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Analysis based on New (and not so new) Institutional Economics

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ICAR Discussion Paper 19/2007

Discussion Paper

Institutional Change in Agriculture and Natural Resources (ICAR) Discussion Papers

Edited by Volker Beckmann and Konrad Hagedorn

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ISSN 1613-3455 (Printausgabe)
ISSN 1613-4862 (Internetausgabe)

Behaviours of Conservation Organizations and their Environmental Implications

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ICAR Discussion Paper 19/2007

December 2007

Abstract
This article draws mostly (but not entirely) on new institutional economics to consider the likely behaviours of non-government conservation organizations and the implications of these behaviours for biodiversity conservation. It considers how institutional factors may result in behaviour of conservation NGOs diverging from their objectives, including their support for biodiversity conservation; examines aspects of rent capture and conservation alliances; specifies social factors that may restrict the diversity of species supported by NGOs for conservation; considers bounded rationality in relation to the operation of conservation NGOs; and using game theory, shows how competition between NGOs for funding can result in economic inefficiencies and narrow the diversity of species supported for conservation. It also considers generally how the social role of conservation NGOs might be assessed.

Keywords: Australia, biodiversity conservation, bounded rationality, civil society, Common Agricultural Policy, European Union, Landcare, mixed goods, new institutional economics, New Zealand, NGO's, principal-and-agent problem, political acceptability
JEL classifications: Q00, Q2, Q5, Q57, Z13

Acknowledgements
This is a revised version of a paper presented at a colloquium of the Division of Resource Economics, Humboldt University Berlin in February, 2007. I wish to thank participants for their useful suggestions, Dr. Volker Beckmann for his particular contribution and Dr. Martina Padmanabhan and Jes Weigelt for their detailed comments on the earlier version of this paper. The usual *caveat* applies.

1 Introduction

Drawing mostly on aspects of new institutional economics, this article examines institutional factors that may influence the behaviour of non-governmental conservation bodies and their implications for biodiversity conservation. Principal-and-agent problems are shown to be relevant, the question of rent capture is discussed, and several influences on selection by non-governmental organizations (NGOs) of focal species for their conservation efforts (such as whether they favour species that are more human-like, or charismatic or which could generate significant local impact on incomes via tourism generation) are considered. The competitive efficiency of NGOs in securing funding for promoting the conservation of different species, as well as the possible impact of this competition on the extent of conservation of biodiversity, is examined using analysis based on the theory of games. It is doubtful if this type of competition is efficient in promoting biodiversity conservation to the extent achievable. Furthermore, the theory outlined indicates that the conservation strategies adopted by NGOs may not be cost-effective. However, drawing on views presented by Hagedorn (1993), it is argued that the role of conservation NGOs should not be assessed solely on their economic efficiency but the political acceptability of their contributions to policy should also be taken into account, as well as other factors. A multidimensional approach is required to assess the role of such bodies in society. Furthermore, even if the actions of NGOs are not perfect in conserving biodiversity, it may not be possible to create institutions that give superior results.

So far, there appears to have been little application of institutional economics to the behaviour of NGOs, such as conservation organizations, although there have been attempts by political scientists and sociologists to adopt institutional approaches to wildlife conservation as pointed out, for example, by Haas (2004). However, it seems likely that the theories, for example, of Niskanen (1971) about the behaviour of bureaucracies, aspects of the theory of games, theories of group behaviour as outlined by Olson (1965), Simon's views on administrative man (Simon 1961) and the new institutional economics championed by Williamson (1975, 1986) would be applicable. In addition, some aspects of old or traditional institutional economics appear to be relevant.

The purpose of the article is to explore the relevance of institutional economics to the behaviour of conservation organizations and to assess the predicted performance of such organizations in pursuing their conservation goals, giving examples where possible, and to consider factors that may restrict the ability of their strategies to conserve biodiversity. The

objective of the exercise is to explore theoretical possibilities as a first step towards further analysis and possible empirical work.

Conservation bodies are usually concerned with 'ensuring' the supply of environmental goods and avoiding the production of public environmental bads. The goods (or bads) concerned are usually shared by a considerable number of persons either partially or completely in contrast to private goods. These are commodities for which markets are missing or partially missing. Nevertheless, the goods involved are not necessarily pure public goods or pure public bads. Many are mixed goods (Tisdell 2005: 113-118). The activities of NGOs often generate social conflict in the case of mixed goods. This is because NGOs may try to limit or restrict the exploitation of these resources by those who want to use them as a private good. The aim of the NGOs is to benefit those who obtain utility from the resources as a collective good. For example, the efforts by Greenpeace and other organizations to stop whaling by the Japanese benefits those who collectively value the free existence of whale populations but brings Greenpeace into conflict with Japanese whalers and Japanese consumers of whale meat. Even when public goods or bads are involved there can be social resentment. For example, some members of the public may believe that NGOs lobby for excessive public funding of conservation projects in some cases.

