

# **Virtuous or vicious? An institutional approach to the study of conflict in common pool resource governance**

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**Abstract:** Conflict is often necessary for achieving equitable institutional arrangements. We provide empirical evidence that shows that some of explanatory variables that are commonly associated with good community forestry outcomes (i.e. monitoring, rule making autonomy, organization, and social capital), are *also* to a statistically significant extent positively correlated with the occurrence of conflict. We argue that the conventional study of conflict in common-pool resource (CPR) governance settings should look for more explicit ways to incorporate rules and rule-making procedures into their models. Individual preferences cannot be amalgamated into a coherent group preference in any simple, straightforward fashion. Efforts to articulate group preferences depend on the institutions chosen to reach a compromise between individual opinions; these institutional arrangements can always be questioned and challenged by those whose preferences are poorly served by the new rules. Rather than claiming that conflict must be solved at all costs, we argue that conflict, under some circumstances, may be necessary for the eventual emergence of a more stable set of institutions that are capable of managing conflicts and differences in opinion in a ways that are nondestructive for CPR use. We propose a research agenda that includes a focus on institutions and their role in both causing and mitigating conflict.

**Running head:** The virtue of conflict in local resource governance

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## **1. Introduction**

The actors involved in the management of common pool resources (CPRs) represent roles, positions, skills, values and interest that are not necessarily compatible, and therefore potentially conflictive (Anderson et al. 1999; Agrawal and Gibson 1999). For example, in irrigation systems, the interests of tail-enders differs from those of head-enders (Ostrom 1992; Ostrom and Gardner 1993). In agricultural systems, cattle ranching is potentially conflictive with crop cultivation (Nygren 2000; Wade 1988). In ground water basins, city size and location may influence the potential intensity and relevance of opposing interests (Ostrom 1999 (reprinted)). In watersheds, classic conflicts stem from the difference between up- and downstream areas (Lubell et al. 2002; Ravnborg and del Pilar Guerrero 1999; Sneddon 2002; Kerr 2007), or from the different preferences of residential and agricultural water users (Bardhan and Dayton-Johnson 2002). In fisheries, the open access character of the resource bears the potential of conflict (Degen et al. 2000), so does stock mobility (Schlager et al. 1994). In forestry, different forest uses may conflict (Suliman 1999). More generally, the objectives of rich and the powerful may not be congruent with the needs and demands of the poor and the marginalized (Johnson et al. 2005; Baland and Platteau 1999; Golooba-Mutebi 2004).

Disagreement and subsequent conflicts between individual members and sub-groups within a group of CPR users are routinely reported in the literature (e.g. Wade 1988; Ostrom 1990; Vedeld 2000). However, conflictive CPR user groups do not necessarily fail to manage their resource successfully over an extended period of time (Gibson et al. 2000; Ostrom 1990). This may seem counter-intuitive, since CPR management requires collective action, which can be argued to be seriously hindered by disagreement and conflict (Olson 1965). Our research departs from this apparent paradox: If conflict undermines collective action, and if collective action in turn is indispensable for the sustainable governance of the commons, why is it that we

observe many examples where successful CPR governance goes hand-in-hand with reports of conflicts between its users? We argue that the articulation of disagreement and the subsequent potential of conflict within resource user groups are both inherent and necessary components of CPR self-governance arrangements, *and* a factor that complicates the organization of the collective action that is necessary to prevent over-exploitation of a commonly governed resource. Conflict may at the same time be indispensable and unwanted for the governance of the commons.

In our study, we particularly explore this paradox with regards to community forestry. We challenge the view that “conflict” and “sustainable CPR governance” are incompatible. We do so by providing robust empirical evidence that the more successful CPR user groups are also the ones that experience significantly more internal conflicts. We then continue to propose a research framework that is useful for unraveling this apparent anomaly. For our preliminary analysis, we use data collected by a network of scholars associated with the International Forestry Resources and Institutions (IFRI) research program.

