

Integrating Social Values into Fisheries Management: A Pacific Northwest Study

ABSTRACT

This article summarizes responses from program leaders and managers in fisheries management to a questionnaire requesting information about the use of social and community values in decision-making. More specifically, we investigated to what extent managers in the Pacific Northwest region know about and incorporate the social values of commercial fishing communities, the means by which they obtain their information, and the barriers to obtaining viable information for use in decision-making. In this pilot study, decision-makers and managers indicated that they have frequent contact with fishers and members of the coastal community, but the type of information they receive, and lack of trained personnel make it difficult to integrate the information into decision-making. Significant differences of opinion regarding the use and integration of social and community values information in decision-making also exist among our respondents. Without structural changes within management agencies that increase capacity to elicit values information from community members and standardize methods for evaluating, interpreting, and integrating the information into management plans and decisions, it is unlikely that community values information can be effectively used by managers in their planning process.

Shayla B. Sharp Denise Lach

Sharp is a doctoral student in the Forest Resources Department of the College of Forestry, Oregon State University, Corvallis and can be reached at Shayla.sharp@orst.edu. Lach is co-director of the Center for Water and Environmental Sustainability and an assistant professor in the Department of Sociology, Oregon State University, Corvallis.

The unique character of the fishing industry, its national importance, cultural significance, and economic capacity are all reflected in the social aspects of federal fisheries policy. For more than 200 years, federal policies have sought to take into account the significance of the commercial fishing industry to fishing communities and society as a whole. However, social issues are not easily integrated into management plans. Although there have been anecdotal discussions regarding the importance of integrating social and community values information in decision-making, there is little evidence of systematic efforts to collect and use this kind of information. The amended Magnuson-Stevens Fishery Conservation and Management Act (M-SFCMA) formally recognized the need for examining social characteristics of fisheries. However, few personnel who have a direct role in decision and policy-making have the expertise or experience to do so. Without a framework to obtain, identify, interpret, and integrate social and community values information into fisheries management decisions, the data collected about communities and their values regarding natural resources have limited usefulness.

The term "fishing community," as referred to in the Sustainable Fisheries Act (SFA), is defined as "[A] community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs" (PL-104-297 §102). Moreover, the SFA requires, through the National Standard 8, that conservation and management measures take into account the importance of fishery resources to fishing communities, and to minimize adverse impacts (PL-104-297 §106). A fishing community,

however, is not just about fishing or economics. For fishers (those in the occupation of fishing), those employed in fishing-related occupations, and non-fishers in coastal communities, fishing and ocean resources also represent expressions of social and community values (Cordray and Cramer 1999; Sharp 2001).

Understanding and incorporating the values that fishers and non-fishers associate with fisheries resources should have a direct bearing on the management of this natural resource. Public participation is one way in which community values and social concerns can be included in the management process. Currently, for example, if there is a proposed rule, the public is given an opportunity to review and comment on any impact they consider to be important (CRS 1995). However, interpreting and incorporating the concerns received from community members and fishers into management decisions becomes difficult if the public's value system is unclear or unknown (Kennedy and Thomas 1995). Furthermore, regional meetings, an important opportunity for face-to-face discussions, are not always held locally or even in coastal communities, therefore, geographic distance can become an immediate barrier to interpersonal communication in the decision process.

Most data collection and current monitoring programs used by managers focus on quantitative data to assess the effects of current and potential fishery management measures (PFMC 2000). For example, fisheries managers frequently use stock assessment measures to calculate populations of fish and the amount of landing or "total allowable catch" (TAC) in order to set fishing seasons, limits,

and re-estimate populations. These nationally-used measures, however, have long been criticized as limited, inaccurate, or incomplete (Acheson et al. 1998; Darm 2001; Moore 2001). The use of these and other technical assessment measures for decision-making results in management policies with direct impacts, not always favorable, for the fisheries, fishers, and fishing communities. In many regions, the knowledge and experience of fishers and fishing community members is considered "anecdotal" (Hall-Arber and Pederson 1999) and difficult to integrate into technical decision processes such as the TAC. With careful collection and evaluation, fishers' knowledge may be just as rigorous as the use of stock assessment measures or other empirical data. We argue that information from fishers should not be marginalized, but rather incorporated and formalized into the larger picture of resource decision-making.

