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Investigating Social Marketing, Benchmarking and Public Policy Development in Environmental Management

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Abstract

This paper discusses, an application of social marketing relating to pro-environmental awareness and social change. The integration of consumer behaviour theory into social marketing has been highlighted in the literature as requiring greater attention. 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 behaviour or lack of behaviour. The study highlights the marketing paradigms of benchmarking and social marketing in a not for profit governmental environment. Serrated Tussock has been designated as a weed of national significance and therefore the program has national implications (Thorp 2000). 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. Weed control is a widespread problem facing individuals, communities and governments at all levels. A triangulatory approach, involving three distinct phases and incorporating both qualitative and quantitative tools, was used for the research design. The qualitative phase involved focus groups and in depth interviews with landholders, focus groups with professionals in the field and a focus group of key stakeholders. The mail survey resulted in a representative sample of 608 usable responses from the infestation area. The research conducted in this study illustrates how the various stages in the social marketing process were achieved and recommendations consistent with social marketing theory were generated.
Keywords

Social Marketing, Public Policy, Benchmarking, Environmental Management.

Introduction

The integration of consumer behaviour theory into social marketing has been highlighted in the literature as requiring greater attention. (Kotler and Zaltman 1971; Rothschild 1979; Kotler and Roberto 1989; Andreasen 1995) Further, Kotler and Roberto (1989) have suggested that social marketing is a viable vehicle for the development and communication of strategies related to social behavioural change. The traditional approaches of marketing and in particular, consumer behaviour, are integrated into a social change framework that utilises advances in communication technology and marketing applications to facilitate desired outcomes.

This paper discusses an application of social marketing relating to pro-environmental awareness and social change in a semi-rural context.

Literature Review

Extensive academic and applied research has been undertaken to examine how governmental bodies can bring about more responsible pro-environmental behaviour. (Reeve 1993; Pieters, Bennett 1996, Bijnol et al. 1998; Beedell and Rehman 1999). Attaining a high level of natural resource knowledge produces improved pro-environmental behaviour than those individuals who express pro-environmental feelings alone (Rokicka 2002). Social marketing and public policy, are frequently used as part of governmental action in order to bring about improved social outcomes (Kotler and Roberto 1989). For example, Hastak et al. (2001) overviewed how US pro-environmental marketing guidelines had allowed consumers to make better consumption decisions through more accurate that is, less misleading, environmental information. In this way, public policy had a social marketing focus, even though it was not traditionally viewed as a social marketing activity. The view that public policy itself is marketing also lends itself to the social marketing view, as this is designed to bring about voluntary changes in various stakeholders' behaviour such that more effective public policy is developed and implemented (Buurma 2001; Altman and Petkus 1994).

Social marketing campaigns, like all marketing activities, rely on an understanding of stakeholders' attitudes and motivations with regard to the issue of concern, as well as towards the desired modified behaviour or lack of behaviour (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 bring about changes in stakeholders' behaviour. In examining public policy development it could therefore be suggested that it is important for regulators to understand stakeholders' motivation, opportunity, and ability in relation to dealing with the issue of concern. This in turn should enable policy makers to identify areas where existing activities are deficient or more effective marketing of policy needs to be undertaken (Polonsky, Carlson and Fry 2001). It is with this in mind that this study has been undertaken.

Benchmarking is one way of identifying and understanding the approaches and practices required to set and reach new goals (Voss, Ahlstrom and Blackmon 1997), that will lead to superior performance and create a long-term competitive advantage (Camp 1989). Benchmarking is the search for industry best practices against which organisational performance may be evaluated (Pryor and Katz 1993). The four critical steps of benchmarking are planning, analysis, implementation and review (Zang 2000). Identifying “best practice” would assist with
the design of more effective programs and result in a more efficient allocation of resources. Publicly funded programs that require individual and community participation need to be marketed with a view to optimising involvement and commitment of the various stakeholders (Carr 1995). This study is designed to contribute towards the benchmarking process, by identifying firstly the stakeholders (Elmuti and Kathawala 1997) and secondly, the attitudinal, knowledge and behavioural factors that impact on an individual’s willingness to perform towards a common goal (Perrin 1998).

