POLICY RELEVANT ASSESSMENT
OF COASTAL ZONE MANAGEMENT
PROGRAMS

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Abstract

The central purpose of policy-relevant evaluation is to provide information that is directly relevant to decisions about the development, alteration or termination of coastal zone management programs. Because of the number of potential clients for such information and the variety of decisions that have to be made, no single evaluative approach is likely to be appropriate for all situations. Five general approaches are outlined: program logic, compliance, process, goal achievement and impact assessment. The choice of a particular approach depends primarily on the issues faced by policy-makers.

The design and conduct of evaluative studies of coastal zone managements poses special problems. These problems require special attention, but they are not insurmountable.

1. Introduction

After several years of planning and program development, most states are implementing their coastal zone management programs.[1] For both the advocates and opponents of CZM this implementation phase means that it will no longer be necessary to talk about imagined triumphs and disasters occurring as a consequence of statewide coastal resource management programs. The effect of program implementation on such things as preservation of open space, the cost of coastal housing, shoreline access or employment in the construction industry will, in theory, at least, be there to identify, measure and evaluate.

Several studies of the implementation of various coastal zone management programs have already been conducted.[2] These studies vary with regard to their purposes, approaches, methods and assumptions. Some of the studies are explicitly

evaluative in the sense of making statements about the worth or value of various programs.[3] Others seek to highlight problems in the implementation of CZM programs or to add to the general theoretical literature related to policy implementation.[4]

The purpose of this article is to identify a set of "policy-relevant" approaches to the evaluation of CZM programs.[5] The central purpose of "policy-relevant" evaluative research is to provide information that is directly relevant to making decisions about the development, alteration or termination of coastal zone management programs. Describing some evaluation activities as "policy-relevant" or "decision-oriented" indicates a major research purpose, but it does not otherwise delimit the possible research approaches or methods.

2. Attributes of Policy Relevant Evaluation Research

Evaluation research is perhaps the major form of applied policy research. Yet there is a widely-shared feeling among evaluators that their findings are not as prominent in policy debates and program decisions as they should be.[6] Many reasons for this lack of impact have been cited: the timeliness of the report; the appropriateness of the methodology; organizational resistance to change; inadequate dissemination of results; and lack of relevance of evaluative findings to choices faced by the organization are but a few to the commonly cited reasons.[7]

Evaluative designs can be constructed that are more "policy-relevant" then traditional evaluative studies without compromising the integrity of the research. The critical design issue is to anticipate the policy context in which the evaluative information will be used. Anticipating the policy context involves responding to several questions:[8]

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-- Who will make policy decisions in regard to coastal zone management programs?

-- What policy decisions need to be made?

-- Do policy-makers require evaluative information to make these decisions?

-- What types of evaluative information do they need?

-- Can this information be provided in time to be used in the decision-making process?

Each of these questions is discussed below.

Evaluation Clients

As each state searches for an evaluative strategy, it is useful to begin with a list of the potential clients for CZM evaluations. This emphasis on clients explicitly recognizes that policy-relevant evaluation is by definition "political." The purpose of evaluation is to respond to demands for information; information that will be used to make policy decisions. The need for evaluative information and the relevance of particular types of information becomes more clear if we focus initially on the question of "who wants to know?". By framing the evaluative enterprise so as to respond to particular clients it is possible to identify those questions that will be answered--and those that will not.

There are many potential "clients" of coastal zone management programs of which four are identified here: Federal program administrators; state program administrators; program implementors; and elected officials. Federal program administrators are those with responsibility for overseeing state programs in the Office of Coastal Zone Management. State program administrators are agency personnel in each state's designated "lead agency." Program implementors are

those state and/or local officials who have the day-to-day responsibility for issuing permits or allocating resources to meet state program objectives. Elected officials include all local, state and congressional officials who will have to respond to demands generated by program implementation.

Policy Decisions

There are four basic types of decisions to be made with regard to the implementation of coastal zone management programs: a) resource allocation decisions; b) decisions to intervene in state or local regulatory activities to insure compliance with CZM goals and objectives; c) decisions to modify some aspect of the management program; and d) decisions to terminate a program or some aspect of a program.

Resource allocation decisions involve questions about how best to allocate money and staff resources among different state and local programs to support planning and enforcement personnel, conduct research, issue permits and review projects. The major allocative criterion is what allocation will be "best" in terms of supporting coastal resource management objectives and/or solving management problems.

Compliance decisions involve such issues as the determination that a particular activity being reviewed by a state or local agency is inconsistent with CZM objectives, that a particular coastal resource management objective or procedural requirement is being systematically ignored by a state or local agency in the review of all permits, or that a state, local or federal planning endeavor is inconsistent with CZM objectives and policies. The type of intervention that is appropriate for a state lead agency to take is a separate decision, but the range of

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intervention tactics range from informal inter-agency or inter-governmental consultation to judicial action to force compliance.

Program modification decisions, as the term is used here, are those decisions involving changes in the institutional arrangements or procedures designed to manage coastal resources. Although such decisions may obviously affect the allocation of resources, the major emphasis is on inter-institutional problems or opportunities in implementation having to do with communication, coordination, efficiency and effectiveness.

Termination decisions represent the most extreme type of policy decision. Such decisions may involve some aspect of a management program that is clearly not achieving program objectives, is violative of some legal requirement, or is inordinately expensive or unpopular. Such decisions may also involve an entire state program.

Table 1 indicates the types of policy issues raised by clients to which evaluative information can respond.

