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BALANCING NATIONAL AND REGIONAL OBJECTIVES: THE SHIFTING INFORMATION REQUIREMENTS

By

Helen M. Ingram and David J. Allee

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Department of Agricultural Economics
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York 14853

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Introduction

There is a common article of faith among agency officials and academic scholars who invest time and effort in the development and implementation of multiple objective planning. They believe that the quality of best possible policy making increases in direct proportion to available policy knowledge.(6) Policy knowledge is a function of the information supplied to decision makers. The impetus for the multiple objective planning has been the desire to generate and transmit better information to the makers of water policy.

The purpose of multiple objective planning is not just to produce data, but to supply policy relevant information. Every year tons of data proposing to be "information" or "evaluation" are collected by and for government agencies. Much of it is literally of no use to anyone because there is no connection between what is collected and what participants in public decisions need to know. Data are often gathered simply because they are collectable and quantifiable. To be useful there should be a firm theoretical relationship between the information presented and the decision to which that data is relevant. Too much data is gathered without a firm theory of impact, but with only a vague belief that they may show something interesting or somehow come in handy.

The result of a general collect everything strategy is lengthy volumes of dense material which are never read from cover to cover even by contributing authors. Framework plans fill entire library shelves. Presenting every possible data bit has reached some kind of zenith in environmental impact statements. State agency officials asked to review

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2/ Professor of Political Science and Director of the Institute of Government Research, University of Arizona, Tucson, Arizona.

3/ Professor of Resource Economics, SUNY College of Agriculture and Life Sciences, Cornell University, Ithaca, New York.

EIS's complain that the personnel of whole agencies could be devoted to the reading chore alone. In a recent lecture given by Aaron Wildavsky at the University of Arizona ten rules for coping with information systems were stated. One was "beware of complexity." If information is hard for us to understand, why think it will be useful to someone else? His "rule of thumb" about data sets was to throw out any thicker than one thumb.

If multiple objective planning is to improve policy knowledge it must be sensitive to the shifting information requirements of decision makers. Nowhere have information requirements changed more in water resources than in the area of regional impacts. While prior to the Water Resources Council's Principles and Standards national efficiency was the only formal, stated criteria, many agency spokesmen who presented papers at the Las Vegas meeting stated that regional development among others had always been a factor in planning. For the most part it could be considered informally in the political process of local groups pushing and achieving consent for projects to benefit their region. Today, the old consent building process based on local impetus is in disarray. Old truths such as "water development is a key to regional wealth" and "growth is good" no longer ring true. Regional objectives today are very much more complex. What once seemed clear to decision makers now is questionable and thus it is subject to formal evaluation. Resource planners need to supply through formal analytics policy relevant information. This paper intends to address some of the changing information requirements related to the regional development objective.

In the assigned topic the word "balancing" suggests a process of accommodation, or trading off between values held by different participants, some with a national point of view, others with a regional one. We do not dwell on this complex aspect of decision making processes, but have addressed it in some detail elsewhere (9,3). Here our object is to explore some of the uniquely regional information requirements of the process. First we consider how regional objectives may be changing. Then we examine in some detail the shifting capacity of states to represent regional points of view. Finally, the potential role of the river basin as a regional arena for consent building is examined.

Changing Regional Development Objectives

Increasingly water resources planners are having to address the issue of the efficiency of water as a generator of development. Traditionally water projects have been accepted currency through which a region could be paid its fair share of the national subsidies pot. Dean Mann observed:

> That the West has historically relied on water projects to balance the equities in the political system that has seen tariffs provided for industry, price supports for midwestern and southern agriculture and public projects and welfare programs for urban interests seems beyond question. (14)

To an extent, the water programs of different federal agencies were aimed at servicing different regional clientele. While the Bureau of Reclamation

delivered irrigation projects to the West, the Corps built flood control projects everywhere in the South, the Midwest and the East, and the Soil Conservation Service concentrated on upstream small watershed projects in rural areas everywhere but particularly in the Midwest and South.

In the past, regions have welcomed whatever form of water development came their way as federal largesse of obvious worth. The West has long been in the grips of what Maurice Kelso calls the "Water mythology." (11) Water on the desert transforms a dry and desolate country into a blooming oasis. Further, water has a midas touch; its development through construction projects produces jobs and helps business, and projects in operation are a permanent stimulus to commerce. Conventional wisdom about flood control projects is very similar. The security provided by a dam or a levee allows a marginal community to plan and to prosper.

