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ENCOURAGING SMEs TO PARTICIPATE IN THE MANAGEMENT OF COMMON POOL RESOURCES

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ABSTRACT In this paper we contribute to an understanding of how small and medium sized enterprises (SMEs) can be encouraged to participate in the management of environmental common pool resources. We do this by applying ideas from general theories about collective actions and, using evidence from interviews of people with experience dealing with SMEs, show how the ideas are relevant to SMEs. In line with previous research, we present evidence that communication is also necessary to help ensure SME participation. We conclude noting some evidence that suggests that local networks may contribute to successful management of global common pool resources.

KEYWORDS Small and medium enterprises, common pool resources, collective action, social networking, environmental resources, “green” policy, community partnership;

INTRODUCTION

In this paper the term common pool resource (CPR) is used to refer to a particular category of open access resources that includes many natural (environmental) resources. CPRs have two important characteristics: they are to some extent non-excludable and use of the resource suffers from subtractability (Ostrom, Burger, Field, Norgaard & Policansky 1999). Non-excludability refers to the fact that it is difficult to exclude individuals from using the resource. Subtractability (sometimes called rivalry) refers to the property that the use of the resource by one individual reduces the amount of the resource available to others.

The two characteristics of non-excludability and subtractability means that users acting in their own short-term self interest have an incentive to use the resource before others do. Thus, without rules to define rights and duties or to limit access to the resource, free riding, whereby individuals using a resource can avoid paying (in full) for the resource, is a likely outcome. If that happens the resource
will be overused with no contribution towards its maintenance (Ostrom 2007; Ostrom et al. 1999). This phenomena was highlighted by Garrett Hardin in his famous 1968 paper ‘The Tragedy of the Commons’: unless governments use regulations or assign property rights, CRPs will be consumed inefficiently and in some instances even destroyed. This is despite the fact that users would generally be better off if they collaborated to use the resource efficiently.

There is, however, clear evidence (see Ostrom et al. 1999) that even without regulations or property rights, ‘tragedies’ are not inevitable. There are mechanisms to encourage and support the necessary collective action. ‘Collective action’ here simply refers to the fact that the action (management of CPRs in this case) must involve the joint collaboration and cooperation of a group of individuals. Theories that help to explain how collective actions occur are known as collective action theories (CAT).

Although there are many mechanisms that groups of individuals can use to achieve collective actions to manage CPRs, the literature is quite clear that there is no silver bullet – the effectiveness of any mechanism depends on the nature of the resource and on the features of the group of individuals using the resource. In this paper we focus on SMEs and environmental CPRs; our aim is to show how ideas from CAT apply to these individuals and these resources. This is an important topic because SMEs collectively have a very large impact on environmental resources. For example, estimates indicate that they may account for approximately 60% of carbon dioxide emissions (Marshal Report 1998, p2) and approximately 70% of all pollution (Hillary 2000, as quoted in Revell, Stokes & Chen 2009). They have similar large impacts on many other types of environmental resources, local resources such as water or an unpolluted local environment and global CPRs such as a stable climate or clean air or an undepleted ozone layer.

Since our focus in this paper is SMEs and environmental CPRs, we do not attempt to provide an overview of the many collective action mechanisms that are known to work in various situations. (Interested readers are referred to Ostrom (1998)). Instead, we describe the mechanisms for which we have some evidence of the relevance to SMEs and their use of environmental resources. The selection of mechanisms is based on qualitative evidence, the source of which is described in the method
section below. Other collective action mechanisms, such as assigning property rights, may also be relevant but we limit our study to the mechanisms highlighted by our informants.

