMB perspective with respect to its role in the federal decision-making process. I will try to give you a feel for the organization, the way in which it works, and OMB's purpose.

2. The context in which OMB uses evaluation information.

3. My assessment of the current evaluation information efforts with respect to agricultural research.

### The OMB Perspective

#### Organization

OMB is a major player in the development and implementation of broad presidential policies. OMB's role is principally to coordinate the interests of the concerned agencies and to see that any proposals are consistent with either past administration positions or new administration policies or both. On occasion, OMB proposes alternative courses of action.

Like other executive offices of the president (EOP), OMB functions as staff to the president. But unlike these other EOP offices, OMB is predominately staffed with career civil servants. As a result, OMB is relatively unencumbered in its role because of this degree of isolation from constituency interests. Consequently, we do not perform an advocacy function, although we often are thrust into an adversarial role.

\*Office of Management and Budget, Washington, D.C. The opinions expressed here are those of the author and not the Office of Management and Budget.

#### Means

OMB is near the apex of the executive branch's decision-making pyramid. As such, OMB has access to virtually all of the decisionmaking "levers" within the federal government. These levers, or functions, are: the formulation of the budget request to Congress, the clearance of legislation, the clearance of major reports which have policy implications, the oversight of regulations, the clearance of data-gathering instruments (forms clearance), and the review of agency fiscal and management operations. With the exception of the last two items, forms clearance and operations, all of the other functions involve the preparation of policy documents.

#### Purpose

OMB analysis has one overriding purpose--to determine what the federal role in "X" should be. This fundamental purpose can be broken down into three key questions:

Is there a reason for federal involvement?

How extensive should that involvement be?

What form should that involvement take?

A highly simplified example applying these questions is illustrated by the decision to initiate a competitive basic plant research grant program in USDA.

Is there sufficient justification for federal participation in plant research?

How direct or indirect should the federal support be, vis-a-vis the states and the private sector? Also, should that support be directed at all aspects of plant research or just at particular aspects; i.e., just at basic research on nitrogen fixation? What would be the best means for ensuring that the objectives of the federal program are met; for example, should the funds be targeted to all the qualified researchers or just a segment of those researchers?

### The Context in Which OMB Uses Evaluation Information

OMB has two principal evaluation focuses for every program: (1) How effectively does the program meet its immediate objectives? (2) How

well (both effectively and efficiently) does the program contribute to achieving broad policy goals? This assumes the acceptability of an underlying rationale for federal involvement in the identified problem area and the problem's sufficient priority relative to all the other problem areas.

The typical questions regarding the first focus, the effectiveness of agricultural research, would be:

How effectively are the formula funds distributed with respect to "priority" research goals?

What should be the proper balance between intramural research and extramural research?

The products of your work apply more often to the second focus, the contribution of agricultural research to broad agricultural policy objectives. Questions of interest here might be:

What are the opportunity costs involved in emphasizing agricultural research over some other form of assistance, such as dissemination of information, financial incentives or regulations?

How obtainable is the objective through research, vis-a-vis some other mechanism?

OMB looks for variety of criteria to measure program outputs. They all can be articulated in terms of efficiencies, but not necessarily in terms of dollars and cents. Said another way, research (including agricultural research) is assessed on the basis of its economic and social consequences.

#### Assessment of Current Evaluation Information Efforts

Within the context of the preceding remarks, I would now like to deal with the two questions posed to me by Dr. Fishel:

Are the current evaluations of agricultural research of any use?

What kind of information is needed to make better allocation decisions?

To be honest, I have not found very much of the current evaluation data influential in making decisions to allocate resources to and within agricultural research, at least at the OMB level. This is mainly for two reasons. First, I generally rely on the Department of Agriculture's ranking of research activities as a more broadly based reflection of national research priority needs. Second, the bulk of the available evaluations do not address the diversity of non-economic criteria used at OMB in making resource allocation decisions.

The evaluations I see tend to be of a singular focus, generally economic in nature and primarily dealing with "rate of return" data. It is impressive to know that the average rate of return on all of agricultural research expenditures is estimated to be between 25 and 55% for every dollar spent. But what does this mean in terms

of meeting specific national objectives? The objectives or decision criteria OMB uses deal with the contribution of agricultural research in meeting such national objectives as creating a positive balance-of-trade position, improving the quality of the environment, adding to the general health and safety of the population, and enhancing the general quality of life of the population.

The current agricultural research evaluation efforts provide only a myopic view of a program's accomplishments. When one restricts himself or herself to such a narrow evaluation base, that person runs the risk of saying nothing or very little about the fundamental questions of need and the appropriate federal role. It is clear that the role of the federal government is not to turn a "profit" -- we have the private sector for that. Just think what the lost opportunity costs would be, both in economic and social terms, if we were to fund only those programs with high rates of return? Would defense spending fare as well? What about medicare and medicaid spending? Has agricultural research nothing else going for it except its "rate of return"? I do not think so, but evidently the research community does.

My widget analogy states that just because great widgets can be produced economically does not mean that tax dollars should automatically be used to support that effort. There has to be a need for those widgets.

#### Conclusion

Let me conclude my remarks by saying that I am encouraged by some of the evaluation work being undertaken right now. There is attention being given to more broadly defining the effectiveness of agricultural research--and extension I might add--as well as to the contribution that research makes to achieving national priorities. However, attention also needs to be focused on the trade-offs between various means of addressing a national problem, i.e., research versus the dissemination of information versus financial incentives, etc.

Everything I have been discussing in the preceding speaks to the long and short-range planning of agricultural research. You are all aware of the significant and legitimate questions that have been raised about the way the agricultural research community prioritizes its activities. What should or can be done to change this process? Evaluation information is the key to that question and to your concern about how resources will be allocated in the future. The golden days of the sixties and the early seventies are gone. Unfunded, economically defensible research opportunities are and will continue to be more prevalent unless the agricultural research community directly addresses the concerns of policymakers.

I do not need to tell you that research, as a program area, is particularly vulnerable to budget constraints because of its long-term nature. The burden of proof is on the agricultural research community to demonstrate why a long-term investment of federal dollars is more desirable than the benefits of short-term program expenditures.