In traditional management schemes, fishers have lacked a direct role in decision-making, and the process generally excludes fishers' perceptions and community concerns (Couper and Smith 1997). Townsend and Pooley (1995) emphasize that alternatives to traditional management should directly involve fishers in decision-making. In less traditional schemes such as co-management, opportunities are provided for fishers and members of a community to participate in the management process. Co-management can also provide formal mechanisms for integrating fishers' perceptions and community values in managing the resource. In this process, decisions for management and conservation of marine species are shared among members of the fishing industry, the fishing community, and fisheries management. Government involvement in fisheries management is considered a necessity to ensure fair and equal access to common pool resources, for fair distribution of fishing and income opportunities, and because the administrative resources to execute and enforce policy are available (Jentoft 1989; Kaplan 1998; Acheson and Taylor 2001). Involving the fishing community in the regulatory process can "legitimize" the process, with any resulting regulations more likely to be accepted and enforced (Kaplan 2000). While some researchers agree that traditional management systems have not worked well, they suggest that co-management schemes have also resulted in a system that produces significant conflict among fishers, and between fishers and management (Jentoft 1989; Couper and Smith 1997; Acheson and Taylor 2001).

If too little authority is given to fishers, for example, or if there is reluctance to participating in co-management, then the process can fail (Acheson and Taylor 2001). Competing interests among fishers also have created co-management difficulties. Controversy over distribution of resources, failure to work together effectively, and

emphasis on private rather than collective interests has created significant problems for fishers. Jentoft et al. (1998) concluded that those with an interest in the management process include many factions of a community (e.g., fish processors, fishers, consumers, fishers' families, etc.) and their collective interests are better served if they are part of the process. However, if too many groups are involved it is likely that the process will be difficult to maintain and achieve success.

Although co-management can bring fishers to the decision table, participation rates vary as do participation skills (Hanna 1995). Communication within the fishing industry and between different fishing groups, for example, is often contentious. Competing interests and lack of trust often complicate strategies for effective communication within the fishing industry, and between fishers and management (Conway et al. 2002).

This article summarizes responses from fisheries managers and decision-makers about the use of social and community values information, and the barriers that exist in obtaining and linking that information to natural resource decision-making. Opinions about the role of commercial fishing and the role of community in fishery management are also documented.

Methods

Data for this article were collected through semi-structured interviews (phone and in-person), and a mail survey. We conducted semi-structured interviews with eight key informants in February 2000. The sample for these interviews was not randomly selected, but rather purposive in order to obtain background information about the issues, concerns, and questions that managers in this field have about using public information in decision-making. An 8-page questionnaire was then designed and administered during March 2000. The surveys were sent to a sample of 100 fishery managers, decision-makers, and leaders in fishing organizations in the Pacific Northwest (PNW) region including Oregon, Washington, and northern California. Respondents were selected on the basis of job title, regulatory enforcement responsibilities, and direct involvement in creating fisheries policy. The survey materials contained the questionnaire, cover letter, and return postage-paid envelope. Four weeks after the initial mailing, a full set of survey materials with a revised cover letter and return postage-paid envelope was mailed to non-respondents in lieu of a postcard reminder. The survey followed the protocol recommended by Dillman (2000). Of the 100 surveys mailed, 5 were determined ineligible (undeliverable or person no longer in occupation). A total of 69 valid surveys were returned for a response rate of 73%.

The survey was divided into three sections: (1) the role of commercial fishing and community in fishery management for the regions affected by the decisions of the agency or respondent; (2) the use of community and social values information in decision making; and (3) general demographics. In addition, respondents provided significant information on the returned surveys in answers to open-ended questions. Of those that responded, 42% shared information concerning fisheries management issues, and complications in acquiring and interpreting community and social values information.

For purposes of confidentiality, we have excluded job title or description, or any other distinguishing factors to protect the identity of survey respondents. In some instances, management positions with distinctive job titles could potentially identify respondents. For these reasons we have presented the data in aggregate fashion.

Results

The questions selected for evaluation in this article comprise only a portion of those used in the entire survey. Here we focus on the issues and barriers to obtaining community and social values information in fisheries decision-making. Many of our respondents (70%) resided within a community directly affected by the agency or organization for

which they work. Of all respondents (N = 69), 75% were men, with an average age for both men and women of 47 years old. Most respondents (88%) had a 4-year college degree or higher, with more women (94%) than men (86%) having 4-year degree or higher. About one-half of our respondents had been in their present position for less than 6

years, 19% had held their position for 6 to 10 years, and 29% had been in their current position for more than 10 years.

We asked respondents if they have access to information about community and social values for those communities that are affected by decisions made by their organization or agency. Most (83%) reported that they did have access to some information. From a list that was provided (Table 1), we asked respondents by which methods they were most likely to receive information about community and social values.

