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ABSTRACT

Commons scholarship seems preoccupied with *self*-governance. It focuses on showing that common pool resource (CPR) appropriators do not always need outsider-assistance in order to stay clear of the tragedy of the commons. However, at the same time we observe the presence of a large number of non-governmental organisations (NGOs) that consider community organisation – i.e. the organisation of collective action in community institutions – their core business. In this research we firstly develop and apply a framework to analyse the *activities* of 20 NGOs in India and compare these to indicators for collective action in a community-led CPR governance context, derived from the commons literature. Secondly, we assess variation in NGOs' *approaches to institutional change*, by developing and applying a typology that distinguishes between (i) perspectives that see institutional change as predominantly determined by *structure* (institutional design) or *agency* (institutional crafting), respectively, and between (ii) perspectives that perceive institutions as either subjective or objective to the institutional change agent, respectively. Our results show that NGOs do not get involved in activities aimed at influencing *functioning* collective action such as crafting or designing rules. They do involve themselves in activities aimed at strengthening *durable* collective action such as forest management trainings. Furthermore, all NGOs show a predominantly *subjective* approach to institutional change. Their long-term focus puts the communities themselves firmly in the institutional change agent position. The results along the design–crafting dimension show more diversity and dynamicity. Eight NGOs in our sample take a strong institutional *crafting* approach to their work, whereas only three focus predominantly on institutional *design* and nine show elements of both crafting and designing. The majority of the NGOs highlighted how their approach can change depending on the stage in the intervention. Our results highlight the dynamic and diverse institutional settings the NGOs operate in which both moderates their approach to institutional change and determines their choice of specific activities.

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1. Introduction

In the commons literature, governing the commons is to a large extent seen as synonymous with *self*-governing the commons. This literature has shown that when self-organised communities manage to develop their own institutional arrangements to regulate the use of common pool resources (CPRs, such as forests) they often outperform government or market solutions to unsustainable commons governance (e.g. Van Laerhoven, 2010; Pretty and Ward, 2001; Ostrom, 1990; Poteete and Ostrom, 2004; Sunderlin et al., 2005). It is largely comprised of theoretical and empirical studies exploring the critical conditions under which communities are able to *self*-organise and develop durable community institutions.

However, at the same time we observe the presence of a large number of non-governmental organisations (NGOs) ranging from local community based organisations to international organisations that consider community organisation – i.e. the organisation of collective action in community institutions – their core business (Mitra and Patnaik, 1997; Chomitz et al., 2007; Pretty and Ward, 2001). Some initial studies suggest that the presence of NGOs can have a positive effect on the success of community institutions (e.g. Springate-Baginski and Blaikie, 2007).

The preoccupation with *self* governance and the ensuing lack of attention for situations in which external actors (such as NGOs) work with communities, leads us to argue that commons scholarship is missing an opportunity to provide the kind of knowledge which could be useful for NGOs endeavouring to support community institutions. Whilst there is a rich body of literature dedicated to studying the most important factors influencing *self*-governance of CPRs, we do not yet know which of these factors can and are being manipulated by NGOs, nor how they attempt this in their interventions. Such a mismatch between the knowledge being provided by science, and the knowledge required by society has been noted elsewhere (Cash et al., 2003; Kueffer et al., 2012).

To some extent, the commons literature recognises this discrepancy. Agrawal (2001) notes the relative negligence in the commons literature for understanding the influence of external actors on local institutions. Likewise, Andersson (2013) observes that although previous studies have identified the importance of external organisations in supporting local efforts to self-govern forest resources, there have been relatively few empirical analyses that show what works when. According to Ostrom and Nagendra (2006), understanding what types of interventions will help support or create local institutions to protect current forests and encourage positive local forest transitions is one of the key challenges in current forestry research. Firstly, our research takes up this challenge

by giving central stage to the *activities* of NGOs working in community-led CPR governance.[1] NGO activities are partly determined by how they view their role in institutional change processes. Therefore we secondly draw on institutional change literature, and specifically the distinction made between institutional crafting and institutional design (Cleaver, 2002; Alexander, 2005) in order to enrich our discussion on the approaches NGOs take to working with communities.