## **2. Conventional approaches to conflict in CPR governance**

Common pool resources are natural or manmade resources that produce goods that are characterized by the fact that one individual’s use subtracts from another person’s use (like private goods, unlike public goods), and by the fact that it is impossible, difficult or prohibitively expensive to exclude others from appropriating the good (like public goods, unlike private goods) (Ostrom 2005). Although CPRs are under specific conditions vulnerable to the tragedy of the commons (Hardin 1968), it is now understood that there are many ways for CPR users to avoid resource over-exploitation and subsequently its degradation or disappearance (Ostrom 1990; van Laerhoven and Ostrom 2007). Scenarios shown to result in sustainable CPR governance, assign a protagonist role to collective action – e.g. the collective

investment in the crafting of rules regarding resource use and the enforcement thereof. The likelihood of the emergence of sustainable forms of collective action hinges on a group's capacity to credibly tame the free rider (Olson 1965). Trust constitutes a recognized force to do this (Rothstein 2000; Hoffman et al. 2002; Cook et al. 2005; Farrell and Knight 2003). Since conflict undermines trust, the likelihood for sustainable CPR governance is diminished, so the argument goes. Ostrom recognizes the importance of resource users having cheap and easy access to conflict resolution mechanisms as one of the eight institutional conditions (so-called design principles) for successful self-governance of CPRs (Ostrom 1990).

Hence, it is not surprising that the conventional central premise in studies of conflict and conflict resolution in CPR governance is that conflict can and must be solved at all cost, or else the "good governance" of the resource in question is in jeopardy. Disagreement needs to be settled prior to agreement about the institutional arrangements for CPR management. There is a tendency to view "conflict" and "CPR governance" as separate and only sequentially related: If there is a conflict, it needs to be solved before one can continue with the governance of the commons. This sequence is supposedly repeated when new conflicts arise. The resolution of conflict is often tied to *third party interventions (citations)*. Popular tools used by these outsiders include *stakeholder consultation* to arrive at a consensus among CPR users, and *zoning* to physically separate different resource uses and users from one another (Cit).

Several studies on conflict resolution associated with local resource governance report on the attempts of government, NGOs or donor agencies to opt for a participatory approach to the achievements of their goals (Beierle and Konisky 2000; Buchy and Hoverman 2000; Gregory et al. 2001; Lane 2001; Proctor 1998). These agencies see themselves confronted with a dilemma when the implementation of

participatory approaches turns out to lead to overt conflicts and disagreement between the various project or program stakeholders. A typical remedy then, is to resort to third party mediation. Bruckmeier (2005) for example, describes a conflict resolution approach according to which stakeholders and their interests are mapped (presumably by an outside facilitator), the existing conflicts are analyzed, and a method for conflict mitigation is developed in cooperation with the stakeholders. All these steps culminate in a proposal that is integrated in the overall system for the management of the resource. Many scholars refer to the importance of facilitating stakeholder consultations as a tool to avoid and to resolve conflict (Brown and Ekoko 2001; Hildyard et al. 1999; Ravnborg and del Pilar Guerrero 1999; Sandström et al. 2003; Schusler et al. 2003).

A popular solution to conflict that these institutions for stakeholder consultation, (whether crafted and facilitated by third parties or not) should look for according to many, is the accommodation of pluralist interests through some form of exclusive spatial delineation of different resource uses that are potentially conflictive (e.g. zoning). In West Africa the concept of *gestión des terroirs* is based on participatory stakeholder consultations that lead to the formulation of regional development plans that recognize different zones for different land uses (Turner 1999). In addition, in the context of the management of protected areas "buffer zones" are used to mitigate conflictive land uses (Fearnside 1999; Goldman 2003; Maikhuri et al. 2001; Veríssimo et al. 2002).

### **3. Are conflict and sustainable CPR governance incompatible?**

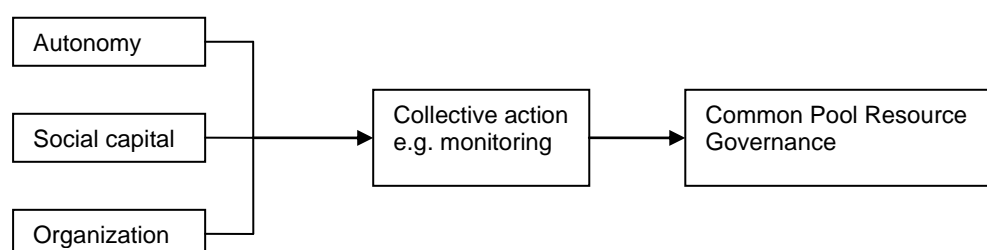
An implicit working hypothesis that appears to be the rationale behind many donor interventions and environmental policies in the global south is that conflict is irreconcilable with sustainable CPR governance. We question the validity of this claim and argue that not only are these compatible with each other, but the

achievement of sustainable governance of CPR may often require inter-group conflicts in order to change the existing governance arrangements.

