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Title: Platforms for Collective Action in Multiple-Use CPRs
              (Discussion Paper for the Panel 'Multiple-Use CPRs, Collective Action and Platforms for Resource Use Negotiation')

Stream: Theory

Abstract:

Collective action processes in complex, *multiple-use* common-pool resources (CPRs) have only recently become a focus of study. When CPRs evolve into more complex systems, resource use by separate user groups becomes increasingly interdependent. This implies, amongst others, that the institutional framework governing resource use has to be re-negotiated to avoid adverse impacts associated with the increased access of any new stakeholders, such as overexploitation, alienation of traditional users and inter-user conflicts.

World-wide experiences in the field of extension science suggest that the establishment of *'platforms for resource use negotiation'* is a way of dealing with complex natural resource management problems. A platform is defined as a decision-making body (voluntary or statutory), comprising different stakeholders who perceive the same resource management problem, realise their interdependence in solving it, and come together to agree on action strategies for solving the problem (Röling, 1994).

This paper sets the scene for a panel discussion on the potential of local *platforms for resource use negotiation* in facilitating collective action in the management of complex, multiple-use CPRs. The paper has five objectives. First, we identify what we mean by 'collective action' in the context of this paper. Second, we discuss the importance of collective action in complex, multiple-use CPRs. Third, we introduce the concept of 'platforms for resource use negotiation' to co-ordinate collective action by multiple users. Fourth, we address a number issues that emerge from evidence in the field regarding the role and potential of local platforms in the management of complex, multiple-use CPRs. Finally, we raise five discussion statements related to the effectiveness of local platforms to co-ordinate collective action in complex, multiple-use scenarios. The latter will form the basis for the panel discussion.

1. Introduction

In the increasingly popular debate over the sustainable use of natural resources, of particular interest to natural resource managers are the problems associated with resources that are held in common. In this debate, Hardin's 'Tragedy of the Commons' thesis (1968), which predicts the overexploitation, degradation and eventual ruin of collectively used resources as a result of the user's rational incentive to maximise his own utility, has become a strong symbol of the problems of common-pool resources.

The debate about collective action in common-pool resource management has been blurred by a conceptual misunderstanding about the nature of such resources, caused by Hardin's unfortunate use of the term 'common' to describe an 'open access' regime. Resources used in common are variously referred to as 'open access', 'common-pool', 'common property' and 'the commons'. However, although such resources are all characterised by the potential occurrence of a 'commons dilemma', they differ essentially in terms of the decision-making arrangements that are present to govern their use. 'Open access' resources refer to a 'free for all' situation, where there are no rules to control access to the resource and allocation of the resource units from the resource. 'Common property resources' are characterised by the presence of a set of rules governing access to, allocation of and control over the resource. We will refer to *common-pool resources* (CPRs) to identify resources that are used by multiple-users and/or multiple-user groups and for which joint use involves subtractability. The various *regimes* under which common-pool resources can be managed are: 'open access', 'common property'/'commons' and 'public property', where access rights for the public are held by the Crown or State[1].

Much of the original work conducted on the analysis of management regimes for common-pool resources has focused on resources that are subject to one single, extractive resource use (Bromley *et al.*, 1992; McCay & Acheson, 1990; Ostrom, 1990; Singh, 1994). This paper focuses on the evolution of CPRs into multiple-use resources, and the consequent impacts on collective action. Increasingly, authors are acknowledging that the important resource management issue is balancing the interests of different users involved in different *types* of uses (Feeny *et al*., 1990; Barrett, 1990; Edwards & Steins, 1998a; Selsky & Creahan, 1996; Steins, 1997a). This implies, *inter alia*, that collective action among the user groups is required to agree rights about access to, allocation of and control over the resource, since resource uses by the separate user groups are interdependent. In other words, when commons evolve into multiple-use resources, the institutional framework within which collective resource use takes place has to be re-negotiated to avoid adverse impacts associated with increased access of new users to the resource system, such as overexploitation, alienation of traditional users and inter-user conflicts.

The above adverse impacts are often augmented by the institutional framework at the legislative and organisational level. In particular, two problems can be identified. First, policy-makers often fail to recognise the complexities associated with managing multiple-use CPRs due to: (i) poor communication structures between policy-makers and the users; and (ii) a top-down approach, which imposes policies upon the users. Second, the institutional frameworks that were originally designed for single-use common property regimes may not have been changed to keep up with new uses of the CPR (Edwards, 1996; Steins, 1997a).

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[1]   In reality, many CPRs can be managed under more than one type of regime. By using the term common *pool*, it is our intention to include resources to which common property rights are attached, but to which public and/or private property rights may also exist and, indeed, open access may be assumed by some users. This is the essence of the 'complex' commons we refer to and, in reality, CPRs subject to multiple-use are likely to comprise this mixture of rights.

The above circumstances have given rise to the development of, what Röling (1994) refers to as, *platforms for resource use negotiation*, such as watershed-based user associations and co-management initiatives, in which resource management issues are considered from a broader perspective and where stakeholders: (i) work collectively towards an understanding of the resource base; (ii) co-operate in solving social dilemmas associated with collective resource use; and (iii) undertake joint action with respect to perceived problems. Experiences from around the world suggest that platforms have a great potential for solving natural resource management problems through collective action and joint learning based on the accommodation of different and often conflicting objectives (Röling & Wagemakers, 1998).

This paper sets the scene for a panel discussion at the 7th International Common Property Conference in Vancouver. The theme of the panel is the potential of local *platforms for resource use negotiation* for the management of complex, multiple-use CPRs through collective action[2]. The paper has five objectives. First, we identify what we mean by 'collective action' in the context of this paper. Second, we discuss the importance of collective action in complex, multiple-use CPRs. Third, we introduce the concept of 'platforms for resource use negotiation' to co-ordinate collective action by multiple users. Fourth, we address a number issues that emerge from evidence in the field regarding the role and potential of local platforms in the management of complex, multiple-use CPRs. The discussion builds on empirical work in multiple-use marine and land-based CPRs in the UK, Ireland and The Netherlands. Finally, we formulate five discussion statements related to the effectiveness of local platforms to co-ordinate collective action in complex, multiple-use scenarios. These will form the basis for the panel discussion.

