Developing Better Public Policy to Motivate Responsible Environmental Behavior- An Examination of Managers' Attitudes and Perceptions Towards Controlling Introduced Species

DEVELOPING BETTER PUBLIC POLICY TO MOTIVATE RESPONSIBLE ENVIRONMENTAL BEHAVIOR- AN EXAMINATION OF MANAGERS' ATTITUDES AND PERCEPTIONS TOWARDS CONTROLLING INTRODUCED SPECIES[1]

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ABSTRACT

This paper examines the application of public policy and associated social marketing to programs designed to control an environmentally harmful introduced species in Australia. Managers involved in dealing with the issue identify a range of factors that contribute to the lack of success of existing control programs. The results suggest that there needs to be a broad-based integrated program that incorporates changes in stakeholders' attitudes as well as governmental resources and support for implementation of relevant initiatives.

INTRODUCTION

When addressing issues of concern public policy makers seek to develop what they believe is the most appropriate policy, In some cases, however, policy makers allocate the responsibility for the implementation of the policies to regulatory authorities who sometimes are unrelated to the policy unit and may in fact have different foci (Chilton 2000, Papazafeiropoulou et al 2002). While such an approach reflects the varying scope of each regulatory body, an overall lack of coordination might negatively impact on the ability of overall policy objectives to be achieved (Polonsky et al. 2001), which might also result in ineffective consideration of all stakeholders' interests.

The multi-dimensional nature of public policy requires that a wide range of stakeholders are involved in development of policy, as well as in its implementation. Any failure to include these groups and their interests will potentially impede the success of policies (Altman and Petkus 1994, Buurma 2001, Gregory and Keeney 1994, Hastak et al. 2001). Some authors have gone so far as to suggest that the only way to truly tackle large macro issues is through broad based collaboration (Gregory and Keeney 1994, Lober 1997, Sharma et al. 1994).

Coordination amongst stakeholders is even more critical given many of the activities that governmental bodies seek to regulate, deal with broader societal marketing types of outcomes and thus implicitly involve a complex and sometimes competing sets of stakeholders and interests. For example, governmental policy regarding restricting smoking is often translated into social marketing campaigns designed to limit consumption of various consumers as well as encouraging retailers to comply with regulations regarding the marketing and sale of cigarettes, while on the other hand other governmental units are assisting or subsidising tobacco growers. Any public policy that does not understand and consider all stakeholders' interests will most likely not result in appropriate regulations, policies and/or social marketing campaigns. That is, governmental activities will not bring about the desired social outcomes (Buurma 2001, Hastak et al 2001), i.e. the reduction of smoking in the example above.

The idea of involving various stakeholders' interests in policy development involves building what Hastak et al. (2001) called a policy mandate. Other authors have referred to this as identifying collaborative windows of opportunity (Lober 1997), where all parties realise focus on one broad-based societal objective, which is the ultimate goal of much public policy. Only through multi-party collaboration can complex social and public policy issues be addressed, requiring all parties to contribute to designing appropriate solutions. Lober's (1997) collaborative window perspective is important for it is only through multiparty action that the ultimate societal aims can be achieved. As such, public policy must consider all aspects of the issue of concern if a comprehensive solution is to be developed. The omission of some parties or partial action on the part of some parties may also result in a free-rider problem, where one group benefits without contributing to the solution (Nason 1989).

The free-rider problem is especially prevalent in the environmental area where the harm and benefit extends well beyond those directly involved (See Hole 1994 and Walls 2001 for examples).

In addressing broad social-types of issues, public policy makers need to examine a range of alternative solutions to address issues of concern (Hastak et al. 2001), as there are a variety of potential solutions. The evaluation of alternative solutions (as well as the effectiveness of any resulting policy) must include input from all stakeholders, of whom public policy makers are only one. Such an approach is also consistent with Buurma's (2001) view that public policy needs to be focus on the consumer or customer whom is impacted by the policies. It is therefore valuable to have stakeholder input in all stages of the public policy process (see Figure 1).

Place Figure 1 Here

The problem of defining, developing, implementing and evaluating public policy is even more complex, when parties involved frequently have a different view on the core issue of concern, as well as on mechanisms (i.e. policies) that will most appropriately address the issue of concern (Altman and Petkus 1994, Gregory and Keeney 1994). Reaching consensus amongst all stakeholders is further complicated by the fact that within a given stakeholder group there is frequently not a unified view amongst group members (Polonsky et al. 2001).