### 3.1. Conceptual model and hypotheses

The literature mentions many explanatory variables that presumably explain variation in CPR governance performance (Kerr 2007; Wade 1988; Baland and Platteau 1996; Agrawal 2001), many implicitly or explicitly related with Ostrom's so-called design principles (Ostrom 1990). Without pretending to present an exhaustive overview of these variables, we select a few predictors that empirical studies have found to correlate strongly with the likelihood of success in CPR governance. These variables include monitoring (Gibson et al. 2005), a user group's autonomy to craft its own CPR governance rules (Hayes 2006), a user group's amount of so-called social capital (Pretty 2003), and a group's level of organization (Gibson et al. 2005). In a simplified way, one could argue that collective action in the form of group engagement in monitoring activities increases the likelihood of successful CPR governance arrangements (i.e. the resources stays intact over an extended period of time). The likelihood that groups engage in this particular form of collective action increases when they score high on autonomy, social capital and organization, respectively.

**Figure 1: Conceptual model**



First, in general terms, if conflict and CPR governance would mix as badly as suggested in the literature, we would expect to observe a negative correlation between these two variables. Secondly, we would expect a negative correlation

between conflict levels and the reported levels of engagement in monitoring, as well. Thirdly, non-compatibility of conflict and successful CPR governance could be argued to result in negative correlations between conflict on the one hand, and autonomy, social capital and organization, on the other.

### 3.2. Data and methods

The International Forestry Resources and Institutions (IFRI) research program is a global, interdisciplinary research network that links scholars at eleven research centers in ten countries. IFRI scholars collaborate to gather systematic data on local forest governance systems around the world. IFRI, by means of a set of carefully designed standard research protocols focuses on empirical analysis of the human-ecological interface. The IFRI database integrates biophysical with social data about factors that affect forest ecosystem dynamics in (Center for the Study of Institutions Population and Environmental Change (CIPEC) 2002; Ostrom and Wertime 2000 (1994)). Table 1 provides the descriptive statistics of the variables associated with user groups and their relationships with forest resources, as specified in our our conceptual framework.

**Table 1: Descriptive statistics of variables used in tests**

Variables	Description	N	Min	Max	Mean	Std. Dev.
Conflict	Has the group faced any issues engendering conflict, during the last two years? (yes=1)	470	0	1	0.30	0.458
CPR governance performance	Is the vegetation density of the forest used by this user group sparse (x=0) or dense (x=1)?	478	0	1	0.65	0.477
Autonomy	Is the user group responsible for making rules about forest use? (yes=1)	478	0	1	0.38	0.486
Monitoring	Does the forest user group engage in monitoring activities? (yes=1)	499	0	1	0.50	0.500
Social capital	Does the user group engage in forms of collective action not related to forest governance? (yes=1)	486	0	1	0.62	0.487

Organization	Is the user group formally organized? (yes=1)	492	0	1	0.39	0.488
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### 3.3. Results

Forest user groups that harvest from forests where according to the forester in IFRI research team the vegetation density is about average or (very) abundant relative to similar forests in the same area report, report conflict significantly more often than forest user groups that harvest from forests that have relatively sparse vegetation (23% compared to 33%, respectively). Of course, this correlation does not reveal much about the main causal direction. However, if one were to argue that forest conditions determine the level of conflict (rather than the other way around) one would subsequently expect to find more conflict in forests with sparse vegetation. This appears not to be the case. The significant association between the apparent success that a user group has governing its commons and the level of conflict that this group experiences during the process seems to represent the fact that based on the odds ratio forest user groups that are successful at maintaining their resource in tact are 1.68 times more likely to experience conflict than groups that are unsuccessful (see table 2).

**Table 2: Conflict and CPR governance outcomes**

	no conflict	conflict
unsuccessful CPR governance	116	34
successful CPR governance	189	93

$$\chi^2(1) = 6.23, p < 0.005$$

$$\text{Odds}_{\text{conflict, successful CPR mgmt}} = 93/189 = 0.49$$

$$\text{Odds}_{\text{conflict, unsuccessful CPR mgmt}} = 34/116 = 0.29$$

$$\text{Odds ratio} = 0.49/0.29 = 1.68$$

Oddly, the one thing that most scholars agree upon as being an almost certain escape from the tragedy of the commons – i.e. monitoring – is *also* positively correlated with the occurrence of conflict – i.e. the factor that is thought to undermine CPR governance success! There is a significant association between the level of monitoring that a forest user group engages in and the level of conflict that this group

experiences. This represents the fact that based on the odds ratio forest user groups that monitor are 2.19 times more likely to experience conflict than groups that do not (see table 3).