The rest of this paper is organised as follows. In the Method section we describe our informants, the nature of the interviews and the data collected, and the analysis technique. The following 4 sections (Direct Economic Benefits From Participating, Direct Economic Penalties (Costs) For Non-Participation, The Effect Of Reputation On Encouraging Participation, The Role of Leadership) each describe a particular mechanism (or related sets of mechanisms) that, on the basis of our evidence, seem to be relevant for understanding SMEs’ role in managing environmental CPRs. Each section provides a brief introduction to a mechanism before explaining its relevance to our understanding of SMEs’ roles in managing common CRPs. The following two sections (‘Information To Help SMEs Become Aware Of Their Environmental Impacts And The Cost And Benefits’ and ‘Social Networking’) present evidence related to findings of previous research that indicate that communication is an especially important ingredient in successful collective actions (Ostrom 1998). In the final section ‘Managing Global CPRs - A Possibility?’ we suggest the possibility that some of ideas presented in the paper might help in managing global CPRs, a very important special type of CPR.

**METHOD**

The findings reported in this paper emerged from a larger project seeking to identify strategies to encourage SMEs to reduce their environmental impact. This research was conducted in four rural areas, one urban area and one urban-rural fringe area in a single Australian state. We selected the areas because they had proactive environmental impact reduction strategies, or were planning to introduce such strategies.

In this paper we discuss findings that emerged from semi-structured interviews of approximately one hour with informants from two of the rural areas, which we have labelled A and B. The 14 informants were selected because they deal with a variety of SMEs on environmental issues. They came from a variety of ‘overseeing’ roles such as local government; managers of programs in local councils; representatives from local authorities; and representatives from environmental action groups. The
triangulation of sources (Maxwell 2005) provided insights into many issues influencing SMEs' involvement in environmental sustainability. However, a limitation of this study is that the views expressed are of observers and not those of SMEs. While this will be addressed in future research, this research is still useful because it provides a broad view of the approaches which informants have found can be effective at encouraging SMEs to reduce their environmental impact.

The interviews covered factual information about environmental sustainability issues for SMEs including the participant’s role and responsibilities relating to these; the key environmental players in the region; the types of advice and services available for SMEs; and the major economic and political changes relating to SMEs and environmental sustainability.

The analysis of the interview data incorporated a triangulation of observers (Neuman 2000) whereby the interviewer and another researcher independently analysed the transcripts. The analysis involved identifying common factors, searching for patterns, exploring these and establishing their applicability to environmental sustainability in an SME context.

It must be emphasised that we did not use CAT prior to the data analysis. Instead, it was only after the analysis was complete and the themes had emerged that we considered the applicability of CAT. In the next sections we describe the major themes and relate these to some key principles of CAT.

**DIRECT ECONOMIC BENEFITS FROM PARTICIPATING**

Users of a common pool resource will contribute to a collective action for management of the resource (rather than just using it themselves before others do) if the actual act of participation in the action brings sufficient enough benefit to individuals to cause them to participate rather than defect (Olson 1965). This benefit can sometimes take the form of tangible economic benefits, such as the cost saving from simply turning off lights. Benefits can also come from government-funded incentive schemes designed to encourage participation.

Our data and analysis showed that cost savings and other direct economic benefits are important motivators for SMEs. As one informant stated: “the best message seems to be, if you do this you will save money, you will save time, you will save, save, save and it’s better for you and your staff” (A02).
However, the matter is not straightforward - there are many issues involved with the cost-benefit calculations:

- **Time horizon employed by SMEs.** The cost-benefit calculations often involve future benefits to which SMEs apply a high discount rate, so that even if there are direct benefits the up-front costs are a major barrier. For example, one informant told us about a waste management initiative which had been used by one SME, but pointed out that few other SMEs had adopted the approach because “the $11,000 or $10,000 for the initial investment is a terrifying thought” (A06).

- **Lack of clear benefits.** In many instances the benefits are unclear to SMEs or the effort involved outweighs the potential benefits. For example, one informant noted: “at the end of the day from a monetary perspective there is not a lot of money to be saved in doing sustainability things in a business, really” (A04). The issues associated with a lack of clear or sufficient benefits are similar to those found by other researchers who have studied SMEs (Bradford & Fraser 2008; Revell & Blackburn 2007; Mir & Feitelson 2007).