Is Evaluative Information Required?

Evaluative activities may be of little policy utility, when no program modifications or other policy decisions are anticipated; or when lack of knowledge or information about program impacts is not considered a management problem.

It ought to be obvious that evaluations serve no useful policy purpose if no policy decisions are anticipated. Under such circumstances evaluation studies, if they are conducted, are likely to be either broad and unfocused to respond to the many potential future information demands or too narrowly focused on those aspects of the program that are easily quantifiable. In the latter category are

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measures of program "effort" such as the number of permits processed within a specified period. Such research efforts are more aptly characterized as public relations.

Secondly, program managers and other policy clients may recognize that there are problems in their programs such as lack of coordination with other relevant agencies, poor communication, or delays in processing permits. Evaluation research can be used to confirm the obvious, but unless such documentation is seen by some client as a requirement for making the necessary changes, such research is not particularly useful.

These two points are variations on a single theme: Unless policy clients perceive a need to document and assess program impacts, evaluation research has little to contribute.

Types of Evaluation Information Required

Specific information requirements for each of several approaches to evaluating coastal zone programs are identified in a subsequent section. Generally, however, policy decisions will require information both about implementation processes and program outcomes.

Implementation process questions relate to the program operations by which program management objectives are supposed to be achieved. For example, in a management program in which a) coastal use permits are required for "major" projects exceeding some designated threshold; b) such "major" projects require the preparation of a coastal environmental impact statement or comparable impact-revealing document; and c) permits may be issued only if the proposed project will not result in impacts that violate CZM objectives there are several potential process questions to be addressed. For example, how adequate in practice

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TABLE 1. POTENTIAL CLIENTS FOR CZM EVALUATION AND EVALUATIVE ISSUES

EVALUATION CLIENTS	TYPES OF ISSUES			
	Allocative	Compliance	Program Modification	Termination
Federal Program Administrators	Which resource management activities proposed by states are most likely to be supportive of national objectives?	Are state program activities consistent with federal regulations?	What national coastal problems are inadequately or inappropriately dealt with under state programs?	Are there elements in state programs that are inconsistent with the federal law or desirable practices?
State Program Administrators	Which coastal resource management activities show the greatest short-run promise of supporting CZM objectives? The greatest long-term	Are individual permits issued in compliance with state CZM objectives? Are state and local agency plans consistent with CZM objectives?	What specific coastal resource management problems persist in spite of CZM? What procedural problems occur?	Are there specific program elements (e.g., permits let by a particular agency) that violate the intent of the program?
Program Implementors	How should resource be allocated among permitting, planning and enforcement activities?	Are development activities consistent with permit conditions?	What practical problems have arisen in the implementation of CZM?	Are there aspects of the program that are so costly or time consuming as to make implementation very difficult?
Elected Officials	Among the various land use and environmental management activities supported by the jurisdiction which areas have highest priority?	Is the implementation of the law consistent with the intent of the Congress (state legislature)?	What aspects of the programs are generating opposition from the public and/or specific interest groups? Are controveries procedural or substantive?	Do concerns about specific program elements have merit?

is the "threshold" for distinguishing major from minor projects? How consistently was the threshold criterion applied? How comprehensive were the impact-revealing documents? To what extent did permit decisions take into account the potential adverse impacts by applying impact-mitigating conditions or by denying permits?

Each of these questions relates to some manipulable program element. Evaluative information can be the basis for making program adjustments such as changing the threshold for major permits, requiring additional information in the coastal impact statement and the like.

Program outcomes, on the other hand, refer to measurable changes which can be attributed to the coastal zone management program. Program outcome questions include those related to the achievement of program goals, but they may also refer to other issues such as the impact of CZM regulations on development costs or housing prices.

The most sophisticated evaluations are, of course, those that link program processes to outcomes; that is to say, those evaluations which clarify which program elements are most conducive to the achievement of program objectives.

Timeliness of Information

One of the major causes of the non-utilization of evaluation research is that evaluative findings are not available when policy decisions are made. Obviously, policy relevant research, by definition, must be done sufficiently in advance of the policy decisions to allow for conducting the research and reviewing the findings with the relevant clients. In practice this is often difficult either because the clients do not anticipate the decision points or underestimate the time required for

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evaluative studies. While timeliness may be regarded by some as just another item on a checklist of evaluative studies, it is one of the central issues with regard to most formative evaluation studies such as compliance monitoring (see below). In such situations, if the evaluative system is not structured to guarantee that the relevant information needed to determine compliance of, say, local permits with state objectives prior to the final local decision, there is no point in having such an evaluative program.

3. Approaches to the Evaluation of Coastal Zone Management Programs

What follows is a discussion of some major approaches to the evaluation of coastal zone management programs. These approaches are intended as organizing frameworks for providing the information needed to make the policy decisions identified in the previous section. They are also indicative of the range of ways in which the term "evaluation" has been used to date in discussions of coastal zone management programs.[9]

The basic goal of the Coastal Zone Management Act is to "preserve, protect, develop, and where possible, to restore, or enhance the resources of the Nation's coastal zone for this and succeeding generations...."[10] The Act goes on to describe the means by which this goal is to be achieved.[11] The coastal zone management program is an inter-governmental endeavor. At each level of government there are activities designed to achieve particular sub-objectives all of which are intended to support the basic objectives of the Act. These activities and objectives can be thought of as links in a means-ends chain. This means-ends chain is shown in Figure 1.