Stakeholders' knowledge and their attitudes of the issues associated with the issue, as well as their attitudes toward the alternatives that have been used, are examined. Hastak et al. (2001) has suggested that marketing research can be effectively used to understanding these (i.e. knowledge, attitudes and perceptions of

policies) and as such can greatly assist in public policy development, implementation and evaluation. A better understanding of stakeholders existing knowledge, attitudes and beliefs on the issue and existing policy should allow for more effective and integrated policy to be developed.

The objective of this paper is therefore to examine how customer-type stakeholders view public policy activities related to controlling an environmentally harmful introduced species in Australia (the importance of this issue is discussed in the following section).

CONTROL OF INTRODUCED SPECIES

Globally humans have impacted on the ecological balance in numerous ways, with extensive publicity frequently being given to the harm associated with human consumption as well as production. Some of the issues identified as being problematic include;

- Global warming due to the production of greenhouse gases,

- Acid Rain resulting from burning high sulphur coal,

- Biodiversity issues associated with over consumption of species and/or deforestation of rainforests or old growth forests.

While not receiving the same publicity, the negative environmental impact resulting from introduced species (plant and animal) has also received attention in various countries. These species can impact on the natural environment in a number of ways. For example:

- A local environment might not have predators of the introduced species and there is unrestricted population growth of this species, which in turn harms the environment. For example in Australia increased numbers of

wild rabbits, pigs and goats result in reduction of native vegetation, which in turn results in increased erosion.

- Introduced species "consume" native flora and fauna. For example, in New Zealand cats consume many native bird species that have not traditionally had to deal with effective predators. Alternatively introduced species may simply be heartier and force out native species (for example some introduced plants grow more rapidly than local plants and prevent native plants growing).

Even though issues associated with introduced species are less publicised than other environmental issues on the world stage, the associated environmental problems are no less severe than those caused by production and consumption activities. For example, it has been suggested that in one Australian state wild rabbits, which were originally introduced by European settlers, cause more than one hundred million dollars in harm every year (Tehan 1999) and have a substantial long-tem negative effect on the natural environment. In particular they negatively effect native vegitation, cause and excellerate soil erosion, and indirectly negatively impact on water quality (Environment Australia 2002)

Governmental bodies have attempted to control rabbits by using a range of costly initiatives (Carr 1995), with each alternative solution have varying degrees of support from non-governmental stakeholders. Some of the initiatives that have been tried include; the introduction of diseases into the introduced species population, trapping and poisoning programs, as well as broad based educational programs related to alternative control mechanisms (Coman 1994, Williams 1995). Unfortunately, in most cases these control programs have been fragmented across areas and as such do

not necessarily develop effective long-term solutions (Harrison 2000) for dealing with introduced species such as rabbits, which are exceptionally mobile. The problem (i.e. rabbits) simply move when one local environment becomes too hostile as the result of eradication campaigns.

Many stakeholders including governmental bodies and landowners are keen to control this introduced species, as they realise the significant potential future harm that will arise from an uncontrolled population growth (Reeve and Black 1993). As such, one could suggest that a collaborative window of opportunity or that a policy mandate for action exists (Hastak et al. 2001, Lober 1997). While this may be true, the divergent stakeholder interests mean that each group views policy options differently and thus it is unclear if an uncoordinated public policy approach will satisfactorily address the issue.

This study examines attitudes and behaviors of some of the stakeholders related to the control of one introduced species. Understanding these attitudes and perceptions will allow more effective public policy to be developed (Van den Ban and Hawkins 1996).

SOCIAL MARKETING

Extensive academic and applied work has been undertaken to examine how governmental bodies can use marketing to bring about more responsible corporate and consumer behavior (Kotler and Roberto 1989). Kotler and Roberto (1989) define social marketing as "a program planning process that promotes the voluntary behavior of target audiences by offering benefits that they want, reducing barriers they are concerned about, and using persuasion to motivate their participation in program activity"(p.24). It is beyond the scope of this paper to discuss social marketing in

detail. However, it is important that we link social marketing and public policy, for as was suggested earlier, governmental action is frequently designed to bring about improved social outcomes. For example, Hastak et al. (2001) overviewed how US environmental marketing guidelines in fact brought about a change in corporate activities that allowed consumers to make better consumption decisions by having more accurate (i.e. less misleading) environmental information. In this way public policy had a social marketing focus, even though it was not traditional viewed as a social marketing activity. The view that public policy itself is marketing also lends itself nicely to the social marketing view, as this is designed to bring about voluntary changes in various stakeholders' behavior such that more effective public policy is developed and implemented (Buurma 2001).