2.   Collective action and the management of CPRs

For a long time, the prevailing belief among policy-makers was that the problems associated with common-pool natural resources could only be solved through either privatisation of the resource or through state intervention. During the past decade, however, empirical evidence has been brought forward that local user groups *are* capable of managing such resources *through collective action* (Bromley *et al.*, 1992; McCay & Acheson, 1990; Ostrom, 1990).

The Oxford Dictionary of Sociology describes collective action as:

> *action taken by a group (either directly or on its behalf through an organisation) in pursuit of members' perceived shared interests.*

In a common-pool resource scenario, collective action will typically occur if local stakeholders seek to overcome the problems associated with the 'the tragedy of open access', and agree on decision-making arrangements to control access to, allocation of and control over the CPR, converting it into a common property regime. Consequently, the problem facing user groups of the commons is that of organising in order to supply and maintain institutions (Ostrom, 1990).

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[2]   In the panel 'Multiple-Use CPRs, Collective Action and Platforms for Resource Use Negotiation', the issues raised in this discussion paper will be further elaborated through four paper presentations by Niels Röling (Sustainable Land Use: Towards a Methodology for Facilitating Nested Coupled Systems); Ruth Meinzen-Dick & Margaretha Bakker (Irrigation Systems as Multiple-use Commons); Marleen Maarleveld & Constant Dangbegnon (Managing Natural Resources in Face of Evolving Conditions: A Social Learning Perspective); and Helle Munk Ravnborg (Collective Action in Watershed Management: Lessons from the Andean Hillsides).

The presence of a well-established set of decision-making arrangements is, however, not enough to guarantee collective action in the long term. Collective action processes always go hand in hand with the free-rider problem. A free-rider is a social actor who perceives that he will receive a higher individual payoff for a socially defecting choice than for a co-operative choice, even though all individuals engaged in collective action would, on the long term, be better off by working together. Empirical research into the management of local CPRs has identified a number of conditions or design principles underlying successful collective action in such scenarios. Table 1 gives an overview of these conditions.

Table 1: Conditions for collective action as developed in CPRs theory

Wade's conditions for successful common property resource management (1988):
1. the nature of the resource;
2. the costs of exclusion technology;
3. the relationship between resources and user groups;
4. the characteristics of the user group;
5. noticeability of cheating; and
6. the relationship between users and the state.

Ostrom's design principles characterising robust, simple common-pool resource systems[3] (1990):
1. clearly defined boundaries;
2. congruence between allocation and access rules and local conditions;
3. user's ability to modify the operational rules through collective-choice arrangements;
4. monitoring of management system;
5. graduated sanctions;
6. conflict resolution mechanisms; and
7. management rights of resource users are not challenged by external agents.

Pinkerton & Weinstein's basic criteria for fruitful collective resource management (1995):
1. accountability;
2. effectiveness;
3. representativeness; and
4. adaptability.

The management regimes for CPRs are characterised by three levels of decision-making arrangements (Ostrom, 1990):

1. the *legislative level*, where decision-making arrangements form the legal framework within which stakeholders in the resource have to operate;
2. the *organisational level*, where decision-making arrangements determine the rules for interaction between management organisations and user groups; and
3. the *operational level*, where the purpose of decision-making arrangements is to provide resource users with day-to-day rules controlling access to, allocation of and control over the resource.

The operational rules are made within the regulatory framework at the organisational level, which in turn is determined by legislation at the policy level. In other words, the decision-making arrangements at different levels are 'nested': change at one level is the result of patterns

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[3] Ostrom (1990: 90) is cautious in warning her readers that she "is not willing to argue that these design principles are necessary conditions for achieving institutional robustness in CPR settings". However, she "is willing to speculate …that after further scholarly work is completed, it will be possible to identify a set of necessary design principles and that such a set will contain the core of what has been identified here".

of interactions at another level. At all three levels, authority structures are present that "sanction rights, enforce rules, and define the contexts in which conventions and contracts are negotiated" (Swallow & Bromley, 1995: 109). These authority structures are considered to be vital to the operation of the decision-making arrangements.

The authority structures involved in the management of the commons are essentially platforms for resource use negotiation. For the purposes of this paper, we define a platform as:

> *a negotiating body (voluntary or statutory), comprising different stakeholders who perceive the same resource management problem, realise their interdependence in solving it, and come together to agree on action strategies for solving the problem* (cf. Röling, 1994; Maarleveld *et al.,* 1996).

In relatively simple, single-use commons, the role of platforms is to provide a mechanism through which collective action processes within a single user group are defined and managed. The platform at the operational level are the users, who have realised that they can only overcome problems associated with open access through co-operation; the establishment of a co-ordinating body at the organisational level is often the result of such realisation.

An example of a platform for common property resource management at the organisational level is the *Court of Verderers* in the New Forest in the UK. The majority of Crown-owned land in the New Forest has been managed under a common property regime for over 900 years. The right of pasture and the right of mast (to turn pigs out to feed on beech mast and acorns) are the two common rights that prevail today and are practised by some 250 commoners. Although the day-to-day management responsibility of the New Forest falls within the remit of the Forestry Commission, the protection and administration of the common property rights are managed by the Court of Verderers, which was reconstituted in 1877 from an ancient Forest Court. The Forestry Commission has its own set of bye-laws, adapted from National Forestry Bye-laws, which define permitted uses of the commons for recreational purposes. The Court of Verderers has a statutory right of veto over the Forestry Commission in most of its activities on the commons (Edwards, 1996).