An equal number (73.9%) indicated that they were most likely to acquire information from personal contact and the newspaper. We also asked respondents to consider how the information they obtain is given merit or can be substantiated (Table 2). About two-thirds reported that information is credible when it comes from multiple sources (68.1%), and that credibility is related to a verifiable source (65.2%).

Having access to community and social values information does not mean that the information will be used in decision-making, or that the information is correctly interpreted. Many managers responded to an open-ended question regarding barriers to getting information; most (65%) reported that there were barriers of some kind, and that taking time to evaluate the data (17.4%) stands out as the most significant issue (Table 3). Other barriers reported include missing or poor data on community and social values, geographic location or distance of meetings, and information that is received too late. Although different barriers were described, no strong consensus about the difficulties of receiving values information from fishing community members emerged.

Comments written on surveys and expressed in interviews provide more details about frustrations that managers have interpreting the messages they receive from community members and fishers. Respondents reported that they do not have the expertise to effectively interpret messages and information, and that some messages are too hard to understand because the issues are too complex. Typical comments include: "The type of information or lack of usable information makes it difficult. There is no real way to make useful connections with fishers and natural resource management," and "When things heat up, it gets real bad. I received lots of irrational messages." When specifically asked if there was someone in their agency or organization who has the expertise to integrate or interpret social and community values information for use in decision-making, over half (51%) of the survey respondents reported a "No" or "Don't know" response.

We received a range of opinions from our respondents about the usefulness of information from the general public and from fishers. At one end of the spectrum, a respondent reported that, "I

Table 1. Percent of responses indicating the most likely method of receiving community and social values information from a list provided (N=69).

Method	% of Respondents
Personal contact	73.9
Newspaper	73.9
Local meetings	63.8
E-mail	50.7
PFMC hearings*	47.8
Agency publication	46.4
Community meetings	44.9
Conferences	44.9
Television	33.3
Social gatherings	30.4
Professional journals	30.4
Supervisor	24.6
Other	17.4

*PFMC (Pacific Fishery Management Council)

Table 2. Responses to the question: What makes the information about community and social values credible (Does it have merit or substance)? List provided (N = 69).

Information comes from multiple sources	68.1 %
Source of information is verifiable	65.2
Manager knows individual personally	49.3
The problem was articulated clearly	47.8
Probability of solving problem is likely	14.5
Other*:	7.2
Letters and phone calls	
Information from colleagues	
Public meetings	
Team and advisory panels	
The public that attends meetings	

* Open-ended responses that could not be grouped into existing themes.

seldom know if the information is credible. I usually have to take it on faith that individuals are honestly reflecting expected impacts. I never have a representative sample of community views.” At the other end of the spectrum, a manager noted that, “We need to get fishers more involved with providing input. As managers, we do value their input - because of the diversity of views—they need to tell their story...”

Respondents indicated that they were moderately satisfied (51%) with information about community and/or social values that they currently receive, while 15.9% reported that they were only partially satisfied or not satisfied at all (Figure 1). One respondent commented that “even though Magnuson [Stevens Act] through National Standard 8 says the PFMC [Pacific Fisheries Management Council] and other councils need to incorporate community impacts into their decision-making, none of the councils have done well at engaging/utilizing this analysis.” Only 4.3% of respondents reported that they “often” attain infor-

mation in a timely manner, while none indicated that they “always” do. Similarly, a low percentage (18.8%) reported that they “often” integrate information into decisions while 4.3% indicated they “always” do.