**Table 3: Conflict and monitoring**

	no conflict	conflict
No monitoring	177	48
monitoring	150	89

$\chi^2 (1) = 14.09, p < 0.001$   
 Odds<sub>conflict, monitoring</sub> =  $89/150 = 0.59$   
 Odds<sub>conflict, no monitoring</sub> =  $48/177 = 0.27$   
 Odds ratio =  $0.59/0.27 = 2.19$

There is a significant association between the autonomy that a group has to govern its commons and the level of conflict that this group experiences in the doing so. Forest user groups that have governing autonomy are 2.33 times more likely to experience conflict than groups that have no such autonomy (see table 4). We speculate that autonomous rule making involves the articulation of and negotiation about individual preferences. Whereas the imposition of rules by external authorities can be expected to mute differences, autonomous rule making inherently brings opposing interests out in the open. Given the positive correlation between autonomy and successful CPR governance, this is apparently not necessarily problematic.

**Table 4: Conflict and autonomy**

	no conflict	conflict
no autonomy	217	66
Autonomy	100	71

$\chi^2 (1) = 16.76, p < 0.001$   
 Odds<sub>conflict, autonomy</sub> =  $71/100 = 0.71$   
 Odds<sub>conflict, no autonomy</sub> =  $66/217 = 0.30$   
 Odds ratio =  $0.71/0.30 = 2.33$

Another strong candidate for explaining CPR governance success – i.e. social capital – is again positively correlated with conflict. When a user group reports to engage in multiple forms of collective action (i.e. besides monitoring) the likelihood that this group also reports to have experienced conflict, increases. Forest user groups that possess social capital are 2.55 times more likely to experience conflict than groups that do not (see table 5).

**Table 5: Conflict and social capital**

	no conflict	conflict
No social capital	136	32
Social capital	180	108

$$\chi^2 (1) = 16.98, p < 0.001$$

$$\text{Odds}_{\text{conflict, social capital}} = 108/180 = 0.60$$

$$\text{Odds}_{\text{conflict, no social capital}} = 32/136 = 0.24$$

$$\text{Odds ratio} = 0.60/0.24 = 2.55$$

A user group that is formally organized is not more likely to keep a lid on its internal conflicts, to the contrary. Organized groups report relatively more conflict than groups that are not organized. Groups with formal organization are 1.80 times more likely to experience conflict than groups without organization (see table 6).

**Table 6: Conflict and organization**

	no conflict	conflict
No organization	207	66
Organization	117	66

$$\chi^2 (1) = 7.53, p < 0.005$$

$$\text{Odds}_{\text{conflict, organization}} = 66/117 = 0.56$$

$$\text{Odds}_{\text{conflict, no organization}} = 66/207 = 0.32$$

$$\text{Odds ratio} = 0.56/0.32 = 1.80$$

Summarizing, when a user group has what it takes to successfully govern its CPR (i.e. autonomy, social capital, and organization), it is *also* more likely to confront issues that engender conflict, conflict that is supposed to undermine the likelihood of CPR governance success! That does not sound right.

#### 4. What do CPR user groups quarrel about?

IFRI data reveals that conflict in CPR governance is not necessarily *directly* related with conflicting interests. Heterogeneity in terms of ethnicity, religion and/or caste in itself is not significantly correlated with the occurrence of conflict. Also, cattle ownership, often mentioned as a trigger for conflict in forest communities (due to the apparent incompatibility between grazing, crop cultivation and forest use) is not significantly related to conflict, in our data. Saliency, measured as the percentage of

user group members that depend on the forest for their subsistence, is not a significant variable for explaining the emergence of intra-group conflict, either.