The methods that NGOs use to contribute to the supply of public or quasi-public conservation goods are varied. They may, for instance, raise funds from the public (or their members) to directly provide the good, for example, a protected area; try to convince private individuals to supply the good and assist them to do so, and lobby governments to provide funds for the NGO's conservation efforts or persuade the government directly to supply the focal environmental good of interest to the NGO.

The Yellow-eyed Penguin Trust (YEPT) in New Zealand, for example, has as its prime goal the conservation of the Yellow-eyed Penguin (YEP) *Megadyptes antipodes,* which is listed by The World Conservation Union (IUCN) as an endangered species. To pursue its mission, the Trust raised funds initially from the public and was subsequently also able to obtain some funding from the New Zealand Government. This funding continues and the Trust has also obtained funding from some private companies. The Trust disseminates information about the conservation status of the YEP, engages directly in programmes to conserve it and has acquired a limited amount of land for the purpose of directly protecting this species. As well, it encourages landholders to covenant land (that is, ocean shore areas) suitable for the conservation of the YEP, gives landholders advice on the conservation of the YEP on their land, and so on. It also conducts research, has a small permanent staff, and

makes use of local volunteers in its activities. It is able to exert some political pressure on the government to ensure that its policies do not threaten the survival of the YEP. Thus, it performs all of the types of functions mentioned above.

While many conservation NGOs combine all these functions, not all do. Some for example, do not directly supply any environmental goods but merely act as political pressure groups, trying to influence public policy by lobbying and by the strategic dissemination of information. The Australian Liberal-National Party Government while in power in the early part of this century moved to reduce public funding for the latter type of institutions.

In this article I will consider in turn how the objectives of conservation NGOs may be influenced by institutional factors, the relevance of the bounded rationality of individuals to the activities of these NGOs, and how efficient they are likely to be in pursuing conservation objectives. This will be followed by a broader assessment of the social value of these organizations and some discussion of the relevance of traditional institutional economics to the evolution of conservation NGOs.

2 Institutional Factors and the Objectives of Conservation NGOs

Conservation NGOs, especially large ones, are liable to be influenced by principal-and-agent problems, of the type outlined, for example, by Perloff (2004: 689, 722). Emphasis on the importance of principal-and-agent problems in large organizations is by no means new. For instance, Berle and Means (1932) emphasized its importance in public corporations. They argued that shareholders have only limited control over the behaviour of the managers of public companies. This subsequently became the basis of many theories of the behaviour of business firms. It was argued that managerial goals modify the behaviour of business firms (Tisdell and Hartley 2008: Ch. 7). The members of conservation NGOs may be unable or unwilling to exert control over their administrators and employees for similar reasons (mostly the transaction costs involved) to those observed in the case of large public corporations. National and international NGOs may be particularly prone to the agency problem. Many members may find it too costly to attend annual general meetings and participate in decision-making by the NGO. The problem is likely to be less acute in the case of locally based community NGOs.

The larger the size and the greater the geographical spread of a conservation NGO, the more likely are agency problems to be present. The more likely too is its management to be in the hands of staff, many of whom may not be members of the NGO, or who may place their

personal interest above that of rank-and-file members. The agency problem implies that managers or staff of NGOs have some scope to pursue their own goals as distinct from those of the NGO.

Given the theory of bureaucracy as outlined by Niskanen (1971), and similar managerial theories of the behaviour of large public companies (Penrose 1959; Marris 1964) managers (staff) of conservation NGO might be primarily interested in the growth of their organisation and/or in obtaining sufficient funding to ensure its continuing existence. While some rank-and-file members of the NGO may also want this, the NGO's managers may be more inclined to compromise the conservation objectives of the NGO to obtain increased funds for their NGO.

They may, for example, form alliances with bodies mainly interested in economic development, either to obtain funds directly from these bodies or via a joint approach to government. The reason given for the alliance by the NGO's executive might be that with the alliance, the conservation NGO will have some influence on the nature of development but without the alliance it has none. Therefore, compromise is necessary to ensure that developers take some account of conservation. The extent to which this is really the case and how much compromise is necessary to ensure conservation influence is unclear. However, Figure 1 may help to illustrate some of the issues.