At the legislative level, the authority structure inherent in a co-management strategy for fisheries is an example of a platform for the management of single-use commons. In The Netherlands, the national implementation of the Dutch Total Allowable Quotas (TACs) under the European Union's Common Fisheries Policy led to overfishing of fishermen's Individual Transferable Quotas (ITQs); non-compliance with rules due to a lack of fishermen's support for the regulations; and to severe conflicts between the fishing industry and the government. Following recommendations of a government working party, and after extensive consultation with the fishing industry, the Biesheuvel quota management groups were implemented under a national policy framework in 1993. The Biesheuvel Groups operate within the Producers' Organisations. Group members are obliged to transfer the right to manage their ITQs to the board of the group, and members have the right to *use* (which does *not* mean 'to fish') their ITQs under the conditions which have been agreed upon in a fishing plan made by the Group. Through the administration of the Group, they are allowed to rent or hire their quota to other members. The government policy for the co-management of the national TACs through the pooling of ITQs has been a great success: 97% of the cutter owners have joined a Group, the system has resulted in a drastic reduction of offences and no quotas have been exceeded since 1993 (Steins, 1997b).

It can be concluded that platforms for resource use negotiation in the management of CPRs are not something new. The formal and informal authority structures that are established when a user group realises that sustainable management can only be achieved through collective action in the design, implementation and enforcement of decision-making arrangements, can all be called platforms. However, the potential of local platforms as a tool *to facilitate collective action among separate user groups* in complex, multiple-use scenarios is a relatively new idea, and is the focus of the remainder of the paper. Before we can begin such discussion, it is necessary to explain why collective action is so important in a multiple-use scenario.

3.   Collective action in complex, multiple-use CPR management regimes

The evolution of CPRs and their management regimes is the result of both internal factors (e.g. users developing new technologies) and external contextual factors[4] (e.g. demographic changes, technological developments) affecting the demand and supply of resource units extracted from the CPR. Consequently, contemporary CPRs have evolved to form complex, multiple-use resources which are managed under different types of regimes. For example, from the 11th century onwards, vast areas of the Crown Lands in the New Forest (UK) have traditionally been used under a common property regime, allocating, *inter alia*, the right of pasture to a group of commoners. Since the middle ages, the New Forest has supported timber production for the production of war ships for the Crown. When technological changes resulted in the use of iron-clad vessels, timber was produced for commercial sale. Since the late 19th century, the New Forest has also become an important recreational resource as a result of an increasing demand for recreational use of the countryside, increased personal disposable income and improved transportation networks. As a result, the New Forest has become openly accessible to millions of recreational users (Edwards & Steins, 1998a).

The evolution of CPRs into multiple-use resources can have a wide variety of environmental impacts. For example, whilst grazing and forestry competed as dominant land uses in the New Forest, potential environmental damage comprised loss of vegetation (grass, shrub and tree) from grazing, or modification of vegetation from forestry plantation and restriction on grazing. However, since the 1950s, when the New Forest began to increase in popularity as a backdrop for recreational pursuits, environmental damage has included, *inter alia*: (i) water pollution to streams and rivers; (ii) vegetation loss and erosion through trampling, horse riding and mountain biking; (iii) trees cover loss through modification of the landscape for infrastructure development, such as car parks; and (iv) disturbance to wildlife, especially to ground nesting birds through walkers and their dogs (Edwards, 1996).

Alienation of traditional user groups is another example of adverse impacts related to multiple-use. For example, in the west of Ireland, the establishment and expansion of salmon farms in several estuaries has caused a serious conflict between small-scale coastal fishermen and salmon farms. The fishermen feel that they have lost access to important fishing grounds to the salmon farm. Their frustration is aggravated by the fact that public consultation about the designation of salmon production sites has hardly taken place. The conflict reached a peak in the summer of 1996 when the fishcages of one salmon farm were sabotaged, releasing

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[4]   Hitherto, the study of collective action processes in CPRs theory has mainly focused on the internal dynamics of resource management, that is, the resource system is studied in isolation from the wider political economy in which it is embedded. This seriously limits our understanding of collective action processes in the management of common-pool resources, since local resource users will base their decision to co-operate or defect not only on the expected socio-economic costs and benefits generated by the CPR, but will also consider the expected socio-economic costs and benefits resulting from externally available 'alternatives'. We refer to Edwards & Steins (1998a, 1998b) and the panel on 'Contextual Factors' organised at IASCP 1998, for a further discussion of this third problem.

IR£250,00 worth of juvenile salmon (Steins, 1997a).

The examples from the New Forest and West Ireland demonstrate a crucial aspect of multiple-use: the activities/actions of one user group influence activities/actions by other user groups, that is, multiple uses are closely interconnected. Thus, it is the very nature of multiple-use resources that makes collective action a necessity to deal with adverse impacts associated with multiple-use. This recognition has also be recognised at the global level were states are increasingly working together to solve problems related to global CPRs, such as decreasing air quality, deforestation and scarcity of natural resources. Perhaps the best-known example of such global collective action is Agenda 21, the action plan of the 1992 Earth Summit in Rio de Janeiro, which was signed by every nation of the world and provides a 'road map' to future (integrated) resource management.

In a multiple-use CPR scenario, collective action becomes increasingly complicated. Typically, the different uses will be regulated through different decision-making arrangements by different groups: through different management regimes. Common property regimes may co-exist with public property regimes and private property. In addition, areas of the CPR may be accessible to all. For the stakeholders in a common property resource, the characteristic of multiple-use implies that not only are they involved in collective action processes with other users of the common, but also they have to co-operate with other, different user groups of the CPR in order to avoid problems associated with multiple-use. This implies, amongst others, that the institutional framework within which collective resource use takes place has to be re-negotiated to avoid adverse impacts associated with increased access of new users to the resource system, such as overexploitation, alienation of traditional users and inter-user conflicts.

One way of re-negotiating institutional frameworks to deal with the complexities involved in the management of multiple-use CPRs is through the establishment of local platforms for resource use negotiation.