**DIRECT ECONOMIC PENALTIES (COSTS) FOR NON-PARTICIPATION**

Users of a common pool resource can be encouraged to contribute to a collective action for management of the resource if their non-participation results in a direct economic cost. For example, government-imposed taxes or fines can encourage participation (Revell & Blackburn 2007). So too can a big player in an industry, or industry associations, who may be able to ‘force’ adoption of particular practices.

- **Regulations.** Our informants indicated that government-imposed regulations (and corresponding punishments for breaking those regulations) certainly affect SME behaviour: “If there is a regulation that says we have to do something, then they will do something about it” (A01).

- **Supply-chain pressure.** Governments and large businesses can also affect the behaviour of SMEs by insisting that they adopt particular practices “otherwise they don’t get the contract” (A05). Industry groups can likewise apply pressure by insisting that members adopt particular practices in order to gain membership. Our informants indicated that these types of pressure are important for SMEs. For example, a local government event organiser stated they required SME participants...
to adopt particular waste-management practices if they wanted to take part, adding that “They will usually only do as much as you are required to do” (B04). This is consistent with the findings of Gunningham and Sinclair (2002) that industry groups can encourage ecological improvements if environmental credentials become part of industry group membership.

THE ROLE OF LEADERSHIP

CAT suggests that leadership can have a positive impact on the level of participation in collective actions to manage CPRs (Bradford & Fraser 2008; Biondi, Frei & Iraldo 1998; Rowe & Enticott 1998, Dietz, Ostrom & Stern 2003; Lynch-Wood & Williamson 2007; Revell & Rutherford 2003). In many instances governments have recognised this, and in their quest for compliance have adopted collaborative, rather than punitive, approaches to drive compliance. For example, partnerships with local government and other local organisations are seen to be important for effective programs. As argued by other researchers (eg Ostrom 1998; Gerlak & Heikkila 2007), using existing groups and building on local leadership is especially important.

Many of our informants clearly indicated that ‘leadership’, particularly in the local community context, is an important issue. Informants from local councils stated that they had introduced programs within their organisation to demonstrate leadership to the local community. Other informants made it clear that local non-government leaders – local champions – are important. For example, there were various comments similar to “Whoever their Champion is, ...see if we can engage with them rather than us saying we are putting something on at the town Hall ...and [SMEs] saying... ‘oh here we go again” (A03).

THE EFFECT OF REPUTATION ON ENCOURAGING PARTICIPATION

Many previous researchers investigating collective actions have identified that the actual act of participation may improve the reputation of the participant in the eyes of other participants or others in the community (Harris 2007; Ostrom et al. 1999; Ostrom 1998; Besser & Miller 2001). For an individual this can lead to benefits such as more friends (to help out in times of need, if necessary) or better job opportunities. For a business, being seen as a good corporate citizen may attract customers
or lead to better relationships with employees – as Besser (2001) puts it “doing good is good business”.

- **Marketing – attracting customers.** Our informants provided evidence that ‘reputation’ is an important consideration for SMEs. For example, one informant from a local government tourist body indicated that they were able to encourage good practices by “giv[ing] people the green tick if they are an accommodation house that uses water saving initiatives and those sorts of things” (B03). A “green tick” was generally seen to be an important issue for SMEs dealing with consumers. One informant explained that a green marketing spin allows businesses to advertise “we buy 100% green power” on their window. Other informants referred to SMEs wanting to be seen as "Green citizens" and the importance of awards.

- **Reputation with significant others.** Previous researchers (e.g., Bimber, Flanagin & Stohl 2005) have identified that reputation can play an important role in groups with any significant others, not just customers. A number of our informants referred to the importance other business people, or other community members, friends and family - especially children. As one informant explained: “The kids come home and say to the old man what are you doing with that dad?” (A05).

In some instances, it was suggested that indirect benefits, such as might result from an enhanced reputation, can outweigh direct costs. For example, a number of informants referred to the fact that recycling can actually cost money: “It cost..., at the moment it costs more... often more to have recyclables picked up then have the waste go to landfill” (B06). However, informants suggested that some SMEs will still engage in actions to manage waste.