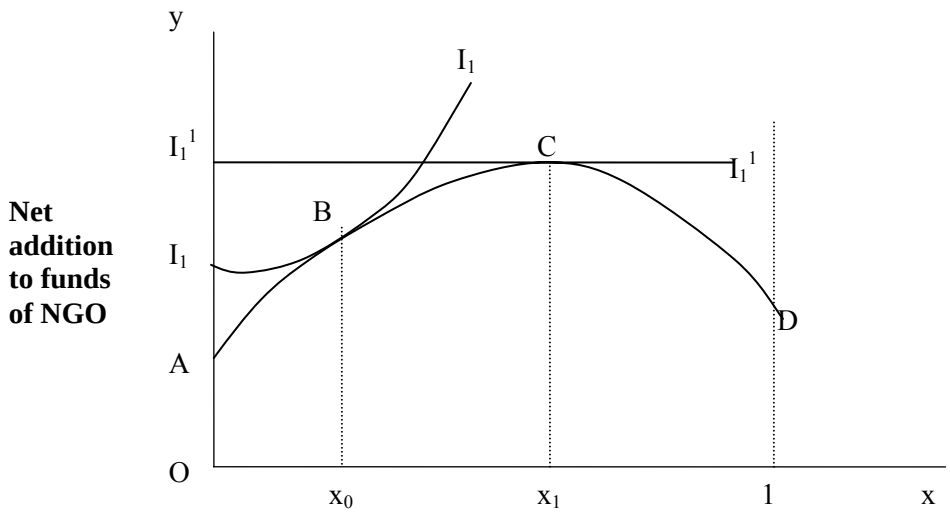

Figure 1: Compromise of conservation goals as an option for a conservation NGO

Source: own figure

In Figure 1, curve ABCD indicates the amount of funding that a conservation NGO can expect as a function of the degree to which it is prepared to compromise its conservation goals as measured by an indicator in the range $0 \leq x \leq 1$. This figure shows that the NGO can increase its funding by engaging in some compromise but will lose funds if it is too compromising. Probably in most cases, D is lower than A because a conservation NGO that is too compromising will lose its credibility as a conservation organization.

If the managers of the NGO act as Niskanen-type bureaucrats, they will favour the degree of compromise shown by x_1 because this maximises the funds available to the NGO. In effect, their indifference curves would be a series of horizontal lines of which $I_1^1I_1^1$ indicates one. If the members of the NGO are strongly committed conservationists, they may, however, favour no compromise and prefer situation A. Their preferences would be indicated by a series of vertical indifference curves (not shown) with situations further to the left being favoured. In large organizations, however, it is possible that situation C rather than A will prevail if the bureaucrats are merely interested in the amount of funding obtained for their organization. Because of agency problems, members of the NGO may not be able to control a large NGO's managers effectively. Of course, particularly in smaller and more localised NGOs where members can exert greater control over management, management may be unable to deviate so far from the conservation goals of the principals of the NGO. In moderately sized NGOs, it is possible that the 'effective' indifference curves are like those represented by I_1I_1 in Figure 1. This results in a degree of compromise corresponding to x_0 because the actions of the NGO's managers are restricted by its members. The situation has some similarities to that outlined by Williamson (1964) when developing the theory of behaviour of managers in public companies.

3 Rent Capture and Conservation Alliances

When public demand for conservation goods grows rapidly, this growth may generate possible rents for those engaged in the facilitation of their provision. An interesting question is who captures these rents? In some cases, it may be executives in conservation NGOs but it can also be public servants and to a lesser extent academics. Consider the following case.

The Australian Conservation Foundation (ACF), (a large conservation NGO in Australia) formed an alliance with the National Farmers' Federation (NFF) (a peak farmers' pressure group) in 1989 to promote the Landcare Programme. The aim of this project was to encourage farmers to take more care of their land for conservation purposes. As a result of their joint

approach to the Australian Government, these NGOs were able to achieve a large amount of government funding for the project, the Landcare Programme which is still continuing. Possibly the interest of the ACF in the project was to extend its range of influence and that of the NFF was to create a more favourable impression of the role of farmers in conservation. Since participation in the programme by farmers was voluntary and subsidised by the government, it was clearly quite acceptable to farmers. Whether or not the ACF itself expected to obtain more funding from the government or ensure continuing support for its funding from the government as a result of its decision is unclear but it is possible. The ACF obtains some funds from the government and private contributions to this NGO are tax deductible.