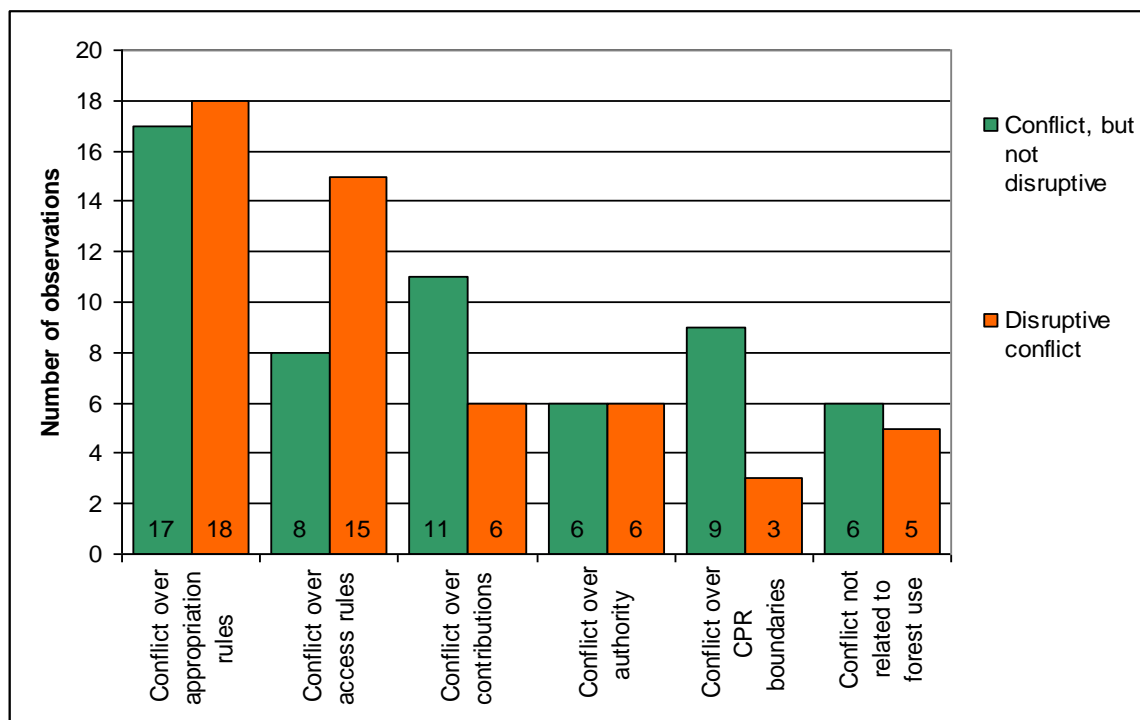
What then are the direct causes of conflict? In the case that forest users report to have faced an issue that engendered conflict, the IFRI survey asks forest them describe the nature of that conflict. We have proceeded to categorize the conflicts according to the following key (table 7).

**Table 7:**

<b>Type of conflict</b>	<b>Description</b>
Conflict over CPR boundaries	Where does the CPR begin, and where does it stop?
Conflict over access rules	Who can use the CPR, and who cannot?
Conflict over appropriation rules	How much can be harvested, when, and how?
Conflict over authority	Who has the authority to make decisions regarding the CPR and its use?
Conflict over contributions	What do participants need to contribute to CPR governance in terms of time, cash or kind?
Conflict not related to CPR governance	

The IFRI survey also inquires about the level of disruptiveness of the conflict in question – has the conflict been channelled in ways that are not disruptive of normal activities or not? An analysis of the combined data reveals that It seems that not the attributes of the resource (scarcity, diversity, resilience) or the attributes of the community (heterogeneity in preference ordering), but the rules crafted to deal with these attributes are the main – or at least, the direct – source of conflict (see figure 2).

**Figure 2**



## 5. An institutional approach to the study of heterogeneous preferences

Rather than applying a sequential "solve-the-conflict-and-get-on-with-it" approach, we argue that conflict can be a virtue for good CPR governance under certain circumstances. We propose an approach that looks at rules and rule-making procedures. Often, there is not a single way to accommodate multiple preferences about CPR resource use. If and how a consensus is reached depends on the rules chosen to come to that particular agreement. Acceptance of the consensus, and the subsequent non-occurrence of conflict, has much to do with the perceived legitimacy of the rule making procedures that were used to reach it. Second, once a more or less stable consensus about resource use exists, institutional arrangements that decide on if and how disagreement about operational rules is handled (or manipulated through agenda setting, the reformulation of issues, and leadership), explain the nature and potential intensity of ongoing or recurring conflicts.