**INFORMATION TO HELP SMES BECOME AWARE OF THEIR ENVIRONMENTAL IMPACTS AND THE COST AND BENEFITS**

Previous researchers have found that SMEs often fail to take actions because they are unaware of their own environmental impact (Bradford & Fraser 2008; Drake, Purvis & Hunt 2004; Mir & Feitelson 2007). The present research also found this to be the case. For example, one informant reported a typical conversation they had with an SME:

“Well what happens to your waste?”
“Oh it just goes”

“Okay, well what contractor, who collects?”

“I’ve got no idea, it just goes and the accountant pays the bill” (A06)

Thus, clear information is needed to demonstrate the often significant impact of SMEs. This requires good evidence that the problem is serious (Gerlak & Heikkila, 2007). Similarly, many SMEs are not aware of any benefits they could gain from participating (or costs from not participation) in actions to manage CPRs, even when information about potential benefits or costs is available.

A number of our informants pointed to the fact that SMEs are often too busy to gather information relating to impact or potential benefits or costs. As one informant stated: “they don’t have the time to listen. They will not attend meetings, they just don’t have the time, time is their biggest factor, their biggest concern, just enough time to do what they need to do” (A02). As well as time, the amount of information can also be confusing for SMEs: “You know there's, systems out there, there’s a lot of companies that are... telling you information and it is very confusing” (B06).

SOCIAL NETWORKING

The key role played by communication, particularly face-to-face communication, in making collective actions (of all types) successful is well known:

... consistent, strong, and replicable findings are that substantial increases in the levels of cooperation are achieved when individuals are allowed to communicate face to face.

(Ostrom 1998).

Dietz (2005) makes it clear that communication at this level helps build trust: “Talk, it is suggested, builds trust and helps individuals anticipate the strategies of others”. The importance of social networking is also explicitly mentioned in the Garnaut Climate Change Review:

Information programs for households are more effective if they consider social and attitudinal issues and involve alternative communication techniques such as audits, community-based programs and diffusion through social networks (Garnaut 2008, pp. 408-9)
The above quote refers to households; the same logic clearly applies to small and medium-sized (particularly owner-managed) businesses.

Many informants referred to the importance of social networks and word-of-mouth communication in encouraging SMEs to reduce their impact on the environment. Many indicated that information provided via web sites, roadshows, newsletters, newspaper articles, circulars or emails are not particularly effective. Instead, a more common view among informants was that "drip feeding" information and, especially, direct personal conversations were necessary. As one of our informants stated: “a lot of businesses would sooner have someone come in, one to one, do it and help them do it” (A06). Informants also felt it was important for SMEs to trust the sources of information. The importance of local champions was mentioned previously, but informants also pointed to other trustworthy sources of information such as the government, government authorities, environmental groups and educational institutions. Informants highlighted the role of what some referred to as “umbrella groups” as a source of information - “groups for coordinating activities of small businesses” (B02) and included industry groups, trade associations and local groups such as chambers of commerce.

MANAGING GLOBAL CPRS - A POSSIBILITITY?

Following on from the previous section, it is particularly interesting that, although it is clearly understood that collective actions to manage CPRs work better if the group is small and that social networks at the local level can effectively manage local common pool resources in a sustainable way (Olson 1965; Ostrom, Burger & Field 1999), our informants identified that social networking may be also appropriate for managing global common pool resources. The sizes of groups that needs to be involved in any action to manage such resources may be up to about 6.8 billion (http://www.worldometers.info/), and we face very difficult problems in achieving collective actions of this magnitude. However, our informants suggested it might be possible to encourage participation of SMEs in the management of global CPRs if the SMEs are members of (local, small) social networks. As one informant put it “So for example businesses that would be working together (and it doesn’t matter where they are it could be in the packing industry or in the city or in a small town) if
there is some social connection between them they will tend to move together” (G03). Thus, it may be possible that (local, small) social networks (of SMEs) may contribute to meeting the challenges of managing global common pool resources (Ostrom et al. 1999). This obviously requires further research.

REFERENCES