Social marketing campaigns, like all marketing activities, rely on an understanding of stakeholders' attitudes and motivations in regard to the issue of concern, as well as towards the desired modified behavior or lack of behavior (for example, giving up smoking). Rothschild (1999) has broadened the factors that need to be considered in social marketing to examine targeted stakeholders' motivation, opportunity, and ability to undertake the desired actions (Rothschild 1999). He suggested that understanding these three issues (motivation, opportunity, and ability) will allow government and others to develop appropriate strategies that will to bring about changes in stakeholders' behavior. In examining public policy development it could therefore be suggested that is important for regulators to understand stakeholders' motivation, opportunity, and ability in relation to dealing with the issue of concern. This in turn should hopefully enable policy makers to identify areas where existing activities are deficient or more effective marketing of policy needs to be undertaken.

METHODOLOGY

To identify stakeholders' views towards public policy issues related to the control of an introduced species, a variety of qualitative and quantitative research approaches were used. The qualitative stage identified the core issues to be examined in the research and was guided by an advisory committee comprised of stakeholder representitves with interest in controlling introduced species. This group comprised; government officials, land managers and environmential/science community members.

The first step of the process involved a review of the literature which was then used to assist in defining the domain of issues associated with controlling introduced species. A limited number of studies were identified that had previously examined stakeholders' attitudes towards dealing with controlling pests or introduced species (MAFNZ 1996, Reeve and Black 1993, Sheppard and Urquhart 1991). To ensure that all core issues were examined a series of four stakeholder focus groups were undertaken. The first group involved representatives from the various regularatory bodies involved in developing public policy while the other three groups were comprised of land managers who where primarily responsible for the implemention of public policy initatives related to controlling the introduced species in question. In total, 24 regulators and 47 land managers were involved in interviews and various focus groups.

The notes and transcripts from the qualitative phase were reviewed to identify common themes raised within discussions (Kellehear 1993, Miles and Huberman 1994). The examination of themes is frequently used when evaluating qualitative data. Based on the themes identified in the literature review, and the qualitative research, a

number of survey items were developed that allowed the examination of critial issues associated with control of the introduced species. A preliminary questionnaire was reviewed by the project steering committee and other regulators. Following this process the preliminary questionnaire was pre-tested with a sample of 50 land managers.

The survey items were then refined into a 60 item instrument supported by a number of categorical questions. The survey was administered via phone to a random sample of 566 land-managers in a region, of one Australian state, particularly affected by the introduced species. Land managers were chosen as the focus of the survey as their activities were impacted by the introduced species and they were also often expected to implement the various public policy alternatives developed. As such they had a solid understanding of the issues associated with introduced species, as well as with public policy initiatives directed at controlling this species. In the survey respondents rated each item from one to ten, with one representing a low degree of importance and ten indicating a high degree of importance of the item. This scaling method was selected because of its suitability in telephone surveying.

Given that the objective of the project was to identify attitudes toward the issue and public policy solutions (i.e. control activities), the work was somewhat exploratory. The survey data was analysed using Factor Analysis to refine the items and define the constructs (Hair 1999, Malthora et al. 1996). These would then assist in better understanding managers views on the issue and their attitudes towards the various public policy solutions that where being implemented. This resulting information could then be used to better develop public policy activities (Hastak et al. 2001) and/or to better market these recommended outcomes (Buurma 2001).

ANALYSIS

Qualitative Phase

Three broad themes were identified from the four focus groups and the secondary sources. These related to community responsibilities, program implementation issues and governmental responsibilities.

Community Responsibilities

Land managers felt that given the mobility of the introduced species it was essential that all land mangers in a defined area should be required to participate in programs, as non-compliance would reduce the overall potential for success. Managers also felt that the general community must also play a part in controlling the introduced pest. General community support was seen to be problematic, as some of the populace believed that the introduced species had "rights", even though it was introduced, and thus oppose some mechanisms used to control these introduced species.