Our objective is to (i) analyse the types of activities NGOs working in this context report to carry out and why, (ii) to compare these findings with the commons literature and (iii) to analyse the approaches to institutional change taken by the NGOs. Our twofold analysis encompasses both the specific NGO activities and their general approaches to institutional change. To this purpose, we engage in the following analytical steps:

- *Step One*: We map out the range of activities NGOs across three states in India employ when supporting local level community-led CPR governance, specifically within the field of community forestry.
- *Step Two*: We analyse which of the manipulable indicators for collective action in a community led CPR governance context identified in the commons literature the NGOs claim to target with their activities. As part of this analysis we explore the reasons given by NGOs as to why they choose to employ certain activities and refrain from others.
- *Step Three*: We develop a typology of NGO approaches to institutional change. We use this typology to draw from our analysis of the specific NGO activities (steps one and two), the general approaches to institutional change employed by the NGOs.

Our analysis of NGO approaches to supporting community-led CPR governance can assist commons scholars in their attempt to expand their reflections to include situations in which pure *self* governance of the commons is not the reality – we suspect that the number of such situations is significant. It also provides a first step towards bridging the gap between the knowledge being generated in the commons literature (supply driven science) and the knowledge which could assist NGOs in successfully supporting communities with governing their commons (demand driven science).

2. Literature review

2.1. Forests as commons: the state, the market or do-it-yourself?

Forests can be framed as CPRs when they have a high level of both subtractability and excludability. CPRs are vulnerable to collapse because individual users gain the full benefits of using the resource but only bear a portion of the costs resulting from overuse and under-investment. According to Hardin (1968), this 'tragedy of the commons' can only be avoided either by privatising the resource or by making it subject to government regulation. Since the 1980s, a vast amount of empirical research has successfully challenged

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[1] We recognise the heterogeneity of the category 'NGOs'. The broad UN definition of NGOs as ''any non-profit, voluntary citizens' group which is organised on a local, national or international level'' places NGOs in a residual category (Uphoff, 1993) which includes small community based organisations alongside international professional organisations with a large paid staff base such as WWF or Oxfam.

this view (Van Laerhoven and Ostrom, 2007; Berge and Van Laerhoven, 2011; Van Laerhoven and Berge, 2011). Commons scholars have found that under certain conditions, institutions crafted and enforced by local forest users themselves, can pose a viable alternative to externally imposed rules or privatisation (Dietz et al., 2003; Ostrom, 1990). Their focus has been on understanding the principles for institutional design which can lead to communities successfully self-governing their commons (Agrawal, 2001).

2.2. External organisations: do-it-yourself – but with a little help from your friends?

Although external organisations, such as NGOs, could play a pivotal role in facilitating self-governance, it is also recognised that as of yet we do not know exactly what this role could be (e.g. Ostrom and Nagendra, 2006; Andersson, 2013). NGOs are often commended by both economists and development specialists for alleviating rural poverty, but Fisher (1997) argues that generalisations about the advantages of NGOs need to be empirically researched in order to critically evaluate their aim of 'doing good'. Baviskar (2001) and Kudva (2005) also report that in the Indian context we know little of what NGOs are actually doing on the ground. Some of the limited number of studies on NGOs in a context of community forestry are worth mentioning here as they point towards specific activities NGOs are engaged in. Ito et al. (2005) found that awareness of community forestry management in Nepal was least where NGOs were not involved. Ballabh et al. (2002) found that outside actors can help in resolving conflicts. Saigal (2000) points towards the role of NGOs in the documentation of the program and in the encouragement of participation of vulnerable groups. Wright and Andersson (2013) conclude that in Bolivia there is no significant relation between NGO importance (as rated by the local users) and the presence of community forestry institutions. Andersson (2013) finds that there is variation in the extent to which forest user groups in Bolivia prefer NGO and municipal government support over regional and national government assistance. User groups that experience more uncertainty – e.g. in terms of tenure, conflict and economic inequality – prefer municipal government assistance to NGO support. We notice that none of these studies has systematically attempted to compare NGO activities with the rich commons literature on the multiple indicators of collective action for developing and maintaining community institutions in a CPR context.