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Five evaluation approaches are described below. Each approach focuses on one or more links in the means-ends chain in Figure 1. Each of the five approaches responds differently to several questions about the linkage:

1) What is the objective of this linkage which program activities are intended to support? Are there multiple objectives?

2) Who is the target of these program activities (i.e., at which groups or individuals are the activities directed?).

3) What is the desired magnitude of change or effect?

4) How is the objective to be attained?

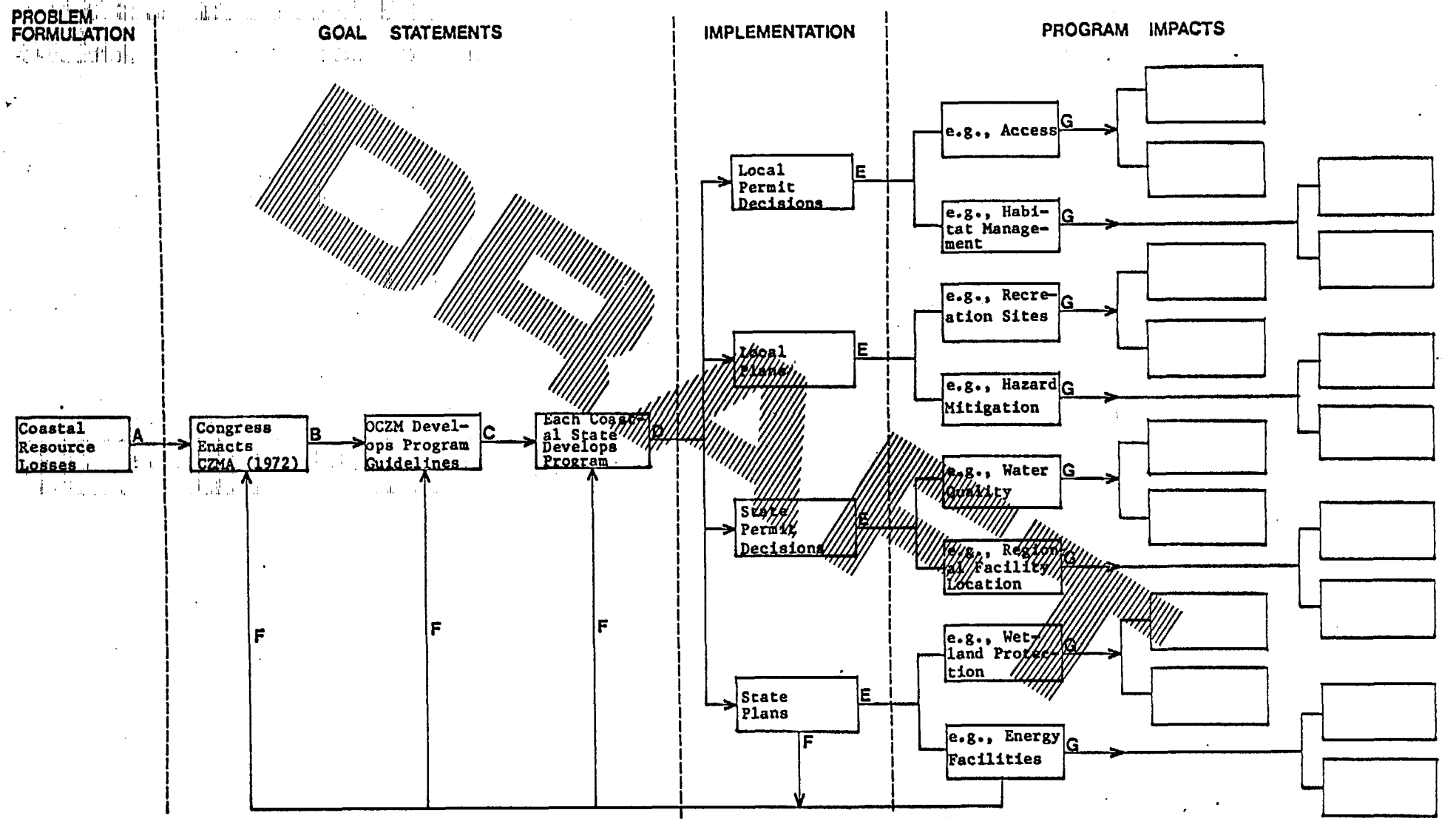
The five evaluative approaches--program logic, compliance, process, goal achievement and impact--are discussed below. The name attached to each approach is somewhat arbitrary, but they correspond generally to evaluation terminology. The bounds between the approaches are not distinct. Rather, they represent a first sorting of possible approaches that recognizes the multiplicity of needs for evaluative information in the coastal zone management program; needs that are not likely to be satisfied with any single approach.

Program Logic Evaluation

The Coastal Zone Management Act (CZMA) authorizes planning grants to participating states to develop state coastal zone management programs.[12] The Act and guidelines issued by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, are intended to provide guidance both about the process of program development and the means for assessing the

FIGURE 1

COASTAL ZONE MANAGEMENT PROGRAM



adequacy of a state's management program for continued participation in the program.[13] The states must, for example, designate a coastal zone subject to the management program,[14] define permissible land and water uses within the coastal zone,[15] and indicate the means by which the state proposes to exercise control over land and water uses within the coastal zone.[16]

Program logic evaluation refers to those activities undertaken by representatives of the Office of Coastal Zone Management to assess the adequacy of completed state programs.[17] (Linkage C in Figure 1). Approved state programs are then eligible for substantial management grants.[18] In contrast to the types of evaluative described below, program logic evaluations involve qualitative, before-the-fact assessments of potential program effectiveness. The basic objective of these evaluations is to insure that state programs comply with both the letter and the spirit of the Coastal Zone Management Act as interpreted by OCZM. A secondary objective that is not necessarily achieved by consistency with the law is to insure that state programs provide the means for dealing with major coastal resource management issues in the state.