Arrows (1951) showed that there exists no mechanism for translating preferences of rational individuals into a coherent group preference that simultaneously satisfies the

condition of universal admissibility, Pareto optimality, independence from irrelevant alternatives, and non-dictatorship. Arrow's Theorem leads to the prediction that, for example, in the US Congress the multiple preference orderings of legislators combined with multi-dimensionality of issues would rapidly lead to "cycling." However, in actuality, Congressional outcomes show considerable stability. Many have studied this intriguing discrepancy, and ended with institutions – i.e. the operational rules and rules about rule-making – as variables that explain variation in the attributes of conflict (Hall and Taylor 1996; Shepsle and Bonchek 1997).

How are institutions and conflict over CPR use related? When forest governance decision-making autonomy, to a greater or lesser extent, is devolved to the actual users of that forest, we expect something similar to what Arrow describes to occur. Choices have to be made about form and intensity of resource use, and about contributions that are necessary to provide and produce public goods such as monitoring. The community is likely to exist of individuals with different preferences. Imagine the following stylized and simplified situation: Three persons [A, B, C] have different preferences over the alternative forest uses: grazing (G), logging (L), and farming (F)<sup>1</sup> (see table 8).

**Table 8**

<b>Albert</b>	<b>Benita</b>	<b>Carlos</b>
Grazing	Logging	Farming
Logging	Farming	Grazing
Farming	Grazing	Logging

Preferences in the example are extremely heterogeneous. There is no majority that shares the same first preference, and alternative voting mechanisms (e.g. plurality runoff, a sequential runoff, or a Borda count) would still result in a draw. One could alternatively resort to a round-robin tournament, where each alternative is

<sup>1</sup> Note that the alternatives could just as well refer to the preference ranking regarding the location of a conservation area, the total amount of firewood that can be harvested in a given season, the amount to be paid in contribution, the time to be spent on collective forest maintenance tasks, etc.

sequentially pitched against the other. Nevertheless, it turns out that the "winner" in such a contest depends on the agenda that determines the sequence of voting (see table 9).

**Table 9**

	Start with...	Continue with...	And the winner is...!
Agenda 1: GLF (preferred by Carlos)	G vs. L => G wins	G vs. F => F wins	Farming
Agenda 2: FGL (preferred by Benita)	F vs. G => F wins	F vs. L => L wins	Logging
Agenda 3: FLG (preferred by Alberto)	L vs. F => L wins	L vs. G => G wins	Grazing

In addition, as it turns out, individuals can vote strategically, to have their preference win. If Carlos has agenda setting power, and picks Agenda 1 (for obvious reasons), Alberto (who really does not want any farming in the forest) could vote for L when this alternative is pitched against G in the first round (instead of this real preference G). This would lead to L being pitched against F in the second round, and beating F. (This is example is based on and adapted from Shepsle and Bonchek (1997) who picture 3 persons trying to decide how to spend their afternoon.)

In general, the institutionalist literature shows us that any choice environment in which (boundedly) rational individuals with preferences must decide on a coherent group preference is potentially conflictive. First, there are may be multiple majorities. Second, there are multiple ways of preference revelation through either sincere or sophisticated voting. Third, there are multiple ways for groups to decide by voting. Under such circumstances, institutions matter. No matter what the outcome of the collective choice process, there will always be reason for the "losers" to feel disgruntled, and to challenge that outcome. Consensuses are unstable, contestable and can be expected to be challenged (Arnold 1990; Baumgartner and Jones 1993; Gormley Jr. 1986).

What does this imply for the validity of conventional solutions that involve third party mediation, stakeholder consultation and zoning? First, third party intervention cannot be expected to lead to anything, unless a set of rules were imposed. Second, stakeholder consultation would not really lead to a solution either, since there is not "a" solution to most conflicts. Third, zoning would help solving the problem only if it would result in the parceling-up of the CPR into (semi) privatized lots. McKean (2000) has laid out why this may not always be a good idea.

### **An alternative framework to the study of conflict and CPR governance**

March and Olsen (1984), in a study on organization management, conclude that empirical research seems to indicate that "*conflict is endemic and that it tends to be interminable rather than settled by prior arrangement*" (p.742). It is often overlooked that the continuous articulation of disagreement, and thus the potential of conflict, is an inherent part of the dynamics involved in the crafting of the institutional arrangements necessary for collective CPR management. Herein lays an important paradox: Conflict may be necessary and unwanted at the same time. It is "necessary" because the decentralized, self-governance of CPRs requires the articulation of different individual preferences. It is "unwanted" because disagreement and conflict complicate collective action. Collective action is essential to escape the tragedy of the commons.