Background

Weed infestations are a widespread problem facing individuals, communities and governments at all levels. Serrated Tussock (ST) is one of the most environmentally damaging weeds. It is a perennial, tussock-forming grass; it is a highly invasive, drought-resistant weed capable of out-competing many native and pastoral grassland species, often creating a species monoculture in densely infested areas. In 1958 Serrated Tussock was declared a noxious weed in Victoria; recognising the detrimental impacts that it has on natural ecosystems and agricultural industries (Cleland 2000).

The study was designed to provide key data required for quantifying and reviewing the achievement of the Victorian Serrated Tussock Working Party (VSTWP) Management Strategy's objectives and benchmarking the current situation. It was also designed to provide insights into the effects of the Serrated Tussock Management Program on the community and the effectiveness of the VSTWP in influencing the attitudes of land managers in regard to increasing the profile and importance of Serrated Tussock control as a land management issue (Cleland 2000).

In 1993 a community driven public meeting was convened to address the Serrated Tussock problem in Victoria; especially the threats it posed to Victoria's grazing industries and native grasslands if it were allowed to spread unchecked. From this meeting the Victorian Serrated Tussock Taskforce was formed and, in later years, this group became The Victorian Serrated Tussock Working Party (VSTWP). Serrated Tussock control has been researched, and reports compiled, with increasing magnitude since the 1950's. One of the most prolific researchers and writers on control measures has been Dr M. H. Campbell, who has published on the topic for over thirty years since it was first recognised as a serious weed problem in New South Wales (Campbell 1960, 1977, 1995, 1998)

Program publicity has relied on stakeholder groups and rural landholder organisations such as the Victorian Farmers Federation, Rural Industries Development Corporation, and CRC Weed Management Systems (Briese and McLaren 1999), Serrated Tussock Working Party and participants in the Corangamite Farm Forestry Project (Miller 1995,1998,1999). Their activities including conferences, field days, seminars and published reports provided information principally for landholders involved in rural production.

Numerous promotion activities co-ordinated and reported by the Annual Progress Reports of the VSTWP (Boyle 2001) also assisted in communicating the activities of those actively promoting awareness and control of Serrated Tussock. Although most of this publicity has been positive towards the program and used as a means of publicising the program, from time to time, negative reporting about the effectiveness of the control measures and the government’s lack of commitment have been discussed in the rural and urban press (Sellars 2002).

As awareness of the problem has increased, so too has the concern for the weed’s spread into other parts of Victoria (Nicholson, Patterson et al. 1997; Jeffery 1998). Economic modelling and estimations of the “future” cost of the weed to the community if not controlled have been reported and discussed (Morfe and Weiss 2001). The Serrated Tussock Program has fostered
key partnerships, with a wide range of stakeholder groups. Many of these partnerships involve integration of time and resources from a variety of stakeholders including Landcare groups, Greening Australia, Victorian Farmers Federation, local government environmental officers, private companies, and local environmental and river catchment groups. In addition, other intra-state government bodies such as Parks Victoria become stakeholders when public lands are involved (Drummond 2001). On a wider scale it is noteworthy that Serrated Tussock has been designated as a weed of national significance and therefore the program has national implications (Thorp 2000). Although 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 (Hamlin 2001). Weed control is a widespread problem facing individuals, communities and governments at all levels. The following study highlights the marketing paradigms of benchmarking and social marketing in a not for profit governmental environment.

Aim
This study focuses on the importance of applying a benchmarking process in the development of strategic options within this social marketing framework. This was identified in the literature review that also highlighted a significant problem that needs to be addressed with regards to managing an environmental problem. The specific research goals are to investigate the effectiveness of the social marketing program developed for the environmental control of serrated tussock and to benchmark data of landholders' attitudes knowledge and behaviour relating to this issue.

Methodology
A triangulatory approach, involving three distinct phases and incorporating both qualitative and quantitative tools, was used for the research design. The preliminary phase of the research encompassed an extensive review of secondary sources to provide insights into previous studies. Both internal and publicly available reports were used to source this information.

