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The Importance of Goals, Objectives, and Values in the Fisheries Management Process and Organization: A Review

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Abstract.—We review the managerial concepts of goals, objectives, and values, and their importance and function in fisheries management. Fishery management is a process aimed at accomplishing predetermined goals and objectives. Throughout the history of fisheries management, goals have been rarely stated explicitly or have been stated in generalized terms of “best” or “wise” use with no supporting objective statements. Goals are ideals, major accomplishments, ends, or states of affairs to be achieved. They direct a manager’s planning, development of strategies, and direction of his or her organization’s activities. Objectives operationally support goals and are measurable, verifiable statements of intermediate tasks that must be accomplished for goal attainment. Objectives help define goals, identify conflicting activities, guide elements of the decision-making process, and ensure accountability of personnel within an organization. Without clearly defined goals and supporting objectives, goal displacement often occurs. Goal- and objective-setting are influenced by values. Values are personal standards as to what is good or bad, fair or unfair, and hence influence our decisions. The more incongruent the participants’ values are in an organization, the more difficult it is to determine and reach an organization’s goals and objectives. Values influence the allocation process: How much is allocated? Who gets what? The fisheries management process suffers from the lack of recognizing the roles and dynamics of goals, objectives, and values in effective fisheries management. We conclude that not understanding these concepts and their interactions is a major factor in causing conflicts in the fisheries management process.

In this paper, we review the managerial concepts of goals, objectives, and values. We stress literature development by the business community and develop arguments for the recognition and incorporation of these concepts in fisheries management. The traditional view of fisheries managers has been that they are professionals who manipulate fish populations and their habitat. This view has changed radically in the past 10–15 years. Fisheries management professionals now believe that they primarily manage people, not fish. Fish-

eries management is the management of people within a resource agency (the managers) and the people who are trying to influence the managers. Both are involved in the fisheries management process.

In following the traditional view, the concept of fishery management fell under the rubric of fishery science, and the education of those who eventually managed fisheries was primarily in the biological and natural sciences. The curriculum has changed little over the years; virtually no management ed-

ucation is included (Nielsen 1984; Kelso and Murphy 1988). Preparation for fisheries management remains to be gained through experience. Royce (1984) recognized the dichotomy between the education of those who develop scientific information and those who manage fisheries. He, in essence, called for education programs that emphasize the managerial aspects of fisheries. In a survey of upper-echelon fisheries managers, Hunter (1984) found that few had formal training in management; very few worked for an agency requiring formal managerial training. Managerial skills were learned on the job. Kelso and Murphy (1988) concluded that fisheries graduates need to be better prepared to function in the nonscientific aspects of their discipline. Even though more courses in human-oriented disciplines should be required, Kelso and Murphy (1988) and Hunter (1984) also concluded that managerial skills required by employers will be learned on the job.

Like the literature of fisheries science, the management literature has proliferated, particularly in the business management field. Unlike the fisheries literature, which has emphasized techniques or goals for fisheries management, the business management literature has explored all aspects of the management process. In practice, it is very difficult to bring together and assimilate the scattered, and seemingly unrelated, business management literature to achieve more effective fisheries management. To facilitate this process, this paper focuses on three key business management concepts in a rational planning process—goals, objectives, and values—and how they apply to fisheries management. We recognize an important theme in the fisheries literature: the need to explicitly state well-defined goals. We additionally stress the need for concise objectives that support goals and that values influence the formalization of goals and objectives in the fisheries management process. We conclude that not understanding these concepts is a major factor in causing conflicts, but recognize that there are other problems. Examples of problems are overly structured procedures, misinformed managers, and lack of broad participation in decision making. We believe, however, that these are largely symptoms caused by lack of management expertise in the process. These other aspects are beyond the scope of this paper.

We divide the evolution of fishery management goals in the Western world into three periods that represent stages of increasing complexity of fishery management issues. The first period might be considered the pre-1900s. In that era, implied goals

were laissez-faire; there was recognition that hard political choices would have to be made if there was management leading to disruption of the free-flowing lifestyle of fishermen (Nielsen 1976). This was a period of essentially no management with, seemingly, a refusal to recognize depletion as a possibility. If management institutions admitted that depletion occurred, they minimized its effect on fishing with supplemental plantings (e.g., with various salmonid species) or transplantation of nonresident species and exotics, (e.g., striped bass *Morone saxatilis* and common carp *Cyprinus carpio*, respectively).