In recent years there have been growing doubts about the ability of water resources development to produce such transformations. The National Water Commission found that the conditions which once permitted water projects to stimulate growth -- unemployed manpower and undeveloped lands and other natural resources -- now exist in few parts of the country. Water development unquestionably spearheaded growth in the Tennessee Valley and the Salt River Valley in Arizona, for example. But it is unlikely to foster such economic prosperity anywhere in the future. (15).

In the case of the Central Arizona Project, the anticipated economic benefits which gave impetus to authorization are now a matter of debate. The argument was made in the 1960's that the heart of the state of Arizona could no longer grow or, in fact, remain economically alive, without the rescue of outside surface water.(12) In a recent study of water supplies and economic growth in Arizona, Kelso, Martin and Mack conclude:

> Water supplies in the state are adequate to continuous growth of the state's economy. What are needed are policy actions to facilitate changing structure of the state's economy and the transferability of water among uses and locations of use. Currently, the water problem is a management, an institutional, a policy problem -- a problem of demands for water more than one of supplies -- a problem of man-made rather than nature-made restraints. (12)

On the basis of Kelso, Martin and Mack it is possible to argue that the CAP will have a retarding rather than a stimulating effect. It will slow changes in Arizona's economic structure which seem inevitable while at the same time provide an excuse for not making ground water reforms.

In the future, water resources planners can expect to have to address the more general and complex questions raised by the Arizona case. It is no longer viable to concentrate on simple and specific effects of income and employment. What are the impacts of water development upon economic structure of different regions including developed, underdeveloped, depressed, etc.?

In one of the studies carried out for the Commission,(13) it was pointed out that impact depends upon the demand for water as well as its supply. And while the number of pertinent empirical studies was pitifully small (four) and limited by deficiencies in data and concept, some generalizations could be made. Most pertinent was the conclusion that the same project could have some effect on the regional economy in one case and none in another. The specification of how an analyst can tell which case is which is clearly researchable. The results probably will produce even more questioning of traditional water projects. Analysis of inter-industry relationships and value added per unit of water used have long pointed to a radically different allocation of water between users than that of most projects. Irrigation has shown the least impact with recreation and industrial use showing more, while the allocation has been the reverse. This may continue to be accepted public policy, but it will have to be formally justified.

At the large regional system level the techniques of the regional scientist may help explain and predict some growth effects. But the level of precision achieved with such tools has been low in the past. The tools of the economist are limited in dealing with behavior at the local level. First there is the question of jointness between social overhead components. Water development is a small part of the whole of schools, hospitals, highways and all the rest, and if water is provided will the rest materialize?

The Appalachian regional water plan attempted to address this question in a few of the projects it proposed. At very least, a conclusion to be drawn from that effort is that such analysis could greatly expand the local assurances that would have to accompany a project proposal.

Second, tools of the economies are limited in looking at impacts of particular projects because growth is a matter of perception. Will a project change the expectations for the community in which it is to be placed? Some regional development analysis would suggest that it is not so much the existence of social overhead capacity that leads to growth as it is the expectation on the part of private actors that when they need the public service it will be there.(1) The capacity to act (ie., to really plan) becomes more important than the act. Thus a project can be the symbol of a change in the capacity of the community to act.

In some cases the growth generating capacity of a water project depends upon how the political and social system changes in the process of building consent for the project. Some sociologists argue that for the community to grow to the potential which the larger community can provide for it, it must increase its capacity to interact with the larger system. This greater differentiation can be achieved by increasing the numbers and changing the mix of those who participate. Consent building on water projects provides one policy arena where such changes can take place.(7)

Beyond the question of the efficiency of water as a development tool, important interests in various regions are becoming sceptical about the efficacy of development itself. Development usually means concentrated population growth with all the accompanying problems of air, noise, and visual pollution. More people mean a need for more community services, water, sewer, police, fire, schools, and hospitals. The membership of environmental organizations, especially grass-roots groups, has greatly increased. Doubts about growth, however, extend beyond environmentalists. In numerous referendums across the country where growth has been an issue, communities have taken a stand in favor of stable populations. Decision makers, who must be concerned with popular support, will expect water resources planners to spell out the adverse environmental and social impacts upon regions which accompany development as thoroughly as the economic benefits.