2.3. Manipulable indicators for functioning and durable collective action

Agrawal (2001) derives from the commons literature a total of 35 critical enabling conditions for long lasting community led CPR governance. Only a selection of the conditions easily lends themselves to being manipulated by means of NGO interventions. For example, the manipulability by an NGO of the condition 'shared norms within the group' is limited. On the other hand, 'group awareness of the rules of the institution' could be a factor that NGOs can potentially target (see Appendix 1 for the full list of critical enabling conditions from which we selected those which are manipulable by

NGOs). Barnes and Van Laerhoven (2013) study the effect of external-agent involvement on the expected durability of *Joint Forest Management* committees in Maharashtra, India. The distinction made here between specific indicators for *functioning* and for *durable* collective action complements Agrawal's (2001) review. Our conceptual framework for step two in the analysis is presented in Table 1. We suggest for each indicator the possible activities an NGO could undertake as part of their intervention.

2.4. Institutional change: through design or crafting?

For step three in our analysis we shift our focus from specific NGO activities to the more general approaches to institutional change taken by the NGOs. Institutional change refers here to the initiation and development of forest community institutions for collective action in a CPR context. By drawing on the institutional change literature to analyse the different NGO approaches we move away from the widely employed static typologies of NGOs which categorise NGOs according to characteristics such as size, location, funding body, or stated objectives (see Yaziji and Doh, 2009 for an overview of such categorisations). These static typologies have received criticism from scholars such as Chhotray (2007) who refers to the fallacy of the binary distinction between NGOs as 'political entrepreneurs' and 'development agents' and Thomas et al. (2010: p. 368) who pose that NGOs can show 'multiple identities' encompassing selective collaboration with the state, gap-filling and posing alternatives. In contrast to these static NGO typologies, we argue that the institutional change literature allows us to create a typology of NGO approaches which can capture time and context dependent diversity in approaches *within* individual NGOs in a meaningful way. Using this typology as an analytical tool complements our analysis of activities conducted in steps one and two as it adds a second layer to the analysis to help explain strategic choices made by NGOs regarding the types of activities they employ and how they choose to carry these out.

Firstly, we draw on the debate in the institutional change literature on the extent to which the potential for institutional change is predominantly determined by either structure or agency. Those advocating for the importance of structures in society in determining behaviour argue that actors act strategically and through calculus based on and determined by structural features, such as pre-existing, nested institutional arrangements (Saravanan, in this issue). They emphasise that institutions need to be purposefully designed in order to steer actor behaviour in a particular direction. NGOs holding this view would direct their efforts at institutional *design* through a focus on introducing rule structures. Alternatively, those that highlight the role of agency emphasise that efforts to bring institutional change need to be directed at enhancing the capability of CPR users to engage in do-it-yourself institutional bricolage (Cleaver, 2002). This institutional *crafting* perspective holds that institutions which respect time-and-place particularities of, and interactions between, both the social and the biophysical system can be crafted, proactively. NGOs holding this view of institutional change would direct their efforts at enhancing the capabilities (agency) of communities to *craft* their own institutions.