Program Implementation issues

There were a range of factors that managers felt impacted on their implementation of control programs. These covered issues such as the diversity of appropriate techniques, limitations in financial support, uncertainty related to the effectiveness of techniques, the time involved in dealing with the issue and uncertainty regarding the regional severity of the problem.

Governmental issues

The last broad area identified from the focus groups, related to concerns relating to the various governmental bodies involved in controlling the problem. Participants generally had a negative attitude toward organizations that developed and implemented policy and generally did not support the land managers' activities. Land managers suggested that there should be mechanisms for dealing with non-compliant land mangers. This issue related back to the view that control of introduced species required all stakeholders to be involved.

Quantitative Phase

The quantitative phase involved developing an instrument containing 60 items relating to these issues that were integrated into a survey administered via telephone to 566 land managers randomly selected from a governmental list of land managers in the area. The representativeness of the sample was evaluated by comparison to Australian Bureau of Statistics demographic data, and was confirmed as satisfactorily representing the population of interest.

The 60 items were factor analysed to identify themes within the variables (see Table 1). The factor analysis produced 11 factors, all with Eigen values greater than one, which accounted for 64% of variance. The factors were shown to be reliable, with all having a Conbach's Alpha greater than 0.6. The researchers and steering committee felt that the factors reflected broad issues identified in the qualitative phase, which would be anticipated given that the items arose from focus group discussions. As can be seen in Table 1 the number of factors identified within groupings varied from two for Community issues to five for implementation issues. In all cases the mean value of the composite factor was greater than 5 (i.e. higher than the mean value of the scale) indicating a high degree of perceived importance. As

such land managers appear to see all issues as important and believe that Public Policy/social marketing programs need to be broad-based in their scope to comprehensively deal with all issues & stakeholders. This would suggest that Hastak et al. (2001) are correct in suggesting that all stakeholders need to be involved across the phases of the public policy process. The implications of these results will be discussed further in the following section.

DISCUSSION

As was mentioned above, the analysis of the survey revealed that managers generally agreed with those interviewed in the qualitative phase and believe there are three main areas of concern. As such any public policy and associated social marketing campaign needs to have a comprehensive broad based approach including a diverse range of stakeholders and must not focus on only one aspect of activity (Rothschild 1999, Polonsky et al. 2001). That is simply attempting to change attitudes of a given stakeholder group without providing resources or some underlying rationale may be unlikely to achieve the overall desired change, at least in relation to controlling introduced species.

There was a strong view that controlling introduced species is not just the responsibility of participating land managers. As such it could be suggested that public policy needs to include a complex network of stakeholders, including the general community and governmental bodies. Such a view is widely suggested in relation to controlling any externality or social problem (Polonsky et al. 2001) and applies to this type of issue as well. The implication of this is that while introduced species directly harm landowners, others in the community must also assist with controlling these species as well, or at least the community needs to be supportive in

regards to those dealing with the issue. While not identified in the research, there are extensive examples in the popular press of where the community has protested the eradication and control programs of introduced species, as being inhumane or unnecessary. In many of these cases public opinion has dissuaded those involved in controlling these species to act. Thus, some policy activities might be designed to gain broad-based community acceptance for control programs, by focusing on the harm caused by unchecked population growth of introduced species, in addition to focuses on individual managers actions.

The greatest number of factors identified related to managers views on implementation issues associated with public policy. As with all marketing activities, successful implementation is critical for programs to be successful, and thus more effective marketing and proscriptive regulation might be warranted (Buurma 2001). The factors identified a range of areas that need to be considered in public policy and social marketing programs. This appears to suggest that within the control of introduced species there needs to be an integrated approach that not only communicates information on dealing with the problem, but also provides support with undertaking the activities suggested. In this way social marketing may better deal with Rothschild's (1999) problems of motivation and ability, i.e. getting people to want to change and giving them the tools to change.