The second phase of the research process involved a qualitative phase to ensure that the dimensions, utilised in the quantitative phase, were accurate, representative and all encompassing. This qualitative phase involved two focus groups and in depth interviews with landholders, two focus groups with professionals in the field and a focus group of key stakeholders. In addition, many individual issues were explored using personal face-to-face and phone interviews with land managers and Department of Natural Resources and Environment (DNRE) personnel.

The third phase of the research process, or quantitative phase, involved a survey of landholders. The survey instrument was prepared after a series of scales to measure knowledge, attitudes, skill levels, aspirations and behaviours relating to tussock control were developed. The issues covered in these scales emerged as a result of the qualitative research undertaken in the preliminary and secondary phases. These scales focus on principal indicators and are used to present an overall measure of factors relating to Serrated Tussock control. The questionnaire was piloted with a cross-section of landholders before being finalised.

The sampling process utilised existing databases and information provided by DNRE and Landcare groups. The Serrated Tussock Control Priority Map was used to identify the sampling profile. A proportionate representative sample of the regions was obtained. The self-completion survey was administered by mail and included a letter from the Chairman of the VSTWP, a survey form and a post-paid return envelope. A representative sample of 1,500 landholders from the infestation area was mailed questionnaires. The survey achieved a 40.5% response rate N=608.
Results

The following section shows the results that highlight the major changes, provides estimates of the effectiveness of this social marketing program and the development of a benchmark for the behavioural changes in the landholders.

(a) Profile of Respondents

**Age**  The largest cohort of respondents (42%) were aged between 50-64 years, closely followed by the 35-49 year age group (33%), and the 65-79 year age group represented twenty percent of respondents.

**Landholding Size**  The survey obtained responses from a representative sample of small (36.4%), medium (42.9%) and large (20.6%) landholders.

**Duration of Land Ownership / Management**  The duration of which land has been owned and/or managed by the respondent varied between less than 5 and to over 30 years. A comprehensive representation of the various land ownership/management periods was covered.

**Living on Property**  Of the 589 respondents answering this question, seventy-eight percent stated that they lived on their property permanently.

**Primary Source of Income**  Eighty percent of respondents do not consider their property to be their primary source of income.

(b) Major Use of Land

Respondents were asked to select one or more major land uses for their property. Fifty-one percent of respondents selected livestock as one of the major uses of their property. A rural lifestyle was selected by thirty-eight of respondents as one of their major land uses, followed by hobby-farm (31%) and cropping (20%).

**Member of Landcare**  Seventy-four percent of landholders were not a member of a Landcare environmental group.

The following section provides an outline of the landholders' reactions to the engagement activities.

(c) Publicity

69% rate information supplied directly by DNRE Officers as useful.

59% rate DNRE publications, magazines and weekly updates as useful.

(d) Enforcement

54% agree that enforcement has been an effective means of controlling ST.

63% agree that stronger enforcement is required.

(e) Strategic Goal

53% disagreed that the goal of the 1995 ST Control Strategy had been achieved.

(f) Changes in landholders' knowledge, attitudes, skills and aspirations

30% increase in landholder awareness of where to access ST control information.

30% increase in awareness of Research findings, knowledge about ST control and obligations under the Catchment and Land Protection Act.
44% agree that DNRE activities have increased their ST control capabilities.

Over seventy-five percent of landholders view ST control as a high priority, understand the importance of co-ordinated control and monitor and control infestations on an ongoing basis.

61% agree that responsibility for ST control rests with the landholder.

85% agree that achieving ST control is a great personal achievement.

76 % feel they have let the community down if they fail to control ST.

(g) Practices that were changed as a result of the program

Program staff now working collaboratively with other DNRE sections in the main infestation areas and with key stakeholders such as Landcare groups, local councils, and Catchment authorities, in concerted effort to control ST.

Landholders carrying out renovation and re-vegetation works with specific stakeholder groups on projects that contribute to long-term management of ST.

The move from grazing to cropping activities on arable land has been strongly influenced by ST program activities.

There has been a rapid adoption of aerial spraying control strategies on non-arable and escarpment land.