This alliance was very favourable to the Australian Liberal-National Party Government which wanted to partially privatise Telstra, a state-owned telecommunications enterprise. This plan was unpopular with farmers who feared that rural telecommunications services might suffer as a result of partial privatisation of this state enterprise. As a 'carrot' to farmers, the Australian Government announced that it would fund partially its support for Landcare from the funds obtained by the partial sale of Telstra. This move helped to placate farmers and was looked on favourably by conservationists.

The ACF gained virtually no control over the Landcare Programme. Most funds for the programme are channelled through government departments, mainly the Department of Agriculture, Fisheries and Forestry and are administered by the government. It is possible that public servants have captured most of the rents and the ACF obtained little, if any of those. Considerable red tape (transaction costs) appears to be involved in application for community funding under the programme and government bureaucrats may now be the main beneficiaries. The 'red tape' involved helps to keep public servants in employment. A further problem is that with strict accountability rules in the public service, much of the red tape may be difficult to eliminate. Thus, the original alliance between the ACF and the NFF has evolved in a way which may not have been fully envisaged by the partners when they proposed the Landcare Programme.

Similar issues seem to have arisen in relation to the European Unions' reformed Common Agricultural Policy (CAP). CAP has been reformed and continues to be reformed so that it is more environmentally friendly but the transaction costs involved in the new policy seem to be very high even though the actual transfers to civil servants for administering the scheme are not known. Although the World Wide Fund for Nature (WWF) was invited to participate in

the planning of the reformed scheme, it declined; possibly because it was afraid of being compromised.

Note that environmental NGOs are not being blamed for 'rent' capture by public servants. They may, however, be used strategically by public servants in the process of rent capture as 'pawns' in the game. If the public demands greater supplies of a particular environmental good, this provides scope for public administrators to capture a substantial portion of the public funding of policies to bring about that supply. Mechanisms for examining the cost-effectiveness of public administration appear to be weak. For example, the public (and even politicians) may have limited access to information about the activities of public administrators and market-type competition mechanisms do not apply.

4 Social Influences on the Selection by NGOs of Focal Species for Conservation Efforts – Factors Restricting the Diversity of Species Favoured

Conservation NGOs may favour promotion of a narrow range of species of wildlife for conservation. Metrick and Weitzman (1996, 1998) suggest that these are likely to be species that are more charismatic than others and of which the members are larger in size. It has also been claimed that humans like to favour the conservation of species that are more human-like than others (Plous 1993; DeKay and McClelland 1996; Gunnthorsdottir 2001) presumably because humans have greater empathy for these. This suggests a preference for mammals over other taxa and probably species with eyes placed forward on the skull.

While there is some support for these views (Tisdell et al. 2006), the situation is more complex than appears at first sight because there seems to be a high degree of social support for survival of some non-mammalian species, such as some species of turtles (Tisdell et al. 2005). In line also with the views of traditional institutionalists, there is evidence that social attitudes of individuals to the survival of different species of wildlife are to a large extent socially (culturally) conditioned (Tisdell et al. 2006). Furthermore, if portrayals of species (e.g., in folk tales and stories, cartoons) repeatedly emphasize or exaggerate the human-like appearance or qualities of species, they may alter human attitudes to them. Again, humans may prefer species that seem soft and cuddly - children prefer such objects. Some writers, therefore, argue that conservation NGOs excessively focus their conservation efforts on the conservation of charismatic species to the neglect of other species, e.g. keystone species that may be very important in relation to the maintenance of biodiversity.

In their defence, some conservation bodies argue that without an emphasis on flagship and charismatic species, they would collect a much smaller amount of funds which would adversely affect their overall conservation impact. Even though the outcome may not be optimal, it is the best attainable outcome, in the view of some NGOs, given the social circumstances. Furthermore, some of the species may be umbrella species and thus their conservation could result in the conservation of other valued species. This is because conservation of the habitat of the focal umbrella species also incidentally conserves other species.

Of course, not all conservation NGOs focus their activities on a single species. Some use charismatic species for fund raising purposes but are engaged in broader conservation activities. The World Wide Fund for Nature uses a single species to symbolize the WWF, namely the giant panda. It seems to be quite common for NGOs in their drives for donations to use a single charismatic species that has emotional appeal to the public. In some cases, the funds collected by the NGOs are 'fungible' and help conserve species that are not highlighted by NGOs in their promotion campaigns. There is little doubt that some conservation organizations exploit charismatic wildlife species to obtain funds for the organization itself. For example, an Australian study of funding for the conservation of the koala and the northern hairy-nosed wombat found that although the koala was not endangered that funding for its conservation was much greater than for the critically endangered hairy-nosed wombat (Tisdell and Swarna Nantha 2007). Reasons could be that the koala is better known to the public, it is regarded as more human-like, and it is a mixed economic good whereas, at this time, the northern hairy-nosed wombat is a pure public good and is less well known.