During the next period, from the early 1900s to the late 1960s, maximum sustained yield (MSY) was the management goal. As a consequence, maximizing harvested biomass was an explicit goal, and managers focused on maintenance of fish populations and establishing appropriate harvest levels for long-term yields. Other implied goals of fisheries management involved economic and social considerations, such as maximizing employment (Gulland 1974; Nielsen 1976; Larkin 1977). Approaches by management institutions continued as in the past, but habitat manipulation techniques were also developed (particularly for fresh waters and estuaries), as were various types of restrictions on fishing efficiency.

Under management for MSY, there was implicit recognition of social and economic concerns. Criticisms and failure of the MSY approach, however, produced the current era in which fisheries managers now explicitly recognize that social, political, economic, and biological goals must be addressed. The current guiding concept is optimum yield (OY; Nielsen 1976; Larkin 1977). During OY development, the economic community argued that the primary difficulty was open access to a common resource, with its attendant allocation problems. In these arguments, social and economic goals were explicitly identified (e.g., full employment or maximizing profit; Waugh 1984; Anderson 1986). Consequently limited entry, in its many different forms, became a more recognized and applied tool in management.

Throughout this history, even when goals were articulated, they tended to be very general with little specificity. Lackey (1974) acknowledged that fisheries are managed on "soft objectives" (goals) such as "best" or "wise" use. These types of goals are good for public relations and political gamesmanship, but are difficult to use in effective, rational management. One gets the impression that fisheries managers did not recognize the need for

both generalized goals and specific objectives (see Alverson and Paulik 1973; Gulland 1974). One still finds that goal and objective statements are frequently so broad that they are of little utility in rational fishery management (Apollonio 1982; Barber 1987). We recognize, however, that in some circumstances political considerations may dictate such an approach; if used as a normal means of management, it will lead to eventual failure.

Few people seem to have recognized the role of values in fisheries management. When values were recognized, however, little more was said other than that defining goals and objectives involves making value-based judgments (Lackey 1978; Waugh 1984). Scarnecchia (1988) implied that value judgments are pervasive in fisheries management by pointing out that "The art of fishery and salmon management involves our values," and he called for the recognition of this fact. For example, managers might decide that strong salmon returns are an important goal and consequently set escapement and harvest objectives to reach that goal. Implicit in this goal and objectives are values about commercial and sport fishing, maintaining viable salmon populations, and how goal accomplishment will affect each. Higgs (1986) argued that if decision makers are to accurately and fairly manage natural resources, they must be cognizant of values in the decision-making process.

Goals and Objectives

Terminology

The definitions of the terms used in this paper vary in the literature; therefore, it is important to define them before proceeding. Although many definitions for "management" exist, most are consistent with our definition: the art and science of determining, coordinating, and utilizing human and material resources to reach the goals and objectives of an organization. Most definitions also recognize that management is a process that includes the elements of planning, giving direction, coordinating, organizing, and controlling the organization to reach organizational goals and objectives. External social, political, scientific, technological, and economic values also influence the process, however. From this perspective then, an organization striving for a particular goal(s) is composed of various interacting human groups and functions. Managers within this framework attempt to establish an environment for coordinated group effort in which individuals will contribute to organizational goal(s) with the most ef-

ficient use of resources such as money, time, personnel, and materials (Trewatha and Newport 1976; Koontz et al. 1984). Management scholars believe we can deal with current and future problems adequately only if strategies and decisions are devised that control, rather than react to, our environment (Trewatha and Newport 1976). This implies that organizational goals must guide the entire process and decision making must then become proactive and not reactive.