As explained earlier, there is no way to derive a coherent and stable group preference out of a number of diverging individual preferences, without resorting to questionable institutional arrangements. There will always be individuals with a legitimate reason to challenge these arrangements. Challenging institutional outcomes can be done for example by reformulating or reframing policy issues (thus altering the individual preference distributions), by challenging leadership (thus altering the agenda-setting power relations), or by questioning the voting mechanism,

or rule-making procedure (thus altering the expected outcome of public choice) or by seeking alternative venues for decision- and rule-making. A common strategy to force institutional outcomes to be reconsidered is simply ignoring the rules in use. Continuous adjustments to the institutional arrangements are likely to be necessary.

First, the conflict level at any stage (either when formulating the initial operational rules<sup>2</sup> or during the process of readjusting them) will be determined by the biophysical and material conditions of the resource itself. Is the CPR characterized by scarcity or by abundance? Is there a wide diversity of goods and services that can be used or harvested from the forest, or is resource use limited? Are diverse forest uses compatible or not? Is productivity distributed in a temporal and spatial even manner? Is the resource resilient, or vulnerable to shocks? Are the physical characteristics of the resource such that making exclusive access- and/or monitoring arrangements is relatively easy?

Second, conflict level will be determined by the attributes of the community, especially in terms of individual preference distributions. Are preferences about resource use wildly divergent? Are sub-groups with different preferences about resource use equal in size or power? In micro-economic terms, it could be said that individuals attach different marginal costs and benefits to CPR use. For example, an agreement that stipulates that all community households are to send one able-bodied man per month for maintenance work, represents different marginal costs to the family with only one son than to a family with five sons.

Third, the level and intensity of conflict is determined by the rules-in-use that constrain participant interaction. An institutional analysis of conflict should distinguish between operational rules, or the ever-day rules that direct, guide, or constraint

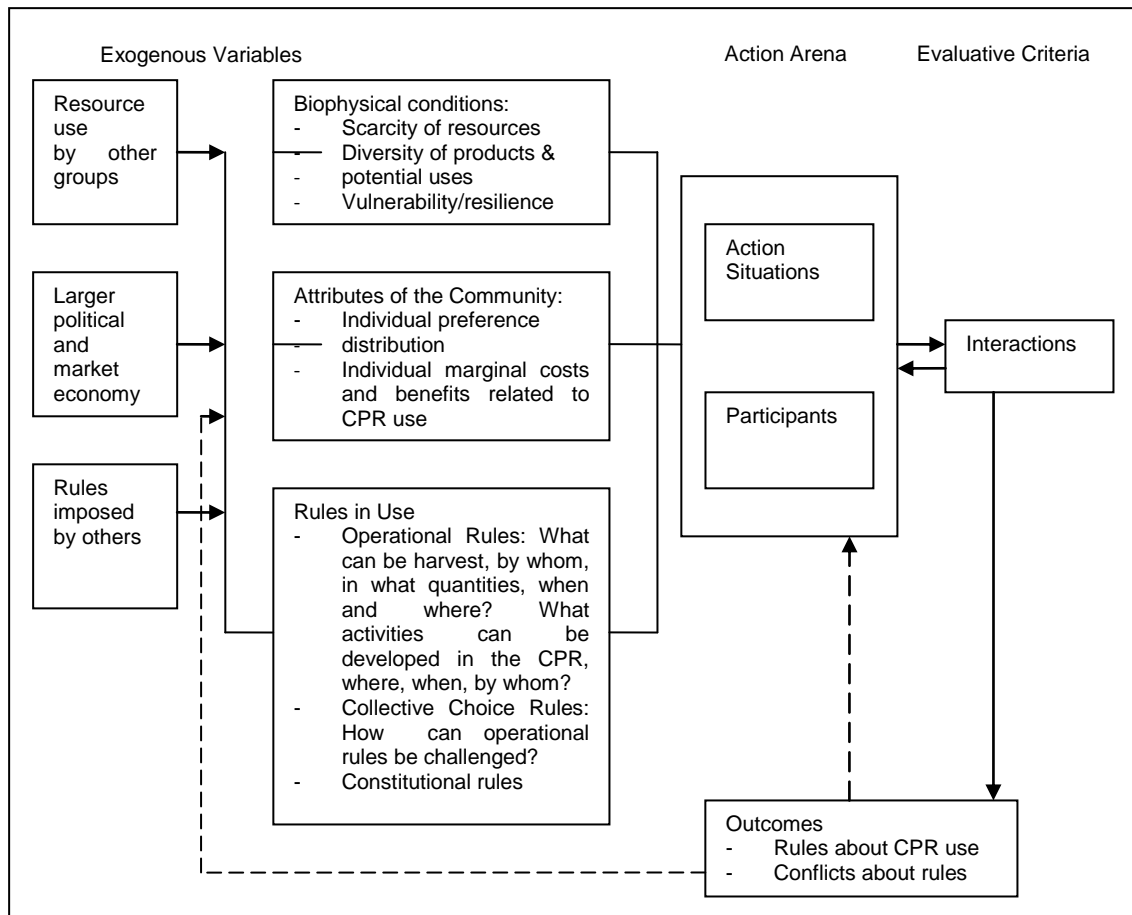
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<sup>2</sup> Operational rules are the every-day rules that guide, direct, or constrain individuals in their behavior.