Program logic evaluations are directed principally at coastal zone personnel in the state's "lead agency" for coastal zone management. The interaction between OCZM officials and the state personnel begins early in the development of any state program and culminates in program approval, state withdrawal or suspension of the state by OCZM.

Inherent in the program logic evaluation is an important evaluative assumption, namely that "good" CZM programs are those whose structures and

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planned program activities are consistent with the CZMA and the implementing regulations. State programs that deviate from federal objectives are, if not "bad," at least suspect.

Several levels of evaluation are implicit in this approach. At one level, the state's management goals are being assessed. Are they clear and specific? Are they consistent with the federal objectives? Are they comprehensive in the sense of addressing the state's major coastal resource management problems? At a second level, such evaluations address the "logic" of specific means of achieving management objectives. Does the management program rely largely on regulatory activities? Implemented by whom? At what level of specificity? Does it rely primarily on mandatory planning activities? In short, are the means of management appropriate given the goals the state seeks to achieve?

Finally, program logic evaluation involves an assessment of a state's management personnel and of the political environment in which they operate. Judgments are made about how much can be expected of the state in terms of the strength of the program and its consistency with federal objectives given the state's management personnel and the constraints they face.

As noted above, program logic evaluation is not like the other forms of evaluation described below in the sense that it represents an assessment of likely program success rather than an analysis of demonstrated success. Because states vary widely in terms of their resource management problems, their commitment to management efforts and the available management resources, the application of external criteria that are valid in every state context is probably not possible. Hence, such evaluations require a great deal of independent judgment, detailed knowledge of individual state conditions and a great deal of faith.

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Compliance Evaluation

Most state CZM programs contain some sort of regulatory element in which state and/or local governmental authorities make plans or issue permits for specific resource use activities or for land or water uses in specific coastal environments or both (linkage D in Figure 1).

The basic objective of compliance evaluations is to determine the extent to which those plans or permit-letting activities are consistent with state (and implicitly with federal) objectives and policies.[19] Hence, compliance studies take program goals and objectives as "givens." Compliance evaluations, as the term is used here, can be done for the purpose of determining situations in which the state lead agency should intervene, for simple diagnostic purposes or for both.

Some states such as California have a formal appeals mechanism that makes possible state review of locally-issued permits.[20] Other states, Hawaii is an example, are authorized to initiate or participate in court suits that allege non-compliance by a state or local authority with coastal zone management objectives and policies.[21] State lead agency responses to apparent non-compliance may take many other forms as well, from simple requests for more detailed explanations about non-complying activities to withdrawal of funds and other sanctions.

Several issues are involved in state review of permits for compliance. The most basic issue is the definition of compliance. How are regulatory activities in compliance to be distinguished from non-complying activities? A second issue is the scope of the compliance evaluation system: Which regulatory activities will be

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reviewed and which will not? Third, a system for generating and transmitting information that can be used as a basis for compliance decisions has to be developed.

Compliance evaluations for diagnostic purposes allow the lead agency to identify particular uses that are inadequately regulated, environments that are under-managed, procedural problems (e.g., processing delays) or regulatory devices, such as the application of conditions to permits, that are being used to good advantage by a particular agency or authority and might successfully be applied by other agencies. Compliance evaluations for diagnostic purposes offer an information base for seeking legislative amendments, additional training for permit-letting authorities, management changes or self-congratulation.

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Process Evaluation

Process evaluations seek to identify how or why CZM programs succeed or fail (linkage E in Figure I). Such evaluations focus on several program attributes:[22]

- an identification of those agencies and groups whose behavior must be affected to insure program success;
- specification of the desired program effects;
- specification of program attributes that make the program more or less successful;
- specification of the management contexts which contribute to program success or failure.

The major policy purpose of process evaluation is specific program diagnosis, development and improvement, but such process evaluations can also contribute to

our general understanding of the conditions and techniques that make for successful (and unsuccessful) coastal zone management programs.

If coastal zone management programs are to make a difference in the way coastal resources are managed, necessary requirements for that difference are: 1) that agencies responsible for the implementation of the law comply with the law; and 2) that public and private agencies and individuals who propose coastal resource use activities comply with the law. Such compliance is not a sufficient condition for improved coastal resource management--the logic of the program may be faulty--but it is a necessary condition if improved coastal resource management is to be attributed to the CZM program. Hence, compliance is the major program effect to be analyzed in the process evaluation discussed here.

Compliance of public agencies is likely to be affected by a number of factors, including the management "climate," inter-organizational communication, the means of detecting non-compliance and the positive and negative sanctions for enforcing compliance.[23]

In the literature on compliance, the degree to which organizational change is required and the degree of consensus among superordinates and subordinates have been identified as critical variables affecting the rate of compliance.[24] These factors might be termed the "management climate" for implementing coastal zone management programs. In view of previous findings, the management climate most conducive to a high rate of compliance is one in which there is a high degree of understanding and consensus among state and local authorities charged with implementation about the purposes of the management program and program management activities involve a minimum or organizational change, i.e., they occur through existing agency structures.