The koala is a mixed economic good because it is a private good in koala parks and zoos and is widely used as an icon for promotional purposes. Campaigns 'to save' the koala are likely to be supported by owners of koala parks and zoos, possibly partly to buy moral worthiness. In part, there may be bias of conservation bodies in favour of species that are mixed goods. By contrast, the northern hairy-nosed wombat is a pure public good (Tisdell and Swarna Nantha 2007). It is confined to a forest reserve where scientists are trying to increase its population. It is not allowed in zoos or private collections, and the public is excluded from the reserve containing its remnant population.

Sometimes conservation NGOs directly conserve mixed economic goods or quasi-public goods themselves by relying on economic exclusion possibilities. For example, the Otago Peninsula Trust in New Zealand is instrumental in protecting a colony of the Northern Royal Albatross *Diomedea sanfordi* at Taiaroa Head. This species is listed by the IUCN as

endangered. Visitors pay to see this albatross colony at relatively close range (Tisdell 1990: Ch. 7; Higham 2001). The colony nests at this site. Their payments constitute the major source of funds for this NGO and in recent years the Trust has been able to obtain a financial surplus from operations of its Royal Albatross colony which it has used to subsidise other conservation activities (The Otago Peninsula Trust 2005). Similarly, the Mareeba Wetland Foundation manages a wetland wildlife reserve in the Atherton Tablelands in Northern Queensland (Australia). A substantial amount of its funds are obtained from visitors to this wetland who pay to enter this reserve which conserves a number of wild species in a natural setting. In both cases, components of the conserved commodity for which exclusion is possible help finance the organizations involved.

Some conservation bodies may favour conservation projects that have a substantial and demonstrable local positive economic impact. This may help to generate local positive economic and other support for the NGO. However, conservation projects that have greatest local economic impact may not necessarily be those of greatest economic value. They may not, for example, maximise net social welfare – for instance, as estimated by the use of social cost-benefit analysis (CBA) (Tisdell 2006a).

This raises a social dilemma. Suppose, for example, that there are two species A and B that could be conserved in a local area by a similar level of investment but that funds are sufficient to conserve only one and their conservation is mutually exclusive. A social choice must be made about which one to conserve. If A is conserved, the net total economic value (TEV) of this is estimated to be $1 million and local income of $0.5 million is predicted to be generated. On the other hand, conservation of species B is estimated to yield a net TEV of $2 million but only generate $0.1 million in income locally. If net TEV is to be maximised, the project to conserve B is the optimal social choice but if local economic impact is to be the deciding factor, conservation of species A would be the appropriate social choice.

It is then a question of deciding what the appropriate social rules are. If the local community is, for example, very poor, it is possible that there would be a preference for the project that conserves species A. But what if the local community is rich? Should income transfers be made to the local community if this community is poor and it is decided to conserve species B? If so, how should these be made?

5 Bounded Rationality and the Operation of Conservation NGOs

Individuals are undoubtedly limited in their rationality, their knowledge, and the span of their attention (Simon 1961). Conservation NGOs by their communication help focus individual's attention on objects to be conserved. This may reduce their attention to other objects given that the attention spans of individuals are limited. Thus, the supply of public goods or quasi-public goods promoted by NGOs may be favoured by targeted members of the public. It is by no means certain that the composition of the transmitted information is ideal, even if an ideal can be defined for transmission of such information.

In the case of wildlife conservation, provision of information by NGOs may be focused on species which are estimated to generate the greatest public financial support for the NGO. These may not, however, be the most valuable species to conserve.

Furthermore, there might be more emphasis than is socially desirable on species likely to suffer a decline in their existing population than on those for which an increase in their existing population is desirable. Results from psychological economics indicate that individuals are willing to pay more to avoid loss of a valued commodity than to pay for an equivalent gain. This has been called the status quo or endowment effect (Knetsch 1989; Tversky and Kahneman 1991; Kahneman et al. 1991). In general, individuals will be willing to pay more to avoid the loss of a species, the more imminent the loss is believed to be and the greater are the perceived adverse consequences of the loss. This may entice some conservation NGOs to exaggerate the degree of endangerment of their focal species and the extent of the adverse consequences of that loss (Tisdell 2006b). They hope as a result to marshal greater public action to conserve the species or secure more funds for the NGO. The public may not find it economic to scrutinise carefully the truth of statements made by NGOs.