individual behavior, and, collective choice rules, that is, the rules that determine who is eligible to adapt the operational rules, and what the procedures are to do that. Operational rules stipulate for example what can be harvest, by whom, in what quantities, when and where? Alternatively, what activities can be developed in the CPR, where, when, and by whom? Collective choice rules set the margins for challenging operational rules.

Institutional development is a dynamic process; the use of the resource in itself (by the user group, and by others) will alter its biophysical attributes, and thus the very premises upon which the initial agreement may be based. The attributes of the individual user group members is constantly subject change, for example due to their participation in the larger (political and market) economy. Related to the above – but also associated with exogenous factors – the rules that put a constraint on group interactions in general and on resource use in particular will be contested as time passes, both by individual group members and by external authorities. In figure 3 (based on the Ostrom's (2005) Institutional Analysis and Development (IAD) framework ), we try to graphically capture these dynamics:

**Figure 3: Institutional Analysis and Development Framework and “conflict”**



## 6. Conclusion

The study of conflict in CPR governance conventionally focuses on conflict *resolution*; Conflict is perceived as a signal of the absence of consensus. This in turn is conventionally expected to hinder the collective action that is necessary to prevent a tragedy of the commons from happening. In many analyses, conflict is tied to a combination of *heterogeneous preferences* and *resource scarcity*. In an attempt to solve the conflict, it is often suggested that stakeholders with conflicting interests are brought together (often by *third parties*), to discuss their disagreements and to reach a new consensus. That consensus often includes the designation of geographically separated zones to competing or incompatible forms of resource use.

In this paper, we have pointed out that this approach has some important shortcomings. First, conflict and sustainable CPR governance are not necessarily

incompatible. The self-governance of forest resources inherently requires the articulation of, and negotiation about individual preferences. Contrary to centralized resource governance, where rules may be imposed (-regardless of whether these rules are effective or efficient-), autonomous rule making inherently, self-organization and the active involvement in multiple forms of collective action brings opposing interests out in the open. We observe that autonomous, well-organized groups that are endowed with high levels of social capital are both more likely to be conflictive *and* more likely to be successful at governing their CPR!

We suspect that apart from focusing on the attributes of the user group (e.g. heterogeneous preferences), and/or on the attributes of the resource (e.g. scarcity), it is crucial that the study of conflict in CPR contexts includes an explicit emphasis on rules and rule-making procedures. We argue that conflict may a part of the process that leads to the emergence of a more or less stable institutional arrangement for the governance of the commons. Many of the conventional tools for dealing with conflict, such as stakeholder consultation or zoning, may in fact obstruct this process. It is important to learn to distinguish between those sorts of conflict that will eventually lead to the adjustment of operational rules toward an equilibrium that in the eyes of individuals better reflect their divergent preference orderings and more sustainable resource use on the one hand, and those sorts of conflicts that are mainly disruptive and prohibitive to collective action, on the other.

Policy makers may be reluctant to grant rule-making authority to communities when this appears to increase the likelihood of conflict. An important theme on the conflict research agenda is to provide tools to distinguish between virtuous and vicious types of conflict. The answer to the question what sets one conflict apart from another, is tied to the study of rule-making procedures. Although throughout the article, we have posited some ideas about conflicts and the sustainable self-governance of natural

resources, at the end of this paper many questions remain. Respecting a long academic tradition, the last sentence of this paper will therefore be “more research is still required”.

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