Carlander's (1969) definition of fisheries management, "everything done to maintain or improve fisheries resources and their utilization," emphasizes a systems approach (i.e., a system of habitat, aquatic organisms, and man). Lackey (1978) continued in this direction by defining fisheries management as the analysis of alternative decisions and implementation of these decisions to meet human goals and objectives for the utilization of aquatic resources. A key point is not the decision-making process itself, but its role in accomplishing predetermined goals and objectives for utilizing fishery resources. Fisheries management is more inclusive than just the decision-making process for utilizing fishery organisms. It also incorporates human interests in how the habitat and human resources are to be utilized and considers that the use of these resources is greatly influenced by external social, legal, political, scientific, technical, and economic goals, objectives, and values.

Some current texts on organizational management use "goals" and "objectives" interchangeably (Koontz et al. 1984); all, however, recognize that there is a hierarchy in which more generalized goals (the "soft objectives" of Lackey 1978) are supported by more specific goals and objectives. The key is the level of specificity. In this paper the two terms are defined in a more practical and specific sense. Goals are ideals, the major accomplishments, ends, or states of affairs to be achieved for which managers plan, develop strategies, and direct their organization's activities (Etzioni 1964; Lackey 1978). In fisheries management, goals are often broadly phrased, such as "provide the maximum benefit to society," "provide the most opportunity for fishermen," or "rational use and conservation of Alaska's fishery resources." A goal for fisheries off U.S. coasts might be "the Americanization of our offshore fisheries." Such goals are easy to develop and are useful for public relations by an organization (Lackey 1978), but by themselves, such goals are difficult to use operationally without further specifics.

In contrast to goals, objectives are specific, measurable, and verifiable statements of intermediate tasks that must be accomplished to attain a goal. Objectives support goals. An example of an objective to support the goal of Americanization of U.S. offshore fisheries might be to "eliminate the total allowable level of foreign fishing in the Gulf of Alaska by 1990." Goals and their operational objective statements serve to focus the activities of members of the organization on the desired "what" and "how" of achieving the organization's goals. The properties that objectives possess are very different from those of goals; objectives are verifiable, specific, and quantifiable, and have a performance measure attached through which the management agency can be evaluated for its progress and effectiveness (Lackey 1978; Malek 1978; Burke 1983). The important point is not the difference in definitions but the concept that, in rational planning, one must move from the general to the specific to accomplish the ends in our definition of management. For example, one may use decision tree methodology found in utility and multiattribute analyses to establish a hierarchy moving from general to specific statements of intent (Keeney and Raiffa 1976; Healey 1984).

The Need for Both Goals and Objectives

Central to any organization's effective management program is the identification of its goals and objectives. The utility in doing so allows prioritization, weighing and balancing of choices when there are conflicts, developing strategies to reach goals and objectives, and rational allocation of human and physical resources to efficiently reach goals and objectives. Additionally, many fishery management agencies do not have the authority or responsibility to regulate the use of fish habitats. Goals and objectives help identify other organizations or groups of people that could help in reaching common goals.

Explicit goals and their derived objectives are the key means for coordinating efficient and effective use of an organization's limited assets (Trewatha and Newport 1976). Broadly phrased goals as we have defined, however, are intangible and abstract; they are states of affairs that do not describe the activities constituting their achievement (Warner and Havens 1968). This is in contrast to tangible goals and objectives that can actually be appraised and which describe those states of affairs and activities actually being sought.

Because of their utility in focusing and directing activities while utilizing limited resources, there

is a need for tangible goals and objectives in fisheries management. For example, a tangible 5-year goal for the North Pacific Fishery Management Council's fishery for walleye pollock *Theragra chalcogramma* might be to develop and implement policies and regulations that will require the complete utilization of walleye pollock from the fishery. One of the many possible derived objectives to accomplish this goal might be to implement regulations, to be effective no later than the 1993 fishery, that prohibit discarding of walleye pollock carcasses after removing roe. A tangible goal, such as the one given in this example, provides a clear statement of management and council intent, and assists all players to develop supporting activities.

