



Does membership matter? Individual influences in natural resource management decision making



Sean Pascoe^{a,*}, Catherine M. Dichmont^b

^a CSIRO Oceans and Atmosphere, Dutton Park, Brisbane 4001, Queensland, Australia

^b Cathy Dichmont Consulting, Sheldon, Queensland, Australia

ARTICLE INFO

Keywords:

Management advisory committee
Stakeholder preferences
Multiple objectives
Decision making

ABSTRACT

Increasingly, natural resource management decision making is being undertaken by management committees that consist of a range of stakeholder groups. Representatives on these committees potentially have widely differing objective preferences. Consequently, there exists the potential for management decisions to be affected not only by the type of representation, but by the individuals themselves. In this paper, the robustness of management decision making to both the stakeholder representation and the individual representatives is tested using the case of fisheries management, for which a number of studies have been undertaken in Australia to assess objective preferences within a multi-objective framework. The results suggest that, in most cases, management decisions are robust to membership, but in a small number of instances the actual composition of individuals in a committee may result in different decisions.

1. Introduction

Stakeholder participation is becoming increasingly embedded in national and international environmental and natural resource management policy, as managers recognise the need to understand who is affected by their decisions, and consequently who will aim to influence their outcomes [1]. While this is partly in recognition that stakeholder, and the community in particular, approval is necessary for developing social licence to operate [2,3], stakeholder participation also brings other benefits to decision making. In many cases, decisions are made under conditions of imperfect information and uncertainty [4], and stakeholder input into the management decision process helps to improve the perception of legitimacy of the outcome in the light of this uncertainty [5]. Further, stakeholder participation is helpful in the co-production of knowledge, as stakeholders have experience and understanding of the system that may go beyond that available to the managers and scientists [6,7]. Hence, while stakeholder participation complicates the strategic decision-making processes, it also increases the likelihood that the managers will be able to develop effective and acceptable management options [8].

Stakeholder participation has been particularly recognised as important in a wide range of environmental and resource management decisions e.g [9,10]. Fisheries management decision making as used an example for this analysis. There is a long history of stakeholder involvement in fisheries management, with it seen as a critical

component of management success [11]. While there are many models of co-management, ranging from consultation only through to full self-management, the model that has developed mostly in Australia [12], North America [13], Europe [14] and many other regions of the world is that of government, industry and other stakeholder participation in management advisory groups.

While these systems have generally been considered successful, the focus of previous studies has largely been on the process rather than outcomes [15–17]. In contrast, the decisions, and how decisions are made, under co-management have rarely been examined e.g [18]. Concerns have been raised about the potential adverse influence of self-interested stakeholders on management outcomes in some cases e.g [19–22]. Studies of individual stakeholder objective preferences have also generally found substantial variation both within and between stakeholder groups, which may influence their preferred management option depending on the expected outcome of each e.g [23]. Potentially, the group decisions under co-management may differ from one group to the next based on the combination of individuals in the group, even if the groups have common representational structures.

In this study, the potential impact of heterogeneity in stakeholder preferences on the outcome from a set of hypothetical management advisory committees is examined. Using data collected across several objective preference studies in Australia [23–25], the influence of how committee membership may affect management decisions, and how robust these decisions are to the individual representatives on the

* Corresponding author.

E-mail address: sean.pascoe@csiro.au (S. Pascoe).

committees is tested. Three types of potential influences are considered. First, the impact of incrementally adding different types of stakeholders to a committee is considered. Second, management committee structures currently used in Australia and the US are simulated. Finally, an all-industry committee is simulated, representing self-management. Before this, the outcomes of the previous studies on objective preferences are summarised, highlighting the between and within group heterogeneity.

2. Variation in stakeholder objective preferences between and within groups

Stakeholder representatives on management advisory groups are individuals with potentially different views around the relative importance of different management objectives, and hence may value outcomes of a particular management option differently. While their views largely reflect those of the group they are representing, individuals within this group will have differing strengths of opinion about the relative merits of different outcomes from management.

Several studies have been undertaken in Australia in recent years to assess different stakeholder groups' priorities in terms of potential social, economic and environmental outcomes from fisheries management [23–25]. These include studies of all Commonwealth fisheries [25], the Queensland east coast trawl fishery [23], and a range of fisheries (including inshore, offshore and recreational fisheries) in the southern waters around Tasmania, southern New South Wales and Victoria [24]. The data from these studies, all undertaken using the same methodology (the Analytic Hierarchy Process (AHP) [26])¹ were pooled to provide a larger cross section of preferences for the triple bottom line objectives.² The number of individuals within each stakeholder group in each survey is presented in Table 1. The relative importance of social, economic and environmental objectives (i.e. objective weights) were elicited for each individual.