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Inter-organizational communication is a second important variable likely to contribute to variations in the rate of compliance. Effective implementation requires that program policies and objectives be understood by those who are charged with implementation. As Van Meter and Van Horn note, "the prospects of effective implementation will be enhanced by the clarity with which standards and objectives are stated and the accuracy and consistency with which they are communicated."[25] There are, however, risks in specificity, particularly with regard to implementing programs such as CZM which have multiple goals. Decision standards and guidelines may be so specific that they constitute "pre-decisions" that allow for no administrative discretion in implementation. Since it is impossible to write decision guidelines that foresee every possible decision-making situation, attempts at such specificity may undermine the general consensus about the purposes of coastal zone management and increase the alienation of subordinate agencies and personnel.

Closely related to the issues of communication are those related to the positive and negative sanctions for enforcing compliance. Decisions to comply are based on calculations of the costs and benefits of complying, although the calculation process itself may not be conscious and deliberate. Etzioni has identified three types of sanctions for insuring compliance: normative, coercive and remunerative.[26] Normative sanctions involve the allocation of symbolic rewards and deprivations. In context of a state CZM program, such sanctions might involve the public identification of particular agencies or local authorities as "not doing a good job in implementing the program." Coercive sanctions involve the

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application or threat of application of punitive sanctions such as the withdrawal of funds or overruling a permit decision. In the context of state CZM programs, however, most sanctions are likely to be remunerative: making available funds and technical resources for program implementation (albeit with the coercive sanction of fund withdrawal apparent in the wings).

The rate of private compliance is a function of the same factors that shape the rate of compliance of subordinate implementing agencies in a CZM program, namely the clarity of CZM objectives, the degree to which there is consensus among landowners and developers about the general appropriateness of those objectives, the probability of detection of non-compliance and the costs of non-compliance.

The clarity of CZM objectives to those who are most directly affected by those objectives and the degree of general agreement about the appropriateness of those objectives is likely to depend both on general attitudes in the state about resource management and the particular efforts of program planners to incorporate the views of affected parties in the CZM program during the planning stages. Of more immediate concern in the implementation phase of CZM programs are the mechanisms employed by implementing agencies to detect instances of non-compliance and the types of sanctions that can be brought to bear on non-complying parties.

A major evaluative issue relates to the relationship between techniques for detecting non-compliance and the rate of compliance. In each state, what are the formal mechanisms for insuring private compliance? What agency or agencies are responsible for detecting non-compliance? What proportion of their efforts are

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directed at detecting non-compliance? How adequate are the resources devoted to detecting non-compliance?

A second major evaluative issue has to do with the relationship of sanctions and the propensity to comply with CZM objectives. Are there fines for violations of CZM objectives? How severe are they? Are there other penalties? How is the process to impose sanctions activated? Is the process open only to certain agencies? Is the process open to parties who can show some direct damage resulting from an instance of non-compliance? To all citizens?

The answers to these questions will help identify those mechanisms that enhance private compliance with CZM objectives.

Contextual factors affecting the rate of public and private compliance include such things as the degree of popular support for public resource management efforts, the degree to which coastal resource loss or degradation is perceived as a public problem and the threat of public exposure for violating the spirit or the letter of the coastal zone management program.

Goal Achievement

As conventionally conceived, evaluation involves the analysis of the extent to which an organization's goals have been achieved (linkages F in Figure 1). Weiss, for example, says that "(t)he purpose of evaluation is to measure the effects of a program against the goals it sets out to accomplish...."[27] Wholey et al. argue that evaluation "assesses the effectiveness of an on-going program in achieving its objectives...."[28]

This emphasis on official program goals as a way of organizing and understanding program activities has been criticized by some.[29] The basis of this

criticism is that organizations are adaptive organisms and that "official" goals may bear little relationship to the unofficial goals around which program activities are organized.

Hence, an initial issue which confronts those who would conduct policy relevant research organized around the goals achievement approach is determining the extent to which "official goals" should be the basis for organizing the inquiry. The achievement of "unofficial" goals or goals that are officially less central to the organization may be much more relevant to the policy-maker.

A second issue that is particularly germane to the evaluation of coastal zone management programs is that most programs have multiple goals. Typically, some of these goals emphasize preservation or conservation of resources while others stress the need for insuring opportunities for various types of economic activity. There are, in short, real or apparent conflicts and contradictions among goals.

Under these circumstances the evaluator who is emphasizing the goal achievement model has several alternatives, among which are to:

1) work with clients to determine in what areas information about goal achievement is needed;

2) determine, with the assistance of clients, how program success is defined (i.e., in terms of which goals);

3) analyze permit actions and allocative decisions as a way of demonstrating which goals are emphasized in actual program implementation.

Clients may feel they know whether some program goals are being achieved. They may want the sort of documentation that evaluation can provide even though such information provides them with "nothing new." They may, on the other hand,

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prefer that the achievement of some policy goal not be assessed either because they fear that they will "look bad" or because they feel that limited evaluative resource can be more effectively used in answering other questions.

Clients sometimes argue that evaluations are "irrelevant" to policy needs because the evaluation didn't take into account the program's "real objectives." While this is sometimes merely an artful dodge on the part of program managers who fear assessment, there are situations, as noted in the section on process evaluations, in which programs-as-implemented differ, sometimes substantially, from programs-as-legislated. Hence, policy relevant evaluations may choose to construct goal achievement evaluations around unofficial program implementation goals.