	Indicator	Description of the indicator	Possible NGO activity
Resource and group characteristics			
1	Well-defined boundaries of the resource[a]	The forest boundary is clear for resource users and for outsiders (neighbouring villages, state officials, companies etc.)	Mapping, markers
2	Past successful experiences – social capital[a]	The CPR users have experience working together to address other less complex issues	Previous or parallel support of the resource users in self-organisation to address smaller tasks
Indicators of functioning CA			
3	Meetings[b]	CPR users have set up a meeting structure – formal or informal – and meet on a regular basis to discuss CPR governance	Support and training
4	CPR appropriation rules-in-use[c]	CPR users have crafted a set of rules regarding CPR use	Support and training
	a) Rules are simple and easy to understand[a]	The rules have been crafted and formulated in a manner that can be understood by the CPR users	Advice
	b) Locally devised access and management rules[a]	CPR users have devised rules about who can access the forest, what can be taken, how and when	Advice
	c) Ease in monitoring and enforcement of rules[a]	CPR users have set up a monitoring mechanism to enforce CPR appropriation rules	Advice, support and training
	d) Graduated sanctions[a]	CPR users have a system to fine rule violators according to the severity of the infraction	Advice
	e) Availability of low cost adjudication[a]	Conflict resolution mechanisms are in place within the communities	Support in setting up conflict resolution systems, active involvement in resolving dispute cases
	f) Accountability of monitors and other officials to users[a]	There is a system in place which holds the forest monitors accountable to the community	Advice
	g) Restrictions on harvests matched to regeneration of resources[a]	Rules crafted by CPR users on forest use are congruent with the forest type and regeneration patterns	Providing science based information on regeneration patterns and the expected result of restriction rules
Indicators of durable CA			
5	Understanding of relevant state policies[b]	Actors – CPR appropriators as well as external, intervening actors – understand the rules, amendments, entitlements and responsibilities that are stipulated in the state policies concerning the CPR and the local level CPR rules are crafted accordingly	Informing and training, connecting CPR appropriators with state officials
6	Wide awareness of CPR institutions and organisation[b]	All CPR users – not just the committee members – are aware of the activities of the committee and the rules it issues	Support and training
7	Inclusion of all CPR users' identities and interests[b]	All CPR users (encompassing the diversity of their identities and interests) are meaningfully included in the activities and decisions of the local organisation	Support and training
8	Perceived management capacity of CPR users		
	(i) Confidence in own capacities[b]	CPR users are confident that they have the ability to continue their collective action without depending on external agents	Support and training in soft-skills and technical forest skills
	(ii) Appropriate leadership[c]	Presence of young CPR users in a leadership position, familiar with changing external environment and connected to local traditional elite	Leadership training
	(iii) Perception that local authority is not undermined by external actors[c]	Confidence that the state government and other external actors support the CPR users' institutions and this will remain the same in the future	Facilitating discussions between CPR users and state actors

Table 1 – Manipulable indicators of collective action in a community led CPR governance context.

Table 1 (Continued)

	Indicator	Description of the indicator	Possible NGO activity
9	Appropriate connections[b]	CPR users are connected with external agents and other communities of CPR users which will allow for knowledge transfer in both directions, concurrence on conflicts of interest, the building of trust and reciprocity	Intervillage workshops, facilitating state and CPR users interactions, visits to other villages, liaison between actors to reduce conflict
10	Sufficient financial and material resources[c]	CPR users need sufficient (access to) financial and/or material resources to operate	Financial or material contributions
11	Confidence that future benefits will be fairly allocated[c]	Participants in collective action are confident that their actions will benefit them in the future in that they will be allocated on a fair basis	Support and training
12	Supportive external environment[a]	Autonomy of CPR users to manage the CPR should be recognised across all levels of relevant state departments.	Advocacy and lobbying

[a] Indicator taken from Agrawal (2001).
[b] Indicator taken from Barnes and Van Laerhoven (2013).
[c] Indicator mentioned in both Agrawal (2001) and Barnes and Van Laerhoven (2013).

Secondly, we draw on the notion that institutions can be either *exogenous* or *endogenous* to the change agent (Alexander, 2005). When they are exogenous "the object of the undertaking– the institutional structures and/or practices that are to be changed – is outside the institutional change agents' own institutional context" (Alexander, 2005: p. 211). When they are endogenous it is assumed that the intended institutional change would become effective only through reshaping the agents' perceptions and cognition. Applied here, an NGO holding an *exogenous* perspective would view themselves as not being part of the local level institution and therefore the ultimate change agent is the community. An NGO taking the *endogenous* perspective would see themselves as being part of the institution and therefore they themselves are a change agent.

Based on this discussion, we propose a typology of NGO approaches to institutional change in the commons (Fig. 1). We see this as an analytical tool to be used for studying diversity in NGO approaches, rather than a static framework for categorising NGO activities.

The typology leads to four archetypical perspectives on whether and how NGOs can change forest community institutions in such a way that a tragedy of the commons can be avoided.