Clearly stating tangible goals and objectives sets the stage for several things. First, it helps to identify conflicting activities. Once conflicting activities are clearly identified, then a basis for accommodation of conflicting interests has been established. Now a choice can be made between alternatives. This process helps to reduce conflict, promote accommodation, balance long-term and short-term interests, determine priorities, and develop management strategies. If objectives are not clearly identified, endless discussions may ensue, based on different premises, leading to counterproductive actions focused in diverse directions. Second, explicit objectives guide all elements of the decision-making process, leading to more effective management. The importance of this point is that the various functions of the management process are directed and coordinated in appropriate directions that will accomplish the goals. Third, explicit objectives also can be used to insure accountability of individuals charged with management responsibilities. Lastly, explicit objectives can be used operationally: they give organization managers directions to carry out programs in a consistent and effective manner and provide a means of evaluating performance and measuring results of the management program (Trewatha and Newport 1976; Malek 1978; Burke 1983).

Use of intangible goals has advantages and disadvantages. Such goals are advantageous because they make it possible for an organization to accommodate diverse and even inconsistent goals. The program can meet everyone's needs at the abstract level; thus, different people feel satisfied that their interests are being served (Banfield 1962). Intangible goals also facilitate goal succession and adaptation in the immediate working environment and flexibility in interpretation of the stated

goals without the difficult and expensive process of changing the stated goals and getting diverse factions to accept changes (Catton 1962). As an example, Scarnecchia (1988) stated that "managers may take an intellectual and political short-cut, spare themselves some verbal abuse from special interests, and assume that more fish, however produced, in the short run is automatically better management—regardless of the long-term impacts." Lastly, intangible goals such as "conservation" and "rational use" permit the dramatization of goals that are highly emotional. Highly motivated volunteers can then be easily mobilized into action when a high value is placed on the perceived goals (Sills 1957).

The negative side of intangible goals revolves around the concept of goal displacement, which is "the neglect of the claimed goals in favor of the means as ends in themselves" (Warner and Havens 1968). Goal displacement leads to new, unstated goals being developed and addressed, which may be peripheral to professed organizational goals, but meet the personal needs of an organization's employees. Goal displacement is most common in organizations seeking to orient their programs around very abstract ideas (Warner and Havens 1968).

There are a number of causes of goal displacement (Warner and Havens 1968; Abelson 1983). First, in an attempt to reach tangible goals, employees redefine intangible goals in their own terms and in a form toward which they can direct their efforts. The "conservation" or "rational use" goals often have different operational definitions, concepts, and principles that vary from individual to individual (Royce 1965). In such cases one reads into such statements what one wishes. This often allows employees to work toward their own goals and objectives, which may be contradictory to and conflict with their organization's goals (Malek 1978). Such inconsistency leads to conflicts between employees within an organization, between fisheries management organizations, and between various user groups. A second cause of goal displacement is the tendency of bureaucracies to develop highly routine and structured activities. In this case, employees view the attainment of the procedures as ends or goals in themselves rather than as means toward the achievement of organizational goals (Sills 1957). As an example, management under the Magnuson Fishery Conservation and Management Act (MFCMA) has become process-oriented at the national level. Here, much attention is being given to the steps a fisheries

management plan (FMP) must proceed through and the need for conformity between regional councils before an FMP is implemented rather than to solving management issues that may be very different between regions (Barber 1987). Third, when there is tension, frustration, and dissatisfaction with intangible goals, employees will replace those goals with other goals that will lessen these problems and lead them towards obtaining individual rewards (Abelson 1983). Here, individual expectations that are not rewarded will lead to goals and objectives being developed that will lead to reward. Clearly, if tangible goals are coupled with realistic objective statements, participants will be given clear direction and a reduced need for goal displacement. There appears to be little published information on goal displacement in fisheries management. We did present, however, one example of process-orientation goal displacement (the second cause) at the national level under the MFCMA. Research in this area could further enhance the understanding of the complex nature of fisheries management.

Values

Terminology

The term value is used extensively in everyday speech and refers to what an individual prizes in himself, in associates, and in the world around him. Although repeated attempts have been made, the term defies a simple definition (Higgs 1986). Williams (1968) points out that value may refer to either the evaluation of an object (e.g., "government regulation is worthless") or to the criteria by which evaluations are made based on standards involving comparative mental "images" of worth or utility (e.g., "good or best").