In the future, Water Resources planners must provide information on who benefits and who pays for regional development. Whether the nation should foot the bill for regional development has long been doubted by some resource economists and most officials of the Office of Management and Budget. The negative case seems especially compelling when regional developments are in fact interregional transfers. It has been argued that southern agriculture has paid a price for western irrigation development. It can be persuasively argued, on the other hand, that where a region is depressed, the whole nation profits by its economic improvement, consequently there is some rationale in national investment. The National Water Commission recommended strongly that the beneficiaries of water development be more directly assigned the cost.(15) It may be that national policy makers will expect water resources planners to present alternatives whereby regions can financially support their own development.

Decision makers are increasingly asking not just what will happen in the project area but also what will happen elsewhere. Who will be benefited or hurt at the expense of, or to the advantage of, someone in another region? The Governor of Pennsylvania, for example, voiced strong objections when the Corps of Engineers proposed "Mike's Ditch." Congressman Kerwin, Chairman of the Public Works Committee, had long sought a connection for the Ohio River to the Great Lakes, which probably would have hurt the port of Erie, Pennsylvania. Projects which help one region at cost to another no longer get by, with the idea that the damaged region will get its fair share in another project later.

The history of the Economic Development Administration is instructive (4). This program and its predecessor, Area Redevelopment Administration, offered federal assistance at the most local level quite well balanced over the nation. Nonetheless, constraints to limit interregional raiding of jobs had to be built into the legislation.

The demand for more water for energy development has raised many questions related to regional impacts and who pays in all parts of the country. In the Susquehanna the next several electric power plants will evaporate enough cooler water to endanger the sustainable low flow into the Chesapeake Bay. The resulting effects on salinity and the productivity of the Bay, as well as the river itself, will look like exporting power and importing pollution to many participants.

Current interest in coal development in sparsely populated regions of the North Central and Southwest regions has prompted some in those regions to take a hard look at the balance of costs and benefits for development to be worthwhile. The environmental and social costs of such things as strip mining and oil shale development would have to be balanced by considerable economic benefit. However, economic studies made of the regions indicate the energy investments made immediately flows outside the regions to pay for goods and services not provided or manufactured there. Even the jobs created seem to go to highly skilled migrants into the region.

Some residents of the Southwest and North Central region fear the real beneficiaries of energy development in these areas will be people who now live outside their boundaries. They see themselves in the role of resource colonies, and to them regional development threatens to become regional exploitation. Much of the energy development the residents of these areas are concerned about involves the development and use of water. Water resources planners should anticipate information needs by developing input-output models of regions which indicate where development monies go and who benefits.

The equity of repayment allocations among beneficiaries is a matter of growing importance. There was a time when water resources projects could command fairly unified public support from the project area. Various interests among those affected believed that they were bound to reap benefits greater than costs. Further, each interest was reluctant to bring up decisive questions for fear that disagreement would damage the project's chances of authorization and funding. Today, groups are closely examining their repayment contributions in relation to those of other groups and will expect the relevant information from water resources planners.

The equity of repayment has become a major issue in negotiating contracts for the Central Arizona Project. Many officials in the City of Tucson believe municipal users pay far too much in relation to agricultural interests which are slated to get the lion's share of the water. The city position has been that it is not worthwhile to contract for CAP water unless groundwater reform which would force more efficient use upon agriculture is also included in the package. The Bureau of Reclamation, the State Water Resources Commission and the City of Tucson have had to supply more detailed calculations than were ever expected when the project was authorized in 1968.

Who is to pay for what is also a part of the New York City water supply problem? Suburban communities are more likely to grow in the future, but the city has pre-empted most of the desirable supplies and shares them most grudgingly. More disruption of upstate areas is seen as less than fully equitable, whatever the compensation payments, unless New York City invests in water conservation -- fixes leaks and installs waters -- and agrees to allow an aggressive and reasonably priced regional supplier to operate. The Corps of Engineers in its Northeast Water Supply Study, a Temporary State Commission and the State's Department of Environmental Conservation plus all the local governments involved are sparring to come to a solution.