(h) Changes in social, environmental and economic conditions generated by the program

Social

Landcare groups, other community groups and landholders have taken responsibility for ST control and management.

The VSTWP has become a key driver of land management and land-use change in ST infestation areas.

ST Management Model adopted by the Gorse (Weed) Management Task Force, South West Region and interstate programs.

Environmental

Heavily infested properties fell from 13.5% to 3.4% of landholdings 1995–2002 (Landholder survey estimate.)

40% of infested properties re-inspected post June 1999 found to be ST free (Boyle 2003).

Major landscape renovation projects occurring in fields of agroforestry, raised bed cropping, and re-vegetation of land.
Economic
Conservative estimates indicate:

$6.3m to $11.1m gross economic benefit generated by program 1995–2002
$11.8m to $15.7m gross benefit forecast for program 2002–2025 (Boyle 2003).

(h) Benchmarking behavioural change (Index of Eradication)

In order to more accurately quantify the change in behaviour, the level of infestation over the period 1995–2002 an index of eradication was computed as a weighted mean of four levels of infestation which ranged from zero infestation through to a dense covering (Less than 0.5 metres between tussock centres). The index ranged from 0 to 100 where 0 represented a dense covering as defined in above and 100 represented a zero level of infestation. Means and ranges of this index for landholdings over the period, 1995 through to 2002, are provided in Table 1.

This index provides an average measure of the overall degree of eradication, as estimated by sample respondents on their holdings.

Table 1: Change in Index of Eradication of Serrated tussock

<table>
<thead>
<tr>
<th>Time</th>
<th>0 to&lt;10</th>
<th>10 to&lt;20</th>
<th>20 to&lt;30</th>
<th>30 to&lt;40</th>
<th>40 to&lt;50</th>
<th>50 to&lt;60</th>
<th>60 to&lt;70</th>
<th>70 to&lt;80</th>
<th>80 to&lt;90</th>
<th>90 to100</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous</td>
<td>0</td>
<td>0</td>
<td>3.1</td>
<td>1.7</td>
<td>2.8</td>
<td>3.1</td>
<td>2.8</td>
<td>6.9</td>
<td>8.3</td>
<td>71.4</td>
<td>100%</td>
</tr>
<tr>
<td>(1995)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.3</td>
<td>0.3</td>
<td>2.8</td>
<td>4.5</td>
<td>13.1</td>
<td>79.0</td>
<td>100%</td>
</tr>
<tr>
<td>(2002)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

(\% of landholder survey respondents)

0 = Dense covering (Not eradicated) 100 = Zero level of infestation (Weed-free). (Figures based on landholder assessment of eradication area and density on their properties)

An examination of the frequency distributions of the index reveals a dramatic shift in the index over time with a reduction in the proportion of landholdings that have heavy eradications. Heavy eradications are indicated by the frequency of landholdings that have an Index of less than 70. Table 1 shows that the percentage of landholdings with a high Index has fallen from 13.5\% of landholdings to 3.4\%. This represents a reduction in the number of heavy eradications over the period from 'about 1995' until the present.

The mean for the Index has changed from 87.9 in 1995 to 93.5, for the current Index of Eradication. This indicates that the proportion of landholdings with no infestation and those with only light infestations has increased. There was also a decrease in the standard deviation from 19.6 to 9.8 also reflects the reduction in the number of landholdings with heavy infestations.
Discussion

This study highlights the use of social marketing in a program to overcome an environmental issue by a governmental agency. The publicity methods employed in the program have appeared to be effective as gauged by the landholders responses to the personal and printed information made available to them.

While a small majority felt that enforcement was an effective means of dealing with recalcitrant landholders and several more felt that reliance on this method should be increased, it has not been actively pursued by those responsible for managing the program. It should be noted that reliance on these means would place the program outside the realms of social marketing (Andreasen 1995).

While there have been small but significant changes in landholders' knowledge, attitudes, and skills, a major change has been in their aspirations for achieving control of ST and their level of community responsibility in this regard. This aspect is a major social change resulting from a social marketing program of this type. This is reflected in the changes in the social, environmental and economic changes from this program.