4.   Platforms for resource use negotiation in complex, multiple-use scenarios

The concept of 'platforms for resource use negotiation' has been developed at the Department of Communication and Innovation Studies at Wageningen Agricultural University, The Netherlands. Its development was triggered by two factors. First, the prevailing top-down, transfer of technology approach used in agricultural extension had appeared to be a failure world-wide. Second, there was a growing recognition that natural resource management problems are the outcome of imbalanced use by interdependent user groups, and can only be solved through some form of co-operation. This resulted in the development of a 'knowledge systems perspective' to agricultural extension, which is aimed at developing a diagnostic framework for analysis, design and management of policy decisions and helps land users in becoming experts at managing complex ecosystems in a sustainable manner. We refer to Röling (1992) and Röling & Wagemakers (1998) for a detailed discussion.

Platforms emerge when stakeholders experience the negative impacts of their own and other users' use of a natural resource and become aware that these problems require "building human institutions and a capacity for collective learning and decision-making about the ecosystem perceived to be under threat" (Röling & Jiggins, 1998). In this light, Ostrom (1995) refers to the creation of social capital or the arrangement of human resources to improve flows of future benefits.

A key notion in the literature on platforms for resource use negotiation is the idea of 'social learning' in order to achieve solutions to natural resource management problems. This concept has recently entered the policy science discourse to complement three other ways of learning:

1. *technical learning*, where change is achieved through implementing new policy *instruments* while policy objectives remain unchanged;
2. *conceptual learning*, where change is achieved through the redefinition of policy *goals*; and
3. *cognitive learning*, where policy change is based on scientific *knowledge* (Glasbergen, 1996).

Social learning is a form of learning that has emerged from the realisation that environmental policy needs to be designed and implemented in the context of complex interdependent relationships between multiple stakeholders; a complex, fragmented reality requires a multi-faceted problem-solving capacity (Glasbergen, 1996). There is no agreed definition for social learning; the term has a multitude of meanings depending on different disciplines, theories and object of study. The most fundamental difference is that some researchers refer to social learning as learning by individuals that takes place in social settings and/or is socially conditioned, while for others it means learning by social aggregates (Parson & Clark, 1995; see also for a review of individual learning and its social determinants). Following Glasbergen (1996: 184), we define social learning as:

> *"a process that can be encouraged by lifting barriers to communication and by encouraging interaction between the parties involved in policy issues. The core idea is that parties can learn from each other by more open and responsive communication".*

The importance of social learning in the evolution of decision-making arrangements in the management in local and global CPRs has only recently been recognised (Young, 1995). The notion of social learning is, however, of major importance for collective action processes in the sustainable management of multiple-use CPRs. Cutler *et al.* (1995) identify three major reasons why human systems fail to maintain ecosystems:

1. poor correspondence of the scale and structure of human systems with the scale and structure of ecosystems;
2. failure to introduce (effective) governing institutions for the ecosystem; and
3. lack of appropriate knowledge about the nature and structure of the ecosystem or even the social system.

Although each of these factors constitutes a collective action problem in itself, the larger problem of human failure to maintain ecosystems can only be solved through collective action, i.e. through involving the multiple stakeholders and creating a shared definition of the problem and commitment to design and implement action strategies to transcend the problem (cf. Röling, 1997). It is this process of collective action through social learning which may be facilitated through platform management.

An example of CPR management through social learning is the co-management strategy for the integration of nature conservation and shellfisheries in the Dutch Wadden Sea. Shellfishing under open access conditions combined with natural factors, caused the total disappearance of wild mussel banks and very high mortality rates of oyster catchers and water birds. Under

pressure from nature conservation interests and the media, the fishing industry voluntarily restricted its fishing activities. This led to the implementation of a statutory co-management strategy, in which the fishing industry, in collaboration with nature conservation organisations and assisted by research institutes, is responsible for achieving national nature conservation objectives through the design and enforcement of annual fishing plans. The strategy has been in effect for four years and is currently being evaluated through a concerted action of the government, government advisory boards, the fishing industry, environmental groups and a multi-disciplinary team of researchers (Steins, 1997b).

Below, we take a closer look at some practical experiences of platform management and some issues emerging from these experiences.

5.   Emerging issues from experiences in the field

Research into the management of multiple-use CPRs indicates that platforms for resource use negotiation can arise spontaneously when the user groups realise that resource management practices by the different groups result in overall undesirable outcomes. The undesirable outcomes do not necessarily have to be related to the problem of ecological sustainability, but can also be related to adverse socio-cultural and socio-economic effects. A number of issues regarding the role and potential of local platforms in the management of complex, multiple-use CPRs have emerged from experiences in the field.

Empirical work by other scholars has identified several issues of importance to resource management through platforms. First, there is *the question of scale*. Cutler *et al.* (1995) argue that the scale of regulatory systems often does not correspond with the scale of ecosystems, resulting in unsustainable practices. The authors use the example of migratory fish species, which travel from one state's jurisdiction into another. If regulatory mechanisms are lacking, fishermen from one state will have a strong incentive to decimate marketable stock before the fish migrate to another state's jurisdiction. Thus, co-operation and contracting between the states is necessary to use the stocks in a sustainable level. However, according to the authors, this is often difficult because credible commitments and effective enforcement are lacking *(ibid.)*. In the European Union, an attempt has been made to solve this problem through the introduction of the Conservation Policy under the Common Fisheries Policy. However, since the policy came into effect in 1983, the national quota have been overfished and enforcement and control has proven to be extremely difficult. Changes in management and control systems may involve intractable political issues (cf. Cutler *et al.*, 1995). The question of scale is also addressed by Röling & Jiggins (1998), who mention that platforms for resource use negotiation often do not coincide with existing administrative or economic institutions, which makes platform formation a complicated affair.

The second issue has to do with *the different processes involved in platform management*. According to Röling & Jiggins (1998) the focus on platforms is often on purely social processes, such as conflict resolution, negotiation, power and social learning. However, collective learning about the ecosystem itself and its complex dynamics is a crucial element in the facilitation of platform processes. For example, a crucial element in collective resource management by Australian Landcare groups is the strengthening of 'land literacy'. Land literacy refers to activities designed to help people appreciate the signs of health and ill-health in a landscape, to understand the conditions of and trends in the environment around them, and to make the invisible become visible (Campbell, 1994).