The "mental image" usage is an important one in the social sciences. We subscribe to Rokeach's (1973) definition: a value is "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence." In examining the use of values in assessing public decisions about the environment, Andrews and Waits (1978) stressed that values are statements of relationship taking the form of preference, obligation, and function; values are "an estimation of worth of some object to an individual or in a particular situation."

From the social science perspective, values are absolute and basic judgmental assumptions we make about the world in which we live. Values

provide us with a set of judgmental standards about what we hold to be good or bad, beautiful or ugly, fair or unfair, and are the basis for shaping our attitudes, behavior, and perceptions of reality—and we are unaware of their exact nature (Rokeach 1973; Petulla 1980; Sashkin and Morris 1984). A value does not stand alone; it is integrated into an organized system of values ordered in a continuum of relative importance with respect to one another (Williams 1968, 1979). When one value is activated, others are activated. The behavioral outcome, either as expressed attitudes or activity, will be a result of the relative importance of all competing values (Rokeach 1973). Hence, in the case of goal displacement, when we redefine a goal, our value system provides the focus and boundaries for new goal orientations.

It must be pointed out, however, “that it is doubtful that any one descriptive definition can do complete justice to the full range and diversity of recognizable value phenomena” (Williams 1968).

Importance and Functions of Values

Business management professionals have long recognized the importance of human values in both the functioning of organizations and the determination of goals and objectives. Peters and Waterman (1982) popularized the importance of values when they stated that the main reason a business was well run was the commonly held values of the employees. The question we must address is, why are values important in the fisheries management process? As previously implied, a fisheries management organization's goals and objectives are a reflection of the participants' values (those of the managers as well as the values of those trying to influence the decisions; Perrow 1961; Daft 1986). Making these value judgments involves identifying, selecting, articulating, and ranking goals and objectives. The more incongruent the participants' values are, the more conflict and the more difficult the process.

This difficulty can be seen in the allocation process, which in natural resource management has been viewed from the perspective of who gets what and is inherently value-laden (Higgs 1986). As an example, a fishery biologist raised in a small rural community, and typifying values of the community, might value independence and freedom of competition so that everyone has equal opportunities. In the context of a fishery, this individual may favor small fishing communities consisting of relatively small capitalized economic units. This

individual might favor allocations to support these fishermen. Such bias might be enigmatic to a big-city-oriented economist who values efficiency and might be biased towards allocations supporting highly capitalized units, say factory trawlers, that maximize efficiency and profit. Calabresi and Bobbit (1978) referred to decisions based on who gets what as second-order decisions. Another value-influenced consideration in the allocation process, other than who gets what, is how much gets allocated—a first-order decision. For example, in determining a stock's condition, a fishery scientist may have to choose between different fishery models that have different assumptions or between types of data. One choice would lead to high estimates of sustainable yield and annual harvest; in contrast, another choice would lead to lower estimates. An individual with values favoring a conservative approach to management might be biased toward choosing a model or data set leading to lower harvest estimates. A similar liberal-valued scenario can be developed for the economist. Thus, values play a role at both levels of decision making, and decisions by the biologist and economist may be based on very different premises.

Unresolved value-based conflicts are substantive organizational problems and are a major contributing factor to an organization's goals and objectives not being reached (Sashkin and Morris 1984). Although unresolved value conflict doesn't seem to have reached this point of organizational failure in fisheries, it may be progressing in that direction. Smith (1986) has pointed out that there has been an evolution in fisheries management such that an element of emotionalism has been brought into the fishery. This emotion involves the esthetic uses of fishery resources rather than allocation. The formalization of MSY objectives undoubtedly involved values that formed the utilization ethic of managers and the belief that socioeconomic issues should not be considered (Nielsen 1976). In more recent years, industry has become more involved in management with the advent of the optimum yield (OY) goal, which has become legally formalized under the MFCMA. Based on the OY goal, the MFCMA recognized the importance of socioeconomic and political goals and objectives. This has necessitated the inclusion of a more diverse group of people into the fisheries management process. The goals and objectives of OY management are more diverse than those established solely for conservation purposes.