There were four factors identified in relation to dealing with the government. These relate to the use of traditional social marketing for promoting changes in behavior and to implementation issues identified earlier. The fact that approaches for dealing with this problem, by governmental bodies and others, are fragmented might partly have resulted in stakeholders' lack of confidence in the ability of governmental bodies to facilitate the control of this introduced species. The fact that different

signals are given and/or insufficient support for implementation is provided, also would contribute to managers' negative attitudes towards governmental intervention/assistance. There was some concern that many land managers were voluntarily participating (or not participating) in control programs and this might result in the perception that some stakeholders are acting as free riders, as frequently occurs with externalities. As such, there are enforcement issues that may need to be re-evaluated in line with stakeholders concerns, as the free rider problem in relation to introduced species (i.e. rabbits) is more problematic given their rapid ability to self-generate. For example,

Given rabbits ability to procreate regulation of key stakeholders (i.e. land managers) may be required. However, any regulation will only be effective if the regulators have sufficient resources to police behavior. It is unclear if politicians who fund regulators will provide these resources. As such, public policy may need to involve both carrots (potentially in the form of social marketing) and sticks (i.e. penalties for non-compliance) appropriate to ensure all parties act.

CONCLUSIONS

Controlling introduced species is a critical environmental issue within many countries and threatens bio-diversity in some regions of the world. As such it is essential that government assist in dealing with this issue through a range of public policy programs that include social marketing activities and regulated behaviour.

The results of this study suggest that there is a view by stakeholders that an integrated approach to addressing the problem is essential. The issue requires broad-based public policy development that involves using command and control systems as

well as relying on voluntary exchange motivated by social marketing. This is not to suggest that social marketing cannot play an important role in the issue but it is unlikely sufficient on its own.

The importance of dealing with free riders, in relation to land managers who do not control rabbit populations on their properties is also an issue that needs to be more effectively considered when dealing with a self-regenerating introduced species. Failure to develop an effective solution or one that is not adopted by all stakeholders will result in the problem reoccurring, that is rabbit numbers will be reduced in one year, only to increase a few years latter. As such dealing with free riders is potentially even more important than in other situations where the harmful species does not regenerate so quickly.

The cyclical nature of the problem is an issue that was not identified in the research, but is one that makes public policy more complex. How do public policy makers develop programs, regulator and social marketing, that deal with problem issues, which arrise periodically? This is not just a concern in regards to self generating species. For example, dealing with water shortages is something that may impact on nations periodically. In these cases there is that will also may make dealing with this issue more also means that public policy may need to

Figure 1
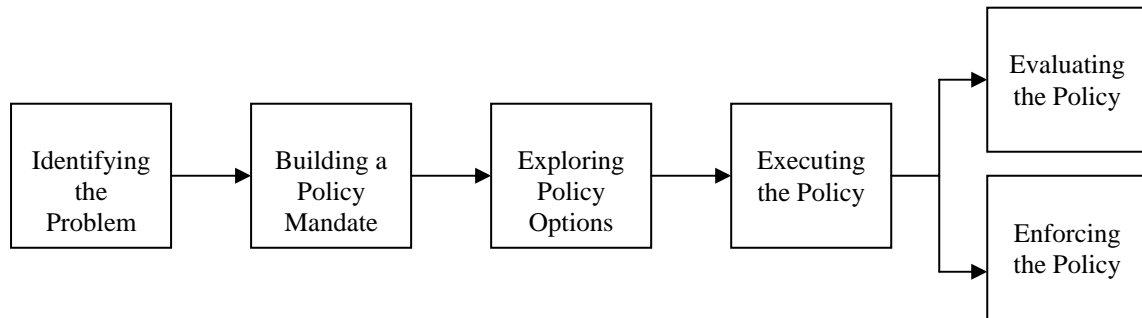The Policy Process (Adapted from Hastak, et al 2001 p.171)

| Identifying the Problem | → | Building a Policy Mandate | → | Exploring Policy Options | → | Executing the Policy | → | Evaluating the Policy |
| | | | | | | | → | Enforcing the Policy |

Table 1: Factors and Means

Factors	No. of Items in Factor	Means	Cronbach's Alpha
Community Responsibilities			
Community commitment	7	8.4	.72
Neighbours	3	6.6	.72
Implementation issues			
Control techniques	12	7.3	.71
Budget priorities	6	7.4	.61
Presence of species	5	7.3	.61
Time availability	3	6.9	.66
Relative control of species	2	6.0	.83
Government related issues			
Attitude to Controlling body	6	6.8	.82
Sources of support	4	5.3	.72
Negativity to Government	4	7.0	.62
Non-compliant landholders	2	6.2	.70

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