To sum up, two implications suggest themselves from asking about the significance of regional objectives. First, the evaluation of regional effects will require fairly sophisticated analytics of regional and interregional economic systems. The Water Resources Council through the Bureau of Economic Analysis (and the Economic Research Service) are working to correct this. But questions, such as those above, go well beyond the models currently under development. Not the least of the problem is the need to relate to other planning and the public decision making process itself to give the analytics political validity (a painful step for most academically oriented analysts).

The need for a political arena which will reflect the region as a political entity is as great or greater than the need for improved analytics. The problem is not only to know what the effects will be, but also to find a way to discover and ratify what they should be. Just as national efficiency analysis has something to say about what "should" be, so MOP analytics can go part of the way. But just as in the national efficiency objective, regional objectives need to be expressed in an arena that will give them a role in the consent process. Who is to speak for the regional point of view? Can the river basin be the organizational focus for an effective regional institution? The history of basin institutions is not bright but the need is clearer than it ever was. The changing role of the states may be a significant factor in this issue.

Changing Regional Development Participants

Not only must water resources planners serve different interests and objectives in relation to regional development, it must now serve a different set of participants. Water development has historically been a federal concern. Big projects were built by federal agencies, and most regional and river basin planning was done by federal agency planners. In the past, states have been poor cousins in joint federal-state studies. They lacked the organizational capacity in terms of funds, personnel and expertise to offset the sophisticated teams federal agencies could send to the field. Regional organizations including interagency coordinating committees and river basin commissions have operated with a particular bias towards federal interests. Little more than a decade ago, in 1964, the Executive Secretary of the upper Colorado River Basin Commission stated:

> Many states have poor organizations for long range planning and their water resources agencies lack financial support. Some states even appear to lack the proper agencies that can, do their share in the overall planning job. In many instances, initiative in planning rests with federal agencies. State and local government are often in a position of having to approve or disapprove plans without having made adequate studies needed in the field of water resources.(8)

Since the passage of the Water Resources Planning Act, the capability of states has improved substantially. According to figures obtained in a study for the Water Resources Council, in 1965, total state funds

spent on water and related land use planning amounted to $11,953,432.(10) In fiscal year 1973, state agencies designated under Title III of the Planning Act declared expenditures of $30,266,380. The difference, $18,312,925, represents a 150% increase. Table I indicates the growth in numbers of professional staff in designated state agencies, 1965-1973. Some caution must be exercised in interpreting these data because of reorganizations and different reporting systems. Nevertheless, the trend is clear.

The enlarged state capability combined with growing doubts about the benefits of federal water development have caused states to assert themselves into what was once a federal planning process. A Regional Director of the Bureau of Reclamation reported that in the 1970's states were setting the priorities among projects to be authorized and constructed within their borders. Increasingly, the Bureau is cast in a responsive role, developing an information base to cope with questions posed by state actors.(2)

It should be noted that the growing influence of states does not necessarily complement a regional perspective. States have often taken a parochial point of view about matters of water supply and water pollution. At the same time, the experience with regional and interstate organizations indicates that the most viable are based upon full participation of states and localities.(5) Certainly today it is doubtful if a regional agency could accomplish much without the participation of states. The New England River Basin Commission and the Pacific Northwest River Basin Commission have led a general movement of Title II commissions toward greater attention toward the needs of states. Many of the compact commissions such as the Delaware and Susquehanna have long provided the states with a formal decision point to enter the consent process. If the regional objectives in water resource planning are to have reality to current decision makers, they must be cast in state terms. Through information provided by planners, states must come to see their common regional stake in water resources.

Region -- Where Local, State and Federal Interests Meet?

The multi-state region -- a basin or a group of basins -- has long been an obvious unit of analysis in water resource planning -- but what about its potential as a management and administrative unit? The arrangements called for in the Water Resources Planning Act of 1965 (especially the Title II commissions and the Title III grant funds), more recently the Susquehanna Compact, the Water Quality Agreement with Canada and the new look of the International Joint Commission are just some examples of a long line of actions that test the potential of the basin. In general those close to the process by which projects are approved and funded find it difficult to see where basin arrangements make much difference.(3) But changes in the project consent building process may suggest that basin arrangements should be given -- indeed may take -- a more significant role.