Finally, one evaluative strategy is to de-emphasize explicit policy or goal statements and seek to identify the "goals" or policy preferences that are revealed by a systematic analysis of agency behavior in allocating funds or issuing permits.[30] Such analysis can be used as a basis for clarifying whether these "implicit goals" are really those the agency wants to achieve and, if so, how they might be achieved more effectively or efficiently.

Broad Impact Evaluations

Broad impact studies are intended to identify certain types of social, environmental, political or economic impacts that have been caused by or are associated with the implementation of coastal zone management programs (linkage G). Such studies are based on the premise that even if state programs are judged "successful" (or unsuccessful) in terms of their goals, there are other evaluative criteria which should be used in making judgments about the program.

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The identification and measurement of "impacts" of coastal zone management programs is a problematic endeavor. There are, to begin with, basic problems of definition. What, for example, is an impact? Strict usage would suggest that an impact is a demonstrable behavioral or attitudinal response which can be linked to some aspect of a coastal zone program. However, as Dolbeare notes,

> ...policies have distinguishable stages of "impact," extending from the immediate effects upon primary objects through ever-widening circles of second- and third-order consequences. Such broader consequences can be intended or unintended, direct or indirect, behavioral or attitudinal, short- or long-term, mediated or unmediated, convergent with other policies or at odds with them.[31]

Hence, an analysis of the impacts of coastal zone management program must begin with the recognition that there is no wholly satisfactory way of bounding the analysis so that some potential impacts are eliminated from scrutiny.

A second major problem in the identification of coastal zone program impacts is methodological. Because coastal zone management programs are but one of several federal, state and local programs and activities designed to direct land and water uses consistent with resource management objectives and one of a myriad of factors affecting the socioeconomic context in which public and private land and water use decisions are made it is difficult to isolate cause and effect relationships with much certainty except with regard to very specific and circumscribed situations. It may be possible, for example, to make some inferences about the denial of a specific industrial use permit on the quality of water in a specific estuary, but it is much more intellectually difficult to generalize about the

relationship between the quality of coastal waters and the rate of approval or denial of coastal resource use permits.

A third problem relates to the evaluation of impacts. Once identified program impacts must still be put into some value framework. The rate of approval for dredge and fill permits, for example, is itself meaningless in an evaluative sense. Is a 90% rate of approval "bad"? To answer that question an evaluative standard is needed. Such a standard may be comparative (e.g., the rate of approval prior to program implementation is compared to that after program implementation) or it may be based on some more or less arbitrary standard of "success" arrived at by consensus or fiat. However, without an explicit value framework meaningful evaluation, in the sense that it is used here, is impossible.

There are many broad impact issues that have been raised in regard to coastal zone management. Questions related to economic impacts have been frequently raised.[32] Among these are the questions related to the impact of CZM programs on housing costs, development costs generally, and the impact of CZM on the allocative efficiency of the market. Legal impact issues are also receiving attention.[33]

4. Research Design Issues

In the previous section, several approaches to the evaluation of coastal zone management programs were identified. Each approach involves focusing on a particular aspect of state programs. Each approach represents the "what" of evaluation of CZM programs. Research design, in contrast, involve on "how" questions related to the organization and conduct of evaluation studies. This section focuses on some of the major issues in the design of evaluative studies, including the development of evaluative criteria, the identification of empirical indicators, the development of evaluative standards and data collection.

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Evaluative Criteria

Explicit in each of the five evaluative approaches discussed in the previous section are general criteria for evaluation. Developing a research design requires specification of precisely what criteria are most relevant for assessing program success. Which program goals will be singled out for special scrutiny? Which impacts are most relevant for assessing the effects of state CZM programs? The compliance of which agencies with program objectives will be most useful for gauging program effectiveness?

The choice of evaluative criteria in policy-relevant research is ultimately a question of whose criteria are to be chosen. Criteria may be related to pending policy decisions, to public concern and debate about the effectiveness of some aspect of the program, or other considerations.

A brief example may serve to illustrate the implications of choosing among evaluative criteria. One of the policies in Hawaii's coastal zone program is to "minimize destruction or degradation of coastal water ecosystems by effective regulation of stream diversion, channelization, and similar land and water uses, recognizing competing water needs."[34] "Program logic" criteria might involve 1) the determination of whether agencies charged with "effective regulation" have regulations governing "stream diversion, channelization, and similar uses...."; and 2) the adequacy of those regulations in terms of assuring that disruption or degration of coastal water ecosystems is minimized. Compliance criteria would involve a determination of how consistent agency decisions involving stream diversions are

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with their own guidelines and with the CZM policy. Process criteria would emphasize the type of information that is required in making such decisions, the degree to which technical analysis is incorporated in the review process and similar considerations. Goal achievement criteria would relate to the number of coastal water ecosystems that are degraded or depleted subsequent to program implementation. Impact criteria might involve, among other considerations, the effects of this policy on community water supply, the population of valued shellfish which live in coastal water ecosystems or any other of a number of potential direct or indirect impacts.

Empirical Indicators

Having chosen the appropriate criteria or set of criteria the next step is to develop empirical indicators which make measurement possible. There are a number of issues involved in the choice of such indicators, but two of the principal issues that relate to the evaluation of CZM are those relating to validity and reliability of indicators and the choice between objective and subjective inclinations.