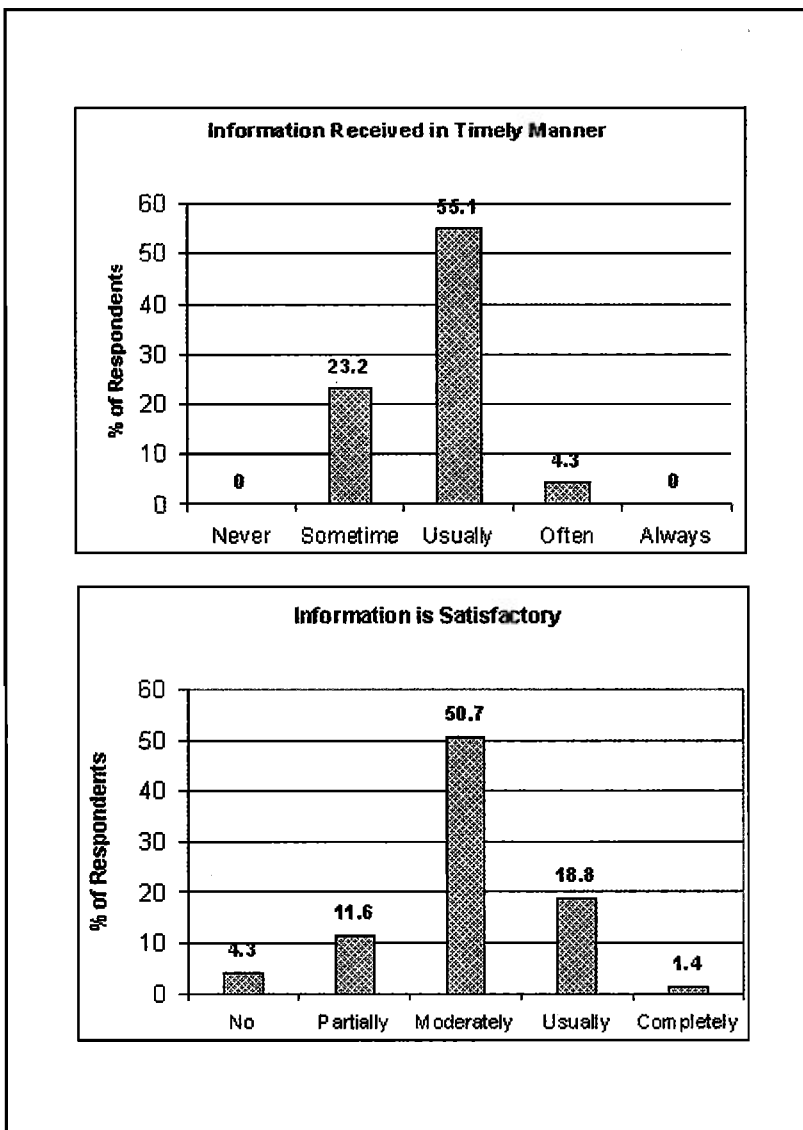
More than half of the respondents believe they need more community and social values information (58%), while a quarter indicated that they did not know if their organization or agency needed more information. When asked how often they themselves talked with people in the community about concerns regarding commercial fishing, 25% said infrequently or never, 35% reported daily, and 25% reported weekly. Although many managers have somewhat frequent contact with community members, most reported that they need more information, and it is not clear how that information will be used, obtained, or who will be responsible for interpreting the data.

We found that our respondents held a variety of viewpoints about whether social and community values information is helpful in decision-making.

Figure 1. Timeliness of social and community values information that managers receive rated on a scale of 1 to 5 in which (1) is Never and (5) is Always; and, if the information received is satisfactory ranked on a scale in which (1) is No and (5) is Completely.

Table 3. Survey results indicating the barriers to receiving social and community values information. If there were barriers involved, respondents were asked to indicate their perceptions of the issues involved. Answers represent written in responses. (N = 69).

Are there barriers to receiving community and social values information?	
Yes	65.3 %
No	30.4
Don't know	1.4
No response	2.9
If YES, what are they?	
Takes time to evaluate data	17.4 %
Missing/poor data on community and social values	7.2
Information received too late	5.8
Geographic distance is a problem	4.3
Need more public response	2.9
Problems are different for each community	2.9
Information gets filtered too much	1.4
Objective scientific data are absent	1.4
Lack of fishery management options	1.4
Not enough staff to evaluate information	1.4
Information not shared in office	1.4
Miscellaneous*	14.5
* Miscellaneous category was non-specific and could not be grouped into themes.	



Some respondents cited lack of information and personnel as a constraint to utilizing and obtaining information as expressed here by one respondent: "State and federal agencies need to acquire baseline data and employ trained personnel to assist fishing managers in the interpretation of data." Another respondent however, expressed a completely different viewpoint: "Resource agencies are not trained nor charged with the sociological implications...this is the job of human resource agencies and politicians..." The survey results were less equivocal about the value of this information with about 70% reporting that it is at least moderately important, with another 12% reporting it as extremely important. Yet even though more than half of all respondents indicated that they need more information about social and community values and believe that it is important, less than half (45%) reported that any information they receive is usually integrated into management decisions. One respondent wrote, "Incorporating community values in resource management is difficult because most Oregon coast communities have multiple and often conflicting value sets."

The majority (90%) of respondents believe that the information they receive does have an impact on the decisions made, however the impacts vary as indicated by the range of responses received (Table 4). The highest percentage reported for any single specific impact, was the "modification of fish regulations" (28%). From our survey results there is no consensus among respon-

dents how information can be better utilized for decision-making.