The third issue is *the question of representation*. Who should be represented in the platform? This question is illustrated by Symes (1996: 7) in a discussion on co-management: "which stakeholders should be represented [...] Co-management organisation cannot afford to be too large; yet the alienation of particular groups risks the erosion of co-management's greatest benefit - the legitimacy of the system and its output". Another aspect of the question of representation is the willingness and/or ability of the stakeholders to become involved. For example, in many countries the social role of women either forbids them or hinders them to become an active participant in platforms for resource use negotiation although they may play a crucial role in the use and management of such resources (cf. Meinzen-Dick & Jackson, 1996).

A fourth question is related to the *heterogeneity of the user community*. In many studies of CPRs, the user community is narrowly defined as the individuals who extract resource units from the resource; little attention is paid to other individuals situated around the resource who may affect or be effected by its use and management. For the purposes of this paper, we define the user community as:

> *all individuals who have an influence over or are influenced by the institutional arrangements of the CPR, either directly or indirectly.*

This extends the user community greatly and may include, for example, occasional users of a CPR, such as tourists. The advantage of adopting such a broad definition is that categories of user groups can be constructed which will help to explain (i) the types of pressure on the resource system; (ii) the vested interests of the different groups in the evolution of governing institutions; and (iii) the relative stakes of each user group (see Edwards & Steins, 1998a, for a detailed discussion).

The very nature of multiple-use implies that the heterogeneity of the user community of the CPR increases significantly in comparison to more simple, single-use CPRs. In CPR literature, heterogeneity of stakeholder groups is generally seen as a constraint to co-operation. However, literature on International Relations, which deals with collective action processes among different nation states, tends to argue that co-operation is facilitated by heterogeneity since different preferences or endowments are a condition for gain from trade (Keohane & Ostrom, 1990).

Evidence from our own research into the management of local multiple-use CPRs in the UK, Ireland and The Netherlands suggests that at least a further four issues are of major importance to the degree of success of local platforms for resource use negotiation:

1. the ability of the individual user groups to influence decision-making within the platform;
2. the influence of the organisational and legislative institutional frameworks on the effectiveness of local platforms;
3. the role of social learning; and
4. the need for a third party to facilitate platforms.

5.1   Influence of different stakeholders within the platform

The first issue is related to *the ability of the different stakeholders to influence decision-making processes within the platform.* The case study of the management of Cowes Harbour, Isle of Wight (UK), in Box 1 illustrates this point.

Box 1:   A platform for multiple-use management in Cowes, Isle of Wight (UK)

Cowes Harbour is located in the Medina Estuary at the Isle of Wight (UK). Historically, the harbour is a internationally important yachting centre, and yachting is of significant economic importance to the self-sustaining harbour and the town of Cowes. Cowes is also the only deepwater port at the island and fulfils a key function for the commercial shipping industry. Both yachting and commercial shipping are activities that are characterised by a highly organised national organisational and regulatory framework. Other harbour users include, inter alia, ferry services, watersports training centres, and oyster fishermen.

In 1897 the Cowes Harbour Act gave the Cowes Harbour Commission the exclusive jurisdiction, management and control over the harbour to regulate the activities in the port in the interests of safety and navigation. The Commission is the harbour's parliament and consists of representatives from the County Council (6) and City Council (2) , the Admiralty (1), the Royal Yachting Organisation (1), the Solent Cruising and Racing Association (1); cargo wharves (1); the shipping industry (4); the mainland ferry service (1), and two co-opted members. The Harbour Master is responsible for day-to-day harbour management and has the authority to make a number of navigational rules without permission from the Commission. Over the years, it has become clear that the Harbour Commission has been a successful platform for co-ordinating multiple-uses. However, one user group, the oyster fishermen, are not represented in the Harbour Commission, which has led to a number of conflicts over resource use.

Oyster fishing on wild beds in Cowes Harbour started in the early 1980s, after the oyster beds in the estuary and adjacent coastal waters had recovered from overexploitation in the 1920s and pollution. Ten local oyster fishermen have obtained a navigational licence at £7 a year from the Harbour Master to dredge the beds, which are located in the main fairway. Due to the absence of a legal framework for fisheries regulations in this particular estuary, the fishery is managed on the basis of informal agreements on oyster size and fishing gear, which are based on the regulations for the adjacent Solent oyster fishery. In the 1990s, a conflict between the fishermen and the Harbour Master emerged. Two fishermen repeatedly broke the rules stipulated in the navigational licence, which is required to participate in the oyster fishery. The Harbour Master intended to close the fishery, causing the fury of those who did comply. The Harbour Commission was not aware of this conflict; its members, nor the user groups they represent, have never experienced any problems with the oyster fishermen.

The conflict was eventually resolved when the Harbour Commission commissioned the formulation of an estuary management plan in order to ensure the sustainable use of the Medina Estuary through the integrated management of its natural, economic, cultural, recreational, educational and tourism resources through a highly participatory process. Whereas all the other user groups were approached to become involved in the plan, the oyster fishermen only found out about the plan at a public meeting. Their eventual involvement provided them with an opportunity to identify management problems related to the fishery. As a result, they formed a company through which they formalised fisheries management rules. On the basis of an extensive discussion with the Harbour Master, they reached a private agreement that guaranteed long term access to the fishery. The fishermen are still not formally represented in harbour management, but through the formation of a company and an on-going negotiation process with the Harbour Master, the oyster fishery is now incorporated in resource management and may, in the long term, become formally represented.