I. *Objective institutional design*: The NGO itself is the primary change agent. Activities are focused on creating incentives through designing institutions. It applies a generic approach, imposing institutional arrangements that have proven to work, elsewhere.

II. *Subjective institutional design*: Ultimately, the target community is the primary change agent. The NGO applies an approach that facilitates a reflective-dialogic process among resource users in order to design locally appropriate institutions.

III. *Objective institutional crafting*: The NGO itself is the primary change agent. It applies a generic approach using input from local analyses (e.g. participatory appraisal techniques) aimed at crafting customised training modules to empower local communities.
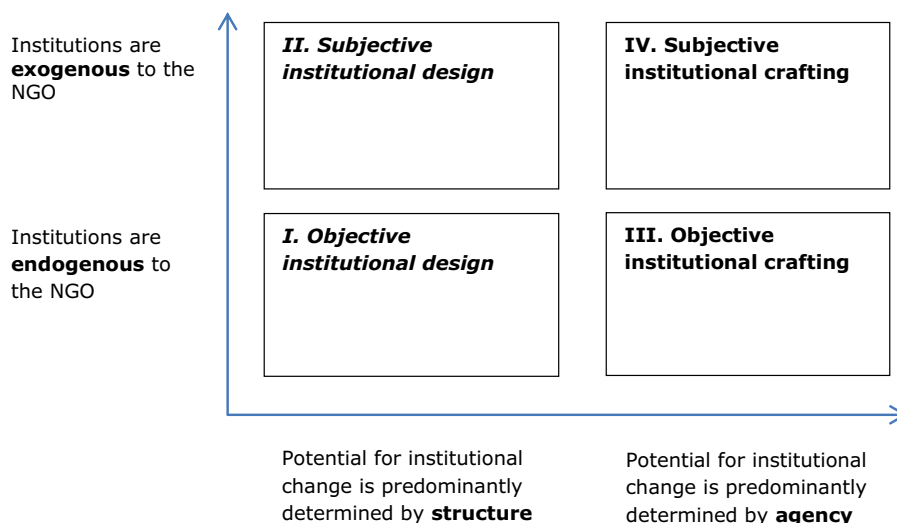

Fig. 1 – A typology of NGO approaches to institutional change.

IV. *Subjective institutional crafting*: Ultimately, the target community is the primary change agent. The NGO applies an approach that facilitates a reflective-dialogic process among resource users aimed at the empowerment of communities (e.g. through action research techniques).

3. Methodology

We choose India for the following two reasons. Firstly, because of the large numbers of poor people living in forested areas who are affected by policies advocating decentralised forest management (Springate-Baginski et al., 2012; Sunderlin et al., 2005) and secondly, as since the 1980s there has been a proliferation of NGOs working on development issues. This trend was propelled by the growth of decentralisation policies (such as the Indian National Forest Policy of 1988), shifts in the development discourse away from state driven developmentalism towards bottom-up society-led development (Ghosh, 2009; Baviskar, 2001) and critique of the regulatory top-down approaches of the Forest Department (Ghate, 2003).

We selected three neighbouring states with different biophysical conditions and histories of forest institutions. These contextual differences create the possibility of interesting variation in the approaches employed by NGOs. All three states, namely Maharashtra, Andhra Pradesh and Odisha, are chosen as their rural communities contain a large number of *adivasi* people (tribal groups, see Bose et al., 2012 for a discussion of the term) dependent on the forestland meaning there is a greater chance of NGOs being active in community forestry. Odisha provides an interesting comparison as community forestry enjoys a longer and strong history in the State and the visible fruits of forest protection are seen on a much shorter timescale.