Although most respondents are at least moderately satisfied with the information they receive through personal contact with community members, they recognize that they lack the expertise to evaluate and/or use the information. Written comments from respondents revealed sig-

nificant differences of opinion about the use and value of social and community values information. The following comments from respondents reflect the range of concerns they have about dealing with social and community values information in fisheries management:

"Decision/policy making should be based on sound biological data. Sometimes residents (local) don't understand the biological data and a lot of decisions are based on emotions not facts. It would appear that there is a lack of communication between professionals and locals prior to decision making."

"Fish management bodies need socio/economic data to understand the social/political/

economic impact of their decisions. Classical social data are almost entirely missing from the current process. University, faculty, staff should be encouraged (funded) to work on these problems."

"We should not let community and social values of state residents dictate harvest regulations, although it should be taken into consideration. The general public has a history of allowing over harvest of natural resources."

Respondents indicated that the information they receive has some impact on the decision-making process in various ways, but few indicated that those impacts were geared toward increasing or improving public involvement, or acquiring useful information about community values. Although most respondents reported that social and community values were moderately to extremely important, ways to incorporate information is generally lacking in the existing decision-making process. While some community information does have an impact on decisions, the range of responses further indicates that it is not clear how that information can be used or who will be responsible for interpreting the data.

Discussion

Hanna (1995) suggests that for management processes to be equitable across fisheries, the process should be representative of those who have a stake in the fisheries. While the amended M-SFCMA formally gives recognition to the need for examining the social characteristics of fisheries, this study suggests that the analytical frameworks and resources to collect, interpret, or integrate such information in decision-making processes are lacking. And the 1995 Report for Congress on the "Social Aspects of Federal Fishery Management," concludes that "...in the role of development, collection, and evaluation of such statistical, biological, economic, social and other scientific information...does not require a representative from the social science field" (CRS 1995:7). Inclusion of fishers and community values in decision-making will likely occur only through hiring (or training) specific personnel with the capacity to elicit, interpret, and integrate social and community values information in policy and fisheries management decision-making. The issues identified by our respondents suggest that without these types of structural changes within management agencies to improve the consistency of communication, evaluation, and the role of community data, fundamental change is unlikely to occur.

Concerns about current traditional management include applying quotas and management restrictions that create incentives for fishers to exhaust resources, only partial success in maintaining fisheries, and decisions that are not representative of community members with a


Table 4. How information about community and social values has impacted decisions. Answers represent written-in responses. (N = 69).

Modified fish regulations (policy)	27.5 %
Meet community needs	8.7
Our agency is required by law to review public comments	2.9
Locals can advise on projects	1.4
Managers allowed over harvest from political pressure	1.4
Fish hatcheries continue to operate	1.4
Informing the public	1.4
Miscellaneous*	37.7

* Miscellaneous category was nonspecific and most responses could not be grouped into themes.

vested interest in the fisheries industry (Jentoft 1989; Hanna 1995; Townsend 1995; Couper and Smith 1997). Co-management may be an alternative to traditional management practices, but issues of competing self-interests, lack of skill and willingness to participate, and long-term adversarial relationships are problematic as noted earlier. Current co-management strategies are not enough if competing self-interests undermine the process. Traditional methods of management will be insufficient if there is mistrust among industry groups and if decisions are not representative of all stakeholder interests. Clarifying the understanding of fisheries managers' expectations for, and abilities to elicit and use, community and social values for integration into decisions and policies is clearly a first step in improving capacity to respond to the mandates of National Standard 8 of the amended M-SFCMA.

We contend that consensus and collaboration from all stakeholder groups must emerge if improvements in the current system are to be realized. Any attempt at realizing the benefits when all stakeholders collaborate in unison to build consensus in addressing policy issues will be confounded if stakeholders remain entrenched in current prac-

tices. This approach may require a paradigm shift by all interest groups. To achieve this, we propose a "collaborative-consensus based" approach, which includes key stakeholders for the purpose of mutual joint decision-making, policy analysis, and planning. This approach will require skills and resources to build capacity (e.g., communication, consensus-building, etc.) so all stakeholders directly affected by decisions can participate and succeed. Without the investment, however, the knowledge and experience of all participants—managers, fishers, and fishing communities—will not be accessible to policy and decision-makers in any meaningful way as they struggle to find workable solutions. 

Acknowledgments

This research was funded by a grant from Oregon State University Sea Grant College Program, no. R/SD-03-PD. The authors would also like to thank the reviewers for their suggestions during the editing of this manuscript, and the decision-makers, program leaders, and managers for their participation in our survey.

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