Source: Steins & Edwards (1997)

The case study in Box 1 suggests that a number of factors are important in determining the stakeholders' ability to influence decision-making within the platform: (i) the historical background of the specific use within the overall management system; (ii) the socio-economic value of the user group's activity within the multiple-use resource; (iii) the level of organisation of individual user groups; (iv) the level of organisation between users and their representatives; (v) the extent to which relations between users and the platform are formalised; (vi) the strengths and skills of interest groups representing individual users in the platform; and (vii) the extent to which informal relations between users and the platform have been established.

The ability of individual user groups to influence decision-making within the platform must also be looked at in relation to the emergence of new user groups and their role in resource management through a platform.

For example, in the case of the New Forest, the Court of Verderers is responsible for the design

and enforcement of Bye-laws (operational rules), which govern the commoners' use of the commons. The Court of Verderers was established primarily as a forum for discussing common agricultural use of the New Forest by registered commoners. However, in the last forty years, it has been hijacked somewhat by new settlers in the area. Participants at the Court now may not be registered or practising commoners, but see the Verderers' power as a useful tool in preventing unwanted development or activities on the common. As such, the commoners have lost exclusive use of their own platform for negotiating traditional grazing of the New Forest, whilst the revised use of the Court may not be wholly efficient or effective as a multiple-use forum, when compared with the range of alternatives that might be established. In this sense, Edwards (1996) uses the New Forest case study to illustrate *the problem of allowing an existing organisation, designed to manage a single type of use on the common, to develop as a forum for multiple-use decision-making*. In contrast, Meinzen-Dick and Jackson (1996) recognise a problem in allowing new organisations to develop out of old ones, because traditional users may have *greater* access to the platform: "when new organisations develop as off-shoots of existing organisations, they are likely to reflect existing prejudices and may perpetuate inequity rather than providing a forum to meet the needs of diverse groups" (*ibid.:* 27). The aforementioned issues are also closely related to the question of representation (who should be represented in the platform) as is identified by Symes (1996) in his discussion about co-management.

5.2   The influence of higher levels of decision-making

A second question is related *to the influence of higher levels of decision-making on the effectiveness of local platforms for collective resource management*. Evidence from the field suggests that platforms that depend on voluntary agreements for governing collective management can easily be *challenged* by more powerful actors at the legislative level. Box 2, which presents a case study of a platform that was formed to secure fishermen's access to fishing grounds and to keep resource management within the hands of local communities, illustrates this point. The case study indicates that, although a voluntary platform consisting of fishermen, mussel farmers and a community development project has been able to negotiate voluntary agreements on resource management with the government, these agreement are endangered by the government who, for economic and political reasons, prefers a more large scale development of the estuary for mussel cultivation. Thus, institutional frameworks at higher levels of decision-making can undermine the effectiveness of local platforms for collective action between multiple user groups. This problem has also been observed in studies on the management of local single-use common property resources (Barrett, 1991; Olomola, 1992; Ostrom, 1990; Wade, 1988).

Box 2:   A platform for consolidating local marine resources

Killary Harbour is an estuary in NW Connemara, a peripheral region on the west coast of Ireland. Traditionally, the estuary was used for inshore fishing only, the main commercial species being salmon, lobster and brown crab. By the end of the 1970s, the area was discovered by tourism operators and two marine adventure centres were established. In its early days, the tourism sector was developed by non-locals, or "outsiders", as they are referred to by local people. This created bitter feelings, since the locals felt that "the economic benefits were creamed off to Dublin and did not stay here, where they are needed".

In the same period, it was discovered that the Killary was one of the best spawning grounds for mussels in Ireland. In 1980, local community members established a mussel farming co-operative to provide a business structure and service for *local* mussel farmers. One of the reasons behind its establishment was the realisation that the potential of the estuary would attract entrepreneurs from outside the area. The entry of entrepreneurs from outside the area would have meant that locals would hardly benefit from the resource, as had been the case with tourism development.

At the time of the co-operative's inception, local fishermen were extremely concerned that the estuary would be filled up with mussel structures preventing them from accessing their fishing grounds. The co-operative was very aware of the fishermen's fears and agreed on a policy to keep the fairway and the fishing grounds free from rafts and longlines, despite the fact that these areas were designated for mussel production by the Department of the Marine. They also agreed to grant membership to local people only, which made it virtually impossible for non-locals to get the required mussel farming licences. The co-operative, assisted by a community development project operating in the area, convinced the Department of the Marine to support these policies. This informal agreement still exists, but each time the Department receives an application from large investors from outside the area, the co-operative's battle to keep mussel production as local as possible has to be fought again.

Source: Steins (1997c)

However, field experience also suggests that institutional frameworks at higher level of decision-making can also *strengthen* local platforms for resource use negotiation. A good example is the co-management strategy for fisheries management that was adopted by the Dutch government (Box 3). The case study of the Dutch Wadden Sea (Box 3) suggests that the co-management platform had a fair chance of success because it was incorporated within the larger institutional framework and was given a wide range of management responsibilities for which the fishing industry was made accountable.

Box 3:   A national platform for sustainable fisheries management

Until 1992, the cockle fishery in one of Europe's most important wetlands, the Dutch Wadden Sea, was managed under open access conditions. A number of consecutive winters resulted in low cockle stocks. In the competition with oyster catchers over food, the fishermen with their highly sophisticated vessels won; thousands of birds died because of lack of food. Under pressure of nature conservation groups and the media, the Producers Organisation of the cockle fishermen could do nothing but impose a number of voluntary restrictions on the fishermen. These voluntary measures were given formal recognition in the national Sea and Coastal Fisheries Policy.

In 1993, after a process of consultation with the industry, environmental groups and the research community, the national Sea and Coastal Fisheries Policy came into effect, providing a management framework for the Wadden Sea. A total of 26% of the Wadden Sea was closed for fishing. In addition, a distinction was made between 'normal years' and 'years with a food shortage for birds'. In years with a food shortage, 60% of the available cockle [and mussel] stocks will be reserved for birds and a quota for fishermen will be set. Within this framework, the fishing industry, in collaboration with environmental groups, is responsible for the design and enforcement of annual fishing plans to achieve the objectives set in the policy framework.