Validity refers to the extent to which an indicator measures what it purports to measure.[35] Reliability refers to the replicability and consistency of findings.[36] Consider, for example, an empirical indicator developed for a "goal achievement" criterion related to minimizing disruption or degradation of coastal water ecosystems. Such an indicator might be "number of instances of disruption or degradation of coastal water ecosystems" due to stream diversions or channelization. Assuming that "disruption" and "degradation" would be operationalized in terms of specific ecological or water quality parameters, is the

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indicator valid and/or reliable? The indicator is reliable to the extent that qualified technical experts using the same indicators (and definitions) reach the same conclusions about the extent to which disruption or degradation has occurred. Even though the indicator is reliable, however, it may or may not be a valid indicator of "effective regulation" depending on, among other things, whether the responsible agencies faced regulatory decisions during the time period being studied.

The validity issue has many dimensions, but for policy-relevant evaluation perhaps the most pressing issue is whether the relevant policy-makers regard the indicator as valid. In the tradition of careful scientific inquiry it may be that the evaluators have developed multiple indicators, but unless the policy clients regard the indicators as valid the policy relevance of the study may be limited. Hence, assuming prior agreement with policy-makers about what indicators will be used and what they mean is a necessary prerequisite to policy-relevant research.[37] The major reliability issue has to do with the collection and transmission of data and whether data collectors knowingly or unknowingly corrupt the data.

Standards

Having developed criteria and established empirical indicators, the next step is to indicate how "success" will be defined. If ninety percent of all permits issued are in compliance with state CZM objectives or policies, does that constitute "success" in terms of that criterion? If not, what level of compliance would indicate success?

In the ideal evaluative situation, "success" is a comparative concept.[38] For example, a new cream for the treatment of acne can be evaluated by comparing

the incidence of acne among three experimentally selected groups of at-risk individuals. One group is treated with the new treatment, another receives a cream with no known medical benefits and a third group gets no treatment. If experimental conditions are carefully maintained, the comparative success of the new cream should provide a basis for making inferences about its general usefulness.

The carefully-controlled comparative analysis of success is not possible for the evaluation of coastal zone management programs. Under these circumstances evaluators have several alternatives. They can:

1) provide time series analysis of coastal conditions which may make possible comparisons of conditions before CZM with those subsequent to program implementation (while trying to control for other potential intervening variables);

2) set arbitrary standards of success prior to the collection of data (e.g., ninety percent compliance rates constitute success);

3) provide descriptive information only and leave the evaluative judgment up to the individual clients.

Data

The empirical indicators determine what data are required for analysis. Gathering those data may be viewed as a separate problem. In practice, most indicators are formulated with an eye toward data availability. Indicators are often compromise measures that reflect the unavailability of data.

Several of the evaluative approaches outlined above, such as compliance evaluation, require data on a regular, on-going basis. Hence, some routine monitoring system is implied. The primary source for such data is likely to be the

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very people whose behavior is being evaluated--people such as permit officers. This raises data reliability problems, but perhaps more difficult are the sheer physical problems associated with gathering, transmitting, storing and managing large data sets. One option, of course, is to develop a compliance questionnaire for each permit. Such an instrument greatly facilitates comparability although it may generate great resistance because of the additional work required. Another option is for a receiving agency to have staff reports, permit applications or comparable data forwarded as a basis for review.

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Footnotes

1. As of July 1, 1979, thirteen states have approved management programs.

2. Robert G. Healy, John S. Banta, John R. Clark and William J. Duddleson, Protecting the Golden Shore (Washington, D.C.: The Conservation Foundation, 1978); Robert B. Ditton, John L. Seymour and Gerald S. Swanson, Coastal Resources Management (Lexington, Mass.: Lexington Books, 1977); Joseph M. Heikoff, Coastal Resources Management: Institutions and Programs (Ann Arbor, Mich.: Ann Arbor Science, 1977); Melving B. Mogulof, Saving the Coast (Lexington, Mass.: Lexington Books, 1975); Maureen McCrea and James H. Feldmann, "Interim Assessment of Washington State Shoreline Management," 3 Coastal Zone Management Journal 2, 1977, at 119; Paul Sabatier, "State Review of Local Land Use Decisions: The California Coastal Commissions," 3 Coastal Zone Management Journal 3, 1977, at 255; Stanley Scott, Governing California's Coast (Berkeley: Institute of Governmental Studies, 1975); Daniel A. Mazmanian and Paul A. Sabatier, "Policy Evaluation and Legislative Reformulation: the California Coastal Commissions, A paper delivered at the Annual Meeting of the American Political Science Association, 1978; Robert Warren, Louis Wechsler and Mark S. Rosentraub, "Local-Regional Interaction in the Development of Coastal Land Use Policies: A Case Study of a Metropolitan Area," 3 Coastal Zone Management Journal 4, 1977, at 331. See also, Ernie Englander, Jim Feldman and Marc Hershman, "Coastal Zone Problems: A Basis for Evaluation," 3 Coastal Zone Management Journal 3, 1977 at 217.

3. See, e.g., Healy, et al., op. cit., and Ditton, et al., op. cit.

4. See, e.g., Healy, et al., op. cit., Scott, op. cit., Heikoff, op. cit., and Mazmanian, op. cit.

5. The term "policy relevance" is defined by Lynn as "an attribute of a broad research program in which the accumulated efforts of researchers are leading toward useful answers for policymakers." See Laurence E. Lynne, Jr., "Policy Relevant Social Research: What Does It Look Like?" Evaluation Studies Review Annual, Volume 2, edited by Marcia Guttentag (Beverly Hills: Sage, 1977) at 63.