As in the lemons case (Akerlof 1970), there is also a risk that dishonest NGOs or inefficient ones may collect funds from the public to help conserve wildlife species by supplying misleading information to the public. Information is asymmetric in this case. With increasing use of the internet, this problem may increase. However, one reviewer suggested that this may not happen because the internet may be used to check on those NGOs that request donations via websites. In practice, this is optimistic because significant on-line fraud occurs.

6 The Efficiency of Conservation NGOs in Fund Raising and How Their Competition may Narrow the Diversity of Species Supported for Conservation

It seems likely that conservation NGOs vary considerably in the competency with which they carry out their missions because they appear to be less subject to competitive discipline than business firms. However, they must receive adequate funding to survive and/or contributions of voluntary services. They do not seem to be subject to the discipline of possible takeovers by raiding companies as many businesses are, nor to the discipline imposed by bankers as many businesses are in some countries e.g., Germany.

The question arises of just how efficient the organizational structures of individual conservation NGOs in promoting biodiversity conservation are and just how efficient is the whole array of extant NGOs in doing this. To what extent should such bodies be decentralised? What is the best organizational form for NGOs to achieve their mission? Is for example a U-form (unitary form) or an M-form (multidivisional form) best (Williamson 1986)? Should they have a peak-type of organization to represent their interests nationally and internationally, such as the IUCN. Hagedorn (1993) suggests that governments (politicians) prefer to deal with peak civil organizations because this reduces their political transaction costs. This suggests that NGOs are more likely to influence government policy if they have a peak organization.

Sometimes, conservation NGOs duplicate the activities of one another, do not engage in co-ordinated action with one another, and may forgo scale economies as a result. On the other hand, larger scales of operations may have drawbacks because of managerial ‘slippage’ and greater knowledge deficiencies in larger organizations as well as a reduced sense of belonging by individuals contributing to the activities of the conservation body.

Some simple game theory models can be used to illustrate the point: conservation NGOs in following their own self-interest may fail to promote biodiversity and by competing reduce the total net funds available to them collectively or even in some cases, individually. Suppose two conservation NGOs, A and B, and that each has two alternative strategies: promote species 1 or promote species 2. The net funds that they have donated depend upon which species they promote.

There are several possibilities which can be illustrated by matrices. One possibility is illustrated in Table 1. The payoffs in the body of the matrix indicate the funds which the

NGOs obtain for promoting the conservation of the different species, say in millions of dollars. Imagine that in the absence of support by NGOs to promote their conservation, each of the species will disappear. However, assume that if a minimum of $2 million is spent on fostering the conservation of an individual species, it will survive.

Table 1: Matrix used to illustrate the incentives of NGOs to concentrate on the promotion of the same species and the possible shortcomings of this

		NGO B	
		Promote Species 1 (B_1)	Promote Species 2 (B_2)
NGO A	Promote Species 1 (A_1)	(2,2)	(2,6)
	Promote Species 2 (A_2)	(6,2)	(2.5, 2.5)

Source: own table

If each NGO's motive is to maximise its funds, then both will promote species 2. Consequently, species 1 receives no support and disappears but species 2 survives because the total promotional effort to save it equals $5 million. If the NGOs had been less selfish and had adopted either the combination of strategies (A_1, B_2) or (A_2, B_1) both species would have survived and collectively their funds would have been greater. Nevertheless, the outcome (A_2,B_2) prevails and forms a Nash equilibrium. The result is not, however, Pareto sub-optimal for the players as it would be in the prisoners' dilemma case. Note that if 6 is replaced by 2.7 in the matrix in Table 1, this would still result in the NGOs only promoting the conservation of species 2 if they follow their self interest and, once again, this results in a Nash equilibrium. This is an even more inefficient outcome than in the previous case because not only is there failure to achieve the maximum attainable level of biodiversity conservation but the overall cost of achieving the amount of biodiversity conservation obtained is higher than when more species are conserved. If either strategies (A_1, B_2) or (A_2, B_1) are adopted both species are conserved at an overall cost of $4.7 million but when strategy (A_2, B_2) is adopted only one species is conserved at the overall cost of $5 million.

If we assume that the goal of the NGOs is to maximize the number of species conserved subject to the attainable set of collective possibilities, it can be seen that there is failure to achieve this in the above cases. From this point of view, there is collective organizational inefficiency. Furthermore, the collective costs of achieving a given degree of biodiversity are not necessarily minimized, as is evident from the second example. The goals of the NGOs are

not always pursued in a manner which minimizes the collective costs of achieving a particular biodiversity outcome. In other words, the strategies of NGOs may not be collectively cost-effective. This indicates the presence of a type of economic inefficiency.