The Producers Organisation has enforced a number of regulations, the most important being the obligation to have a 'black box' (a computer registering all fishing position and activity) on board; reduction of the fleet from 36 to 22 vessels by concentrating two licences on one vessel; and restrictions on fishing periods and spread of the fleet.

to be continued overleaf

These regulations had a significant impact on the operational level: from being free fishermen, hunters, the cockle fishermen suddenly had to comply with rules. The key problem when first establishing regulations was the question of how to convince the licence holders that it was necessary to regulate the fishery, i.e. how to make fishermen who are used to fish in an open access fishery comply with self-management regulations?

There were a number of tools available to convince the sector of the need for regulations. First, the industry's weekly newspaper, Fishing News, was used to explain the need for measures. Second, all cockle fishermen had to attend a meeting. In this meeting, each measure that was taken in the first fishing plan and was incorporated in the fishing licence, was explained by the Producers Organisation with the assistance of biologists and ecologists working in the Wadden Sea. Third, the Producers Organisation did presentations on as many other meetings as possible. In this way, it was tried to create an understanding of the need for measures. In addition to these persuasive communication strategies, the Producers Organisation decided to sanction anyone who did not comply with the rules. In the first year, total fines contributed to DFL. 62,500, which were all collected. The impact of 'peer pressure' is also an important factor in encouraging compliance. The Producers Organisation has put a lot of effort in convincing the fishermen that what they perceive to be "shopping their mates" should be looked at from a

constructive angle: "if one of your colleagues do not comply with the rules, warn him; it is always better to warn someone beforehand than to wait till the Inspectorate gets him". According to the Producers Organisation, this system of social control works very well for this small group of fishermen.

Despite initial resistance in the first season, compliance rates are now 100%. It must be emphasised that the introduction of the black box has been crucial in monitoring compliance. If fishermen are suspected of breaking the rules, the readings on the black box will not lie.

The relationship between the cockle fishermen and the nature conservation organisations has improved significantly during the past year. Although the nature conservation groups do not believe that the co-management measures adopted are sufficient in terms of nature conservation, and two of them have publicly declared that cockle fishing should be banned, the nature conservation groups and the fishing industry now sit around the table and negotiate about integrating two resource uses that formerly were managed in isolation from each other.

Source: Steins (1997b)

The case studies in Boxes 2 and 3 can also be related to the second question on *the platform's ability to bring about voluntary change at different institutional levels*. In The Netherlands, the Producers' Organisations are highly organised, well-funded groups, which are very influential at the legislative level. In contrast, in the Killary Harbour, the mussel co-operative has only limited powers in making the Department of the Marine's adhere to an informal agreement about keeping the mussel resource as local as possible. These experiences seem to suggest that there is a strong relation between the degree of organisation and available skills of local platforms and their ability to bring about (formal) changes at higher level of decision-making.

5.3   The role of social learning

The case study of the Wadden Sea (Box 3) raises a third question, which is related to *the role of social learning in resource management strategies*, in terms of whether social learning alone is sufficient to change resource users' behaviour. Social learning was an important mechanism to convince fishermen of the need for fisheries regulations for nature conservation purposes. Learning was facilitated through providing written information and holding information meetings. Although social learning furthered the cockle fishermen's understanding of the importance of introducing rules by 'making things visible' to them (Röling, 1994), the obligation to have a black box on board was crucial to ensure compliance with the rules. It remains to be seen whether compliance levels would be 100% without the 'black box', which, for the fishermen, is a tool to 'make visible' to the authorities and conservation groups, that they respect the rules (cf. Ostrom's design principle on monitoring and Wade's emphasis on the noticeability of cheating as a condition for collective action in single use CPRs, Table 1).

The example of the Wadden Sea can also be related to the observation made by Röling & Jiggins (1998) that the focus of platforms is often on purely social processes only and fails to recognise the importance of learning about the ecosystem itself. In the Wadden Sea, education about the role of cockles in the wider ecosystem played an important role in convincing fishermen of the need for adopting fisheries regulations. Similarly, work on reducing aggregate environmental damage in the New Forest has been predicated on any improved understanding of the exact cause and extent of damage (Edwards, 1996). Thus, as part of the process of social learning, ecosystem education was a crucial element in the effectiveness of operational collective action through the co-management platform.

5.4   The need for a third party to facilitate local platforms

In many multiple-use cases, the nature of the new users suggests that collective groups must be

formed to facilitate resource use negotiation. Users can comprise large numbers of individuals, who are often widely dispersed geographically. In such cases, the grouping of uses into recognised coalitions of interest is often axiomatic to the commencement of negotiation towards collective action.

This recognition prompts a final question on how the management of multiple-use CPRs though platforms can be facilitated (cf. Röling & Jiggins, 1998). What kind of methods can/should be used to strengthen existing platforms or develop new ones and what extent of political and institutional back up is required? The evidence from our fieldwork on local CPRs suggests that *a third party is needed to facilitate the development of new and/or existing platforms for resource use negotiation.*

In the case of the New Forest, it was recognised by the Forestry Commission, the managers of the common land, that negotiation between the 500 or so recreational horse riders and other users of the common land could only take place after the horse riders had established their own objectives as a group and elected representatives of such interests. The Forestry Commission was instrumental in the formation of the New Forest Equestrian Association, which is now the principal representative body of horse riders in the New Forest (Edwards, 1996). Similarly, recent research on Pendle Hill (UK), a privately owned area to which common grazing rights are attached, has revealed the need for a third party (in this case, another public management agency) to encourage: (i) the reformation of a common graziers' association; and (ii) the formation of a local hang-gliders' club, to facilitate the negotiation of use of the Hill in its new multiple-use role (Edwards & Steins, forthcoming).

6.   Discussion: the role of platforms in managing complex, multiple-use CPRs

When common-pool resources evolve from relatively simple, single-use into complex, multiple-use resources, collective action processes become increasingly complicated since they do not only have to be organised within the separate user group, but also among different user groups. In this scenario, the institutional framework for collective resource use has to be re-negotiated to transcend adverse impacts associated with increased access of new users to the CPR, such as overexploitation, alienation of traditional users and inter-user conflicts.