6. See, e.g., Thomas D. Cook, "Utilization, Knowledge-Building, and Institutionalization: Three Criteria by Which Evaluation Research Can Be Evaluated," Evaluation Studies Review Annual, Volume 3, edited by Thomas Cook (Beverly Hills: Sage, 1978); Carol H. Weiss, Evaluation Research (Englewood Cliffs, N.J.: Prentice Hall, 1972). Michael Patton, Utilization-Focused Evaluation (Beverly Hills: Sage, 1978).

7. Patton, op. cit., and Weiss, op. cit.

8. Patton, op. cit.

9. Suchman argues that the term "evaluation" should be used for "the general process of judging the worthwhileness of some activity regardless of the method employed" while reserving the term "evaluation research" for the "specific use of the scientific method for the purpose of making an evaluation." See Edward Suchman, Evaluation Research (New York: Sage, 1967) p. 31.

10. Coastal Zone Management Act of 1972, 16 U.S.C. & 1452 (hereinafter referred to as CZMA).

11. Ibid. at §1454.

12. Id.

13. 15 CFR Part 923.

14. CZMA at §1454 (b)(1).

15. Id. at §1454 (b)(2).

16. Id. at §1454 (b)(4).

17. Useful examples of the sorts of program logic questions that might be asked can be found in John B. Noble, John T. Epting, Michael C. Blumm and Joel G. Blumstein, "Evaluating State Coastal Plans: Questions to Ask," Coastal Zone '78, Volume 1 (New York: American Society of Civil Engineers) pp. 101-116.

18. CZMA at §1455.

19. Compliance theorists are concerned with the conditions of and propensity to obedience. See, e.g., Samuel Krislov, et al., Compliance and the Law (Beverly Hills, Calif.: Sage Publications, 1966).

20. California Coastal Zone Conservation Act of 1972 (Public Resources Code, Division 18, §27000 et seq.).

21. Hawaii Revised Statutes, §205A-6(6).

22. See Suchman, op. cit., p. 67.

23. Amitai Etzioni, Comparative Analysis of Complex Organizations (New York: Free Press, 1975) (revised edition), Herbert Simon, Models of Man (New York: John Wiley, 1956), Donald S. Van Meter and Carl E. Van Horn, "The Policy Implementation Process: A Conceptual Framework," 6 Administration and Society 4, February 1975, pp. 444-487.

24. Herbert Kaufman, The Limits of Organizational Change (University: University of Alabama Press, 1961) and Neal C. Gross, Joseph B. Giacquinta and Marilyn Bernstein, Implementing Organizational Innovations (New York: Basic Books, 1971).

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25. Van Meter and Van Horn, op. cit., p. 466.

26. Etzioni, op. cit., p. 5.

27. Weiss, op. cit., p. 4.

28. Joseph S. Wholey, John W. Scanlon, Hugh G. Duffy, James S. Fukumoto and Leona M. Vogt, Federal Evaluation Policy (Washington, D.C.: The Urban Institute, 1970) p. 23.

29. See, e.g., Irwin Deutscher, "Toward Avoiding the Goal Trap in Evaluation Research," in Clark Abt (ed.) The Evaluation of Social Programs (Beverly Hills, Calif.: Sage, 1976) pp. 249-268.

30. See, e.g., Kem Lowry, "Evaluating State Land Use Control: Some Perspectives and a Case Study," Urban Law Annual (forthcoming).

31. Kenneth M. Dolbeare, "The Impacts of Public Policy," 5 Political Science Annual (Indianapolis: Bobbs-Merril, 1974) p. 93.

32. While the literature related to economic impacts of coastal zone management is sparse, several types of costs associated with land use controls generally have also been attributed to coastal zone management programs: costs of delay in permit processing; increased housing costs; reduction in the markets allocative efficiency and administrative costs. See Robert Kneisel, Economic Impacts of Land Use Control with Special Reference to the California Coastal Commission (Davis, Calif.: University of California, Institute of Governmental Affairs, 1978).

33. In the conventional conception of legal impact, virtually everything that happens in coastal areas of states with coastal zone management programs is a potential consequence of the Coastal Zone Management Act. There is no inherent reason to limit the focus on relevant impacts to changes in housing prices or increases in the populations of endangered waterfowl. Arguments for focusing on other potential impacts, such as demographic changes or even changing architectural styles could also be made. How, then, does one delimit the domain of potential impacts in such a way as to contribute to policy-relevant discourse about legal impacts?

One obvious way is to talk about changes in law generally which can be attributed at least in part to the Coastal Zone Management Act and its progeny in the states. Such a focus requires abandoning the traditional emphasis of legal impact as something dependent on a law, judicial decision or administrative act. It requires a recognition that law is a process which changes attitudes and behavior and adjusts to changes in attitudes and behavior. Laws, administrative acts and judicial decisions are regarded as both dependent and independent variables; as both cause and effect.

Given this altered conception of legal impact, one focuses on rapidly changing areas in the law and asks how the Coastal Zone Management Act has contributed to those changes and how such changes are likely to affect the implementation of the law at the state level or result in further amendments to the Act.

There are four broad areas of the law which are shaping and being shaped by the forces of which CZM is a part: 1) the "rights" associated with private property; 2) tools and methods public resource management systems; 3) judicial and administrative procedures; and 4) the role of the courts in environmental management.

34. Hawaii Revised Statutes, Section 205A-2(c)(4)(c).

35. Suchman, op. cit., p. 120.

36. Ibid., p. 116.

37. Patton, op. cit., p. 230.

38. Donald T. Campell and James C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally).

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