A Pareto sub-optimal case (for NGOs) is illustrated in the matrix in Table 2. In the case shown there, both players (NGOs), acting in their selfish interest, promote species 2. They obtain \$0.75 million each as a result. This is a Paretian sub-optimal outcome from their point of view and the total promotional expenditure of \$1.5 million is insufficient to save species 2. Neither species is saved, even though it is possible to save both by selecting either strategies (A_1, B_2) or (A_2, B_1). Once again, there is inefficiency in achieving the collective goal of maximizing biodiversity conservation. This is not to say that all Nash solutions in the prisoners' dilemma case will result in failure to save all the focal species. For instance, if in Table 2 the payoffs corresponding to (A_2, B_2) were (1.5, 1.5), the total promotional effort for species 2 is \$3 million. Thus, species 2 survives (but not species 1) given the assumption that an expenditure of \$2 million is required to ensure the survival of a species. Nevertheless, in both cases, the selfish actions of NGOs result in less biodiversity conservation than is attainable.

Table 2: Matrix to show a prisoners' dilemma type problem and failure of NGOs to promote biodiversity

		NGO B	
		Promote Species 1 (B_1)	Promote Species 2 (B_2)
NGO A	Promote Species 1 (A_1)	(2,2)	(2,6)
	Promote Species 2 (A_2)	(6,2)	(0.75,0.75)

Source: own table

A third related case can also be envisaged. This is illustrated by Table 3. In this case, the self interest of each of the NGOs is to co-ordinate their strategies so that they do not accidentally promote the same species. If both NGOs promote species 1 it will survive but not species 2. If both promote species 2 neither species will survive. This is based on the assumption (stated above) that each species requires a promotional expenditure of a minimum of \$2 million to survive.

Table 3: Matrix to illustrate a co-ordination problem for NGOs

		NGO B	
		Promote Species 1 (B_1)	Promote Species 2 (B_2)
NGO A	Promote Species 1 (A_1)	(2,2)	(3,3)
	Promote Species 2 (A_2)	(3,3)	(0.75,0.75)

Source: own table

However, we should not conclude that duplication of effort by NGOs to conserve species is always unfavourable to conservation. For example, if effort is spread over many species, threshold levels of expenditure for the survival of only a few species may be reached. By concentrating conservation efforts on fewer species, it is possible that thresholds for the conservation of a larger number of species might be attained and greater biodiversity conserved. Again, however, there may not be social mechanisms to ensure that NGOs achieve the socially desired balance.

7 How should the (Social) Role of Conservation NGOs be Assessed?

The above discussion raises the issue of what is the appropriate way to assess the social role of conservation NGOs. Given the views of Hagedorn (1993), it would seem inappropriate to assess NGOs purely from an economic efficiency point of view; or in terms of the terminology he uses, on the basis of the quality of their decisions. In his view, attention should also be given to the political legitimacy and the political acceptability of their policy proposals. He is critical of the fact that agricultural economists have concentrated on the economic efficiency or quality of decisions by institutions or policies and have neglected the political sustainability of decision-making processes or proposals.

If the most efficient policy alternatives are not politically acceptable, then they are irrelevant from a practical point of view. Proposed polices or institutional structures should be assessed taking into account both efficiency and political acceptability factors. For example, in Figure 2 the set bounded by OABCD may correspond to all policies that can address a particular social issue. A policy corresponding to point C would be the most efficient but not the most acceptable politically. The politically most acceptable one corresponds to point B. Should society choose point B or C or some point on the segment between these points? The policy corresponding to point C may maximize net social benefit using traditional CBA but

that corresponding to B may give a distribution of benefits that makes it relatively more acceptable.