The within and between variability in stakeholder objective importance from the pooled results of these previous studies is illustrated in Fig. 1. From Fig. 1, Environmental objectives were generally of highest importance for the environmental NGOs and scientists (who provide stock assessment advice). Economic objectives were considerably more important for the commercial fishers and economists than other stakeholder groups, while social objectives were most important for social scientists and recreational fishers. However, in all cases, there was considerable variability within each group, and the overall distribution in preferences for each objective for each stakeholder group overlapped to some extent. For example, while social scientists had the highest median preference score for social objectives, some social scientists had a lower preference score than some commercial fishers (who as a group had a lower median preference score for social objectives).

3. Simulating decision making in fisheries management

Fisheries management in Australia is largely undertaken in consultation with industry and other stakeholders. In many cases, and particularly at the Commonwealth fisheries level (i.e. for fisheries managed by the Federal Government), this is undertaken through management advisory committees. Similar approaches are undertaken

¹ The AHP involves a series of bivariate comparisons, where two objectives are compared at a time. From these, the relative importance weighting of each objective can be determined. Full details of the methods used are presented in each of the case studies identified.

² Different sub-objectives were found in all three studies, although the hierarchical approach of the AHP required all studies to assess the objective preferences at the higher level before considering the more detailed lower level objectives. The two latter studies also identified a series of governance objectives. These were removed and the remaining social, economic and environmental objectives re-scaled to provide a comparative set of priorities.

Table 1
Number of survey respondents from each group with preference information.

Stakeholder group	Commonwealth fisheries survey [25]	Queensland fisheries survey [23]	Southern fisheries survey [24]	Total representatives
Managers	17	24	16	57
Commercial fishers	12	19	17	48
Recreational fishers	7	10	9	26
Scientists	12	0	18	30
Economists	8	0	2	10
Social Scientists	7	0	2	9
Environmental NGOs	6	23	0	29

elsewhere, such as the Regional Fisheries Management Councils in the USA, and the Regional Advisory Committees in the European Union. While the ultimate responsibility for final management decisions of these committees varies, at the least the committee provides advice to the final decision maker as to the preferred management option.

Given the variability between stakeholder groups in terms of preference for different management outcomes, it is conceivable that the composition of these committees in terms of stakeholder representation may influence the choice of preferred management decision. Further, given the variability in preferences within stakeholder groups, then it is possible also that the final committee's position depends not only on the stakeholder groups represented, but also the combination of individuals representing the stakeholder groups.

To examine this, the decision making process for a hypothetical committee with different types of membership was simulated. A set of potential management options are presented to the committee (Table 2), each involving an improvement in one objective, no change in a second and a deterioration in the third. That is, each option involves an explicit trade-off in the outcomes.³

These are assessed in two ways. First, a management committee is incrementally constructed with additional stakeholder groups joining at each stage. The aim of this is to see how composition of the committee affects the preferred management option. Second, committees based on the Australian Management Advisory Committees (MACs) structure and those of the US Regional Fisheries Management Councils are simulated as examples of more realistic committee structures.

3.1. Sequential committee membership in a hypothetical committee

Membership of the committee is drawn randomly from the set of individuals that participated in the previous studies, each within a pool of similar stakeholders (Table 1). The membership of the committee is also developed sequentially, starting with fisheries managers, then industry members, scientists, environmental NGOs, economists and social scientists. The latter are not generally included in Australian fisheries management advisory committees, but there is growing interest in including social aspects into decision making in Australia at all levels of government (with many States having loosely defined social objectives) [27,28].⁴ Recreational fisher representatives are not

³ This is potentially artificial, as in most cases it is expected that management options can be derived that can produce improvements in all three objectives, but to differing degrees. Often, both economic and environmental objectives can be improved simultaneously, although these are usually at the expense of social objectives. A potentially infinite range of possibilities can exist in terms of how these might vary. In contrast, the chosen set of management options are a discrete and finite set.

⁴ Others have also suggested that social scientists must be viewed as a necessary and permanent part of such groups [29].

Download English Version:

<https://daneshyari.com/en/article/5118064>

Download Persian Version:

<https://daneshyari.com/article/5118064>

[Daneshyari.com](https://daneshyari.com)