Whatever the outcome with respect to the formal form of multiple objective evaluation finally ratified by the Congress and the President

Table I

Total Numbers of Professional Staff in Designated State Water Planning Agencies, 1965-1973 and Percentage Increases a/

	1965	1966	1967	1968	1969	1970	1971	1972	1973
Total Number of Staff	206	226	699	516	610	569	627	732	1033
% Increase over previous year		12.4	209.2	-26.1	18.3	6.8	10.2	16.8	41.1
Increase % 1973 over 1965							Total		357.2

a/ Source: Response to Survey Questions, n = 46.

For more extended data, see Ingram, Bradley and Ingersoll. An Evaluation of Title III Water Resources Grants to States, Water Resources Council, 1973.

several elements are clear. Some important parts of the proposed Water Resources Council EQ, RD and SWB accounts will have to be made a formal part of the evaluation and plan formulation process.

The point is that project-by-project benefit-cost analysis has major weaknesses from both a political and technical level that could be corrected somewhat through the participation of an analytical group at the regional level. When analysis is done, project-by-project, there are many things that seem to suffer. The cumulative effects of a series of projects is harder to establish and usually ignored. Even reaping the technical advantages of hydrologically linking projects becomes difficult -- especially between projects of different agencies. But evaluation of environmental, social and economic system effects is even more difficult. Finally, there is a tendency for "ad hocery," ie., consideration of cost and output effects, beyond the most basic, only when it is to the advantage of the moment. But perhaps of greatest concern is the interaction between the technical and political aspects of system evaluation.

Individual water agencies simply are hard pressed to develop the expertise to perform creditable environmental and social analysis and even analysis of the indirect economic effects. Part of the problem is that they do not have the perspective to see the inter-relations between water projects and other public actions or even between water projects themselves. Part of the problem is that with the increased potential for conflict in water projects it is rational to start more planning studies and put less into each; yet evaluation of environmental, social and regional systems is most demanding of analytical capacity, calling for more resources, not less. Part of the problem is that we have not yet developed highly accepted measurement and evaluation methodology to show good cause and effect between projects and all the called for aspects of environmental, social and regional development systems, at least not comparable to methodology which is used in the engineering and national economic evaluation.

The result is that the agency -- seen as an advocate for its proposal -- suffers from general suspicion of its analytics. A basin agency with capacity to evaluate projects at the system level could at least critique and finally bless the analytics of the agencies. But if the scale economies of system analysis in environmental, social and regional development are as great as they seem at this time, it may be advantageous for the basin agency to actually do much of that part of the project analysis and provide formulation guidelines for project plans.

Also seeing a single national program broken into region components has some potential for increasing program effectiveness. It is commonplace to point out that broad national budget components are relatively fixed from year to year. Yet there is a tendency to treat individual projects as if they posed no opportunity cost in the budget. Perhaps regionalization of programs would suggest that sizing a project at $16 million where an $8 million solution was almost as good a problem solution was doing the region out of a second project.

Those who see a stake in individual projects -- whether negative or positive -- often behave with little apparent sense of responsibility for the whole systems involved. Bit by bit, more system understanding may enter our debates if we indeed can find ways to link the bargaining arena more closely to the limits of the systems involved. Improving interest access, bargaining capacity, availability of multiple purpose projects that take full advantage of the full array of means and addresses a wider range of objectives should lead to more effective collective solutions to our problems. At very least, an agency that can look at the total effect of the individual projects proposed should lead to better decisions.

Thus, one of the questions to be raised in considering planning objectives and cost sharing, at least, is "who is to do what?" Plans with an emphasis on whatever shakes out of the EQ, RD and SWB accounts may be able to employ a basin role to enhance effectiveness in consent building. Cost sharing that gives a basin orientation to implementing national EQ, RD and SWB objectives may be a way out of the dilemma of direct project funding for these, perhaps encouraging more systematic evaluation and verification of the quid pro quo for the federal dollars involved.

To sum up, the challenge is to provide principles that will lead to procedures for matching evaluation to the systems involved reflecting the weakness of benefit-cost analysis at the project level. There probably are economies in dealing with the extra local effects of projects in a unit separate from the several agencies; there may also be some advantages in achieving systematic evaluation. The monitoring and assessment function of some basin groups gives them a start on the process. "Independent" review groups need a political base somewhere and the governors are one place to turn -- the states should be pressed for more political accountability in the water field. Linking some cost sharing to the evaluation of extra local effects of the projects seems to make sense if a regional point of view is in fact to be well represented in project formulation.

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