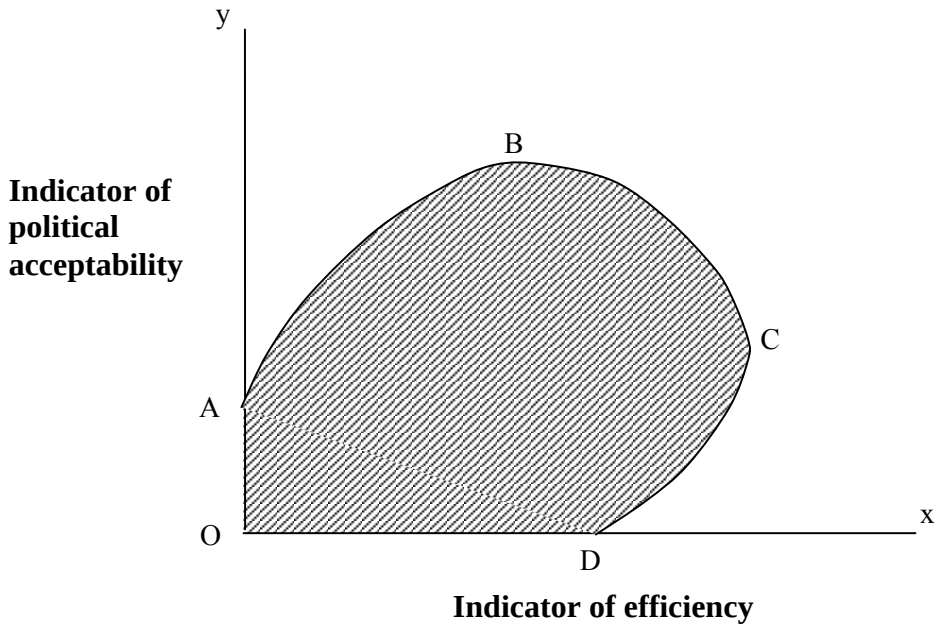

Figure 2: Efficient institutions and policies may not always be politically acceptable
Source: own figure

Another point to consider is that although an institutional structure does not provide the most efficient solution to a social problem it may still have net benefits and no other feasible political alternative may be available. Thus, conservation NGOs may make a positive contribution to the supply of public or quasi-public conservation goods; a contribution which would not be made in their absence. Their contribution seems to be a positive one even though not perfect. Furthermore, no other workable institutional arrangements may be possible which will do a better job of filling conservation gaps. To be more specific in relation to biodiversity conservation, even if conservation NGOs are neither as effective nor as efficient in promoting biodiversity conservation as they could be, their net contribution may be positive and superior institutional arrangements may not be possible.

An additional factor to bear in mind is that conservation NGOs are a part of civil society. They may, therefore, act as useful counters to the power of the state, and they provide separate sources of information and expertise. This is valued in itself by those that favour open societies (Popper 2002).

Again, another positive social contribution of conservation NGOs (and other NGOs) is that they provide extra avenues for individuals to 'belong' to society. Most NGOs rely on volunteers and donations from individuals to function. They provide an alternative to the workforce for social recognition of individuals. They can help counter social alienation and build community spirit. The importance of this type of sociological (social) contribution of conservation NGOs has been documented by Buchan (2007) by means of case studies. This all suggests that institutions need to be assessed from a multidimensional point of view.

8 Concluding Comments

The analysis in this article is exploratory in the sense it applies behavioural theories mostly developed by new institutional economists to outline possible behaviours of conservation NGOs and assess the consequences of these behaviours. It was claimed that the administrators of NGOs may pursue goals different to those of rank-and-file members due to principal-and-agent phenomena and differing goals of the stakeholders. This is liable to result in some compromise of conservation goals by administrators of NGOs. Financial considerations may lead many conservation NGOs to concentrate on supporting a limited set of species for conservation (for example, charismatic ones) and they may take advantage of bounded rationality and asymmetry of information to bias the information they provide to the public. Application of game theory suggests that the competitive behaviour of conservation NGOs is less effective in promoting biodiversity conservation than it could be. It can result in fewer species being saved by the activities of NGOs than is attainable given their available strategies. Inefficiency can therefore arise in this case. Furthermore, the costs of conserving whatever species are conserved may be higher than it need be.

It could, however, be argued that the role of conservation NGOs in society should be assessed from a broader angle. For example, the political role of such institutions may need to be taken into account as well as their role in facilitating social activities. There is as yet no easy way to assess the social value of these multidimensional attributes.

This article has applied new concepts in economics, such as those developed in new institutional economies, to help analyse the behaviour of conservation NGOs and shed light on the economic and social issues raised by the development of these organizations. The analysis should be regarded as suggestive rather than definitive.

When considering the evolution of conservation NGOs and the types of missions or objectives they pursue, it is probably wise to study also cultural factors and changes in social values (see Tisdell et al. 2006) as suggested by traditional economic institutionalists. This is because prevailing values held in societies alter with the passage of time. To some extent, NGOs may contribute to this change. However, to a large extent, changes in social values are likely to be exogenous to individual NGOs. As these values change, some new NGOs may arise with missions that reflect the new set of values, some existing NGOs may disappear and other existing NGOs may reform their goals in order to survive financially. There is considerable scope for studying the dynamics of such change but this has not been attempted here.

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