As more people are brought into the process of determining an organization's goals, a wider range

of personal values comes into play. The wider the range of values in a group, the greater the probability of conflict in finding commonly held values. For example, Hardin (1982) points out that fewer people with a rural background are becoming involved in wild population management. People with a rural background grow up in a situation that leads to the development of a utilization ethic. They develop a "gut feeling" for the carrying capacity concept and recognize the need for harvesting animals to maintain a population in balance with habitat productivity. This is in contrast to people with an urban background, who may not have observed the necessity for culling animals to maintain the habitat in a productive state. These people may develop an interest in individual animal rights and become averse to sacrificing lives of individual animals, irrespective of the long-term population or habitat consequences.

To this point, we have emphasized the value differences between groups involved in the management process. There are also value conflicts between groups within a management agency. For example, Pfund (1985) examined the dogmatism and rigidity of participants in Hawaii's Fishery Conservation Zone fisheries. She found that state and federal administrators were similar in their profile; their behavior, however, was different. Pfund (1985) suggested that these differences were due to differences in values.

Although values and value systems are stable and resistant to change (Rescher 1969; Rokeach 1973; Williams 1979), education may influence professional values in fisheries managers, but little direct research has been conducted on the subject. Royce (1984) implied that there was a biased view in the education of fishery biologists. Kennedy (1986) and Kennedy and Mincolla (1985) found that young fisheries-educated employees of the U.S. Forest Service were more passionately motivated in selecting their profession than were forestry or range management-trained professionals. They also suggested that a fishery biologist's view of professionalism is primarily a heroic individual effort of pursuing truth, testing it with data and peer review, and gaining immediate acceptance and approval.

Values may change during an individual's career and lead to conflicts between various levels of managers within an organization. In the early career of a fisheries biologist who is low in the organizational chain of command, values may have developed from a particular university education. This might lead to selection of objectives that place emphasis on the ecological aspects of the fishery

(e.g., maintaining a relatively large population to ensure high recruitment in the event of optimal spawning conditions). This might be in contrast to later years in a career of increased responsibilities, after the same biologist is forced into situations requiring him to weigh one value against another. In these later years, the manager may recognize that the short-term economic health of fishermen or political needs must be addressed, or to "survive" in the organization, emphasis might be placed on values that weigh more heavily towards social or economic goals than towards conservation goals. Schoning (1984) gives just such a personal account of changes in his view of fisheries management. Such changes lead to conflicts within an organization between relatively young fisheries managers and those in more senior positions. For example, depending on how strongly held the young manager's values are, he may go outside the normal chain of command in an attempt to influence the final decision. He may even organize others within the organization to form an ad hoc group to influence a decision so that conservation goals rather than social or economic goals are emphasized.

Conclusions

An organization of people is intended to serve some human purpose and operates under the internal environmental influences of individual and group values and the needs of people within the organization. The external environment of society's social, political, technological, and economic values and pressures also influences an organization's operations. Successful management requires meeting expectations of both the internal and external organizational environments. If managers make a suboptimal decision to focus unduly on only one of these two environments, the other will in some manner compensate and create an ineffective organizational outcome. A common management action that typifies a suboptimal external focus is to set very broadly stated goals, without supporting objectives, that accommodate the values of many diverse external groups. Managers—claiming victory along the way—then spend inordinate amounts of time and limited resources to manage a diffused effort toward these unspecified outcomes. We contend that fisheries management suffers from this common management error.

If fisheries managers recognize the roles and dynamics of goals, objectives, and values in fisheries management, they can better focus limited organi-

zational resources for more effective management of fishery resources. We have called attention to what we think are the key components of fishery management's most critical management problem: the noticeable lack of rational goals and objectives, and the recognition of the effect of diverse value systems on the entire process. Presently, goals and objectives of fisheries management programs are most often so general and stated in such terms that almost any outcome could be categorized as successful or unsuccessful by any number of internal or external groups representing diverse value systems. The point of this paper was not a recommendation of a specific approach to management, but a call to recognize that clearly defined goals, measurable objectives, and acknowledged values are necessary components of effective fisheries management.

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