The measurement of the behavioural changes provides a further indication of the changes in landholders' practices. According to landholders, there has been a dramatic reduction in the proportion of landholdings that have heavy infestations and, an increase in the proportion of less severely infested landholdings. This is indicated by the both the increase in the mean for the Index of Eradication and smaller standard deviation for the Index. This measure provides a valuable benchmarking tool for continuing work in this area.

On a wider front, many agencies are faced with similar circumstances when confronted with a situation where a social change is deemed to be necessary. Changing attitudes and beliefs takes time and often the target audience may not even know they have a problem that needs fixing. To be realistic and plan a strategy, government agencies should recognise the stages an audience will go through before change is realised, the various stages may be identified as:

- Awareness of a problem
- Understanding the problem
- Agreement with the social marketing message
- Realisation of potential benefits that might accrue from the message.
- A change in attitude.
- The new attitude leads to change in behavior.

This process influences the focus of the social marketing effort that might be organised into three phases:

- Raise awareness.
- Change attitudes.
- Encourage action.

The question then arises as to what strategy is appropriate for a specific social change program in a specific population? This question was answered by considering the attitudes of respondents in the target market. Essentially respondent's attitudes were either positive or negative moreover landholders could also be either engaged or not engaged in the desirable activity, that is, serrated tussock control activities. Recognition
of these states leads us to the typology of strategy mix for achieving social change. This typology is shown in Table 2.

**Table 2 A Typology of Strategy Mix for Planned Social Change**

<table>
<thead>
<tr>
<th>Engaged in behaviour</th>
<th>Positive attitude</th>
<th>Negative attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cell 1</td>
<td>Cell 3</td>
</tr>
<tr>
<td>Reinforcement strategy</td>
<td></td>
<td>Rationalization strategy</td>
</tr>
<tr>
<td>Not engaged in behaviour</td>
<td>Cell 2</td>
<td>Cell 4</td>
</tr>
<tr>
<td>Inducement strategy</td>
<td></td>
<td>Confrontation strategy</td>
</tr>
</tbody>
</table>

Source: Sheth and Frazier (1981)

When attitude is positive and behaviour is present (cell 1) a Reinforcement strategy is needed, a strategy that will reward the land manager for their behaviour and encourage them to maintain a positive attitude. Similarly, if attitude is positive but behaviour is absent (cell 2) an Inducement strategy is needed. If attitude is negative and behaviour is positive (cell 3) a Rationalization strategy is required. Finally, if attitude is negative and behaviour is absent (cell 4) a Confrontation Strategy is required.

**Summary, Recommendations and Conclusions**

The recommendations that were made for action in this study represented a series of strategies based upon the typology illustrated in Table 2.

The results and findings outlined above led to the following recommendations:

Where Serrated Tussock seed set is imminent, all possible procedures such as, simplified enforcement and compulsory control should be mandated and expected. Where necessary, an "ombudsman" position should deal with any disagreements between the government and offending landholders, and reliance on law courts only be used to decide unresolved disputes.

An inclusion in Sale of Land contracts should identify the sale of landholdings with Serrated Tussock infestations.

A common procedure for mapping and identification of individual properties be adopted for control areas. Infested areas need to be clearly identified and accurate records maintained at least cost.

Landholders who are opposed to the use of chemicals being applied on, or in close proximity to their land for any reason, need to be considered when devising any future recommended control measures.

A comprehensive control program for control of all vermin and weeds is addressed in future planning. The singular weed approach used by the Serrated Tussock Program has alienated a number of conscientious landholders.

Awareness activities of the program should be continued, particularly those relating to research findings, control methods, enforcement procedures, the work of the VSTWP, and control responsibilities.

The research conducted in this study illustrates how the various stages in the social marketing process were achieved and recommendations consistent with social marketing theory were
In particular, it demonstrates that the benchmarking process establishes a basis for program evaluation and goal setting for public policy development. For without this objectivity relating to knowledge, attitudes, skill levels, aspirations and behaviours, social marketing program developers run the risk of being criticised by social marketing commentators such as Andreasen (2002) and Lefebvre (2001) who maintain that an extensive proportion of program failures can be attributed to this omission.

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