Evidence from the field suggests that local platforms for resource use negotiation can play an important role in facilitating collective action processes among multiple-user groups of complex, multiple-use CPRs. The paper has touched upon a number of emerging issues related to the role of platforms for the organisation of collective action in the management of CPRs.

First, we identified a number of factors that influences the different user groups' ability influence decision-making processes in the platforms: (i) the historical background of the specific use within the overall management system; (ii) the socio-economic value of the user group's activity within the multiple-use resource; (iii) the level of organisation of individual user groups; (iv) the level of organisation between users and their representatives; (v) the extent to which relations between users and the platform are formalised; (vi) the strengths and skills of interest groups representing individual users in the platform; and (vii) the extent to which informal relations between users and the platform have been established.

Second, we discussed the influence of higher level institutional frameworks on the influence of platforms. There is strong reason to believe that in order to guarantee the long term effectiveness of local platforms, the platform has to be formally recognised at higher levels and

must be given formal management responsibilities. Voluntary platforms can easily be hijacked by agents at higher levels.

Third, we looked at the role of social learning in platforms. Although social learning about resource management is of crucial importance for the effectiveness of local platforms for resource use negotiation, social learning in itself is not enough. First, 'ecosystem education' is of importance to provide the reasons for devising management regulations. Second, we argue that compliance with management regulations evolving through collective decision-making in platforms is not guaranteed by merely the fact that these regulations are based on social and ecosystem learning processes.

Fourth, we discussed the facilitation of local platforms. Based on the evidence brought forward by other scholars and our own experiences, we can identify a number of emerging issues. The first is related to the question of representation. The constitution of the platform is of crucial importance to its effectiveness. User groups must not be alienated, for risk of loosing the legitimacy of collective rules. However, the social structure of certain societies or prejudices regarding some user groups (e.g. 'the insular fishermen who cannot communicate anyway') can hinder participation of all groups. The second issue is whether existing common property management platforms can be used as a foundation for building multiple-use platforms. Some evidence suggest that new user groups can easily hijack existing platforms, however, other experiences indicate that traditional user groups may have greater access to the platform and may overrule 'newcomers'. A third issue is the need for a third party to facilitate local platform processes in complex, multiple-use resource management scenarios.

Based on the empirical evidence of local platforms and the issues emerging from it, five discussion statements regarding the role of local platforms can be put forward. These statements will provide the basis for the discussion in the panel 'Multiple-use CPRs, collective action and platforms for resource use negotiation' at the 7th International Common Property Conference in Vancouver (July 1998).

Discussion statement 1:

Platforms for resource use negotiation in multiple-use CPRs must consist of representatives of the different user groups (i.e. individual user groups need to appoint a representative who negotiates on their behalf in the platform).

Discussion statement 2:

Platforms must be physically (i.e. place and timing) and culturally (i.e. constitution and operation of meetings) accessible to representatives of all user groups.

Discussion statement 3:

Platform performance depends on the level of organisation of individual user groups within the platform, the relations between the various user groups and the strengths and skills of the representatives of the individual user groups.

Discussion statement 4:

New platforms for resource use negotiation in complex, multiple-use CPRs must not be

built on existing platforms for single-use resource management.

Discussion statement 5:

Platforms must be facilitated by a third party to co-ordinate multiple user groups, to ensure continuity and to reduce or absorb the transaction costs of forming and operating the platform.

We want to emphasise that the above statements are *not* meant to be design principles or conditions for successful platforms for multiple-use CPR management, but, rather are a means to aid the discussion in the panel.

Conclusion

Platforms for resource use negotiation have been used world-wide as a mechanism to develop and enforce decision-making arrangements in common property regimes used by one user community. Recently, they have been used as a mechanism for social learning labour resource management and collective action towards sustainable resource management. This latter role has particularly proven successful in agricultural extension situations in both western and non-western societies (Röling & Wagemakers, 1998).

Evidence form this paper suggests that platforms can be an extremely useful tool to facilitate resource management in complex, multiple-use CPRs, where collective action is needed to balance the interdependent uses of different user groups to overcome problems such as degradation, alienation of traditional user groups and inter-user conflicts. In addition, we believe that platforms also have a great potential for CPR management by a single user community using a particular resource unit for a multitude of purposes. As Ruth Meinzen-Dick point out in her contribution to this panel, irrigation water is also used for other purposes, and access to water by the user community is defined by gender, class and residential differences. In such a scenario, different, specialised decision-making arrangements are required for each use, involving different users. Co-ordination of water use is required to balance its multiple uses.

Research on the role of platforms for collective action in multiple-use CPRs has only just started to develop. In this paper, we have presented some preliminary findings of our own research into the management of multiple-use CPRs and have formulated five discussion statements which, we hope, will stimulate the debate on the management of complex CPRs through platforms.

Further research into collective action in multiple-use scenarios is urgently needed. Already, the adverse impacts of imbalanced multiple use are emerging on CPRs world-wide. Ultimately, these problems have to be tackled at the operational level of resource management. In this context, literature on the role of 'advocacy coalitions' may prove to be very useful (e.g. Schlager, 1995). Advocacy coalitions are groupings of organisations with a common interest into pressure groups, using negotiation, networking and bargaining as principal tools to influence environmental management. An example of such a pressure group is the Cardigan Bay Forum (UK), which started of as a pressure group to protect the bottle nose dolphins in the bay. The Forum has evolved into a pro-active and professional organisation, consisting of 50 organisations (who did not normally meet nor co-operate), that deals with all environmental aspects of bay management and has a highly successful lobby for action remit (Scott, 1996).

Thus, advocacy coalitions are another type of platforms. By furthering our understanding how such groups evolve and operate, we may gain useful insights for the facilitation of collective action processes in complex, multiple-use common-pool resources.

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