NGOs form the unit of analysis of the study. We purposefully selected 20 NGOs across the three states that explicitly aim to support community institutions with managing their forest. No complete and accurate list of NGOs working in community forestry in India is available, therefore we identified the NGOs through the snowball technique. Following Gerring's (2007) crucial case research design, we identified NGOs whose activities we can most expect to conform with the manipulable indicators of collective action identified in the commons literature. Conformance with the literature does not necessarily mean that NGOs draw on the literature to inform their choice of activities. If the activities of the selected NGOs do not conform well with the manipulable indicators of collective action identified in the literature, then we can reasonably expect that there would be even less conformity between the activities of NGOs who do not explicitly aim to support community institutions, and the commons literature. We do not claim that our results are representative of all NGOs across the three states with forest community institutional support as their explicit aim. We have attempted to include both large and small NGOs and both tribal and environmental NGOs but acknowledge the underrepresentation of small grassroots organisations and other forms of organisations (such as forest worker unions, see Joshi, 1999), which have also been active in supporting forest community institutions. However given the exploratory nature of this research we are able to identify the main patterns in NGO activities and approaches to institutional change taken. The NGOs selected include small community based organisations, as well as state level, regional and international organisations.[2]

For steps one and two in our analysis, we operationalised the twelve manipulable indicators of collective action (see Table 1) by translating them into a standardised questionnaire, which formed the basis of semi-structured interviews with the NGOs. We confronted respondents with the respective indicators, and asked them if they engaged in activities that had the purpose of addressing these indicators. In case they did, we asked them why they did so and requested examples of such activities. In case they did not, we asked them for the reason(s) for this. Our approach of (i) using the indicators rather than proposed activities to guide interviews, and (ii) requesting examples and reasons for (not) conducting activities, allowed us to avoid leading respondents to name particular activities and reduces the possibility of self-reporting bias in our results.[3]

For step three in our analysis we coded the NGO responses in order to devise the general approach(es) they take to institutional change. Three data types were used: the types of activities conducted; the ways in which these activities were carried out and the reasons given for not choosing to conduct activities under a particular indicator. When an NGO spoke of facilitating discussions with communities (or used various synonyms of facilitating) they can be referred to as employing a *subjective* approach. When in contrast an NGO spoke of the imposition of rules, procedures and/or organisation forms (e.g. as stipulated in Joint Forest Management legislation), or training programmes in which the NGO itself determines the content, we labelled it as using an objective approach. If an NGO focussed on setting up local rule structures or aimed to influence the wider institutional setting, they can be deemed as taking a *design* approach, as opposed to a *crafting* approach in which general community empowerment and support in individual interest development is central. In addition, the reasons given as to why activities were not undertaken allowed us to determine whether NGOs felt communities should be responsible for this indicator (in which case, this was evidence of a *subjective* approach) and whether approaches were time and place dependent.

We collected our data between March and September 2013 through a combination of phone and face-to-face interviews with a senior staff member of each NGO involved in strategy decisions regarding the activities employed. The interviews lasted approximately 60–90 min and were conducted in English or Hindi as required. Whilst we acknowledge the possibility of self-reporting bias, by using the indicators of collective action as the framework for the questionnaire rather than naming potential NGO activities, we avoided leading the NGOs' responses towards specific activities. Additionally, five expert interviews were conducted with researchers within academia, research institutes or NGO network organisations. In Odisha, group discussions with community members were conducted in six villages. NGO reports, their own publications and internal and external NGO reviews were studied in order to corroborate NGO responses to the questionnaire.

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[2] See Appendix 2 for a list of the NGOs we interviewed.
[3] The survey is provided in Appendix 3.

4. Results

4.1. Step one: analysing NGO activities

Twenty distinct but related activities were mentioned by the NGOs interviewed. The list of activities can be neatly split into two groups: ten that were mentioned by more than half of the NGOs and ten that were mentioned by five NGOs or fewer (Table 2).In the rest of the analysis we focus on the ten activities mentioned by the majority of the NGOs. We analyse whether these activities were seen by the NGOs to contribute to achieving the manipulable indicators of collective action in a community led CPR governance context as presented in our conceptual framework in Table 1.

4.2. Step two: comparing NGO activities to the manipulable indicators of collective action

4.2.1. Activities related to the resource and user group characteristics

15 NGOs actively support communities with defining their resource boundaries either through mapping using GPS or employing participatory methods involving community members. This activity was mainly seen as an important element in the early stages of the NGO intervention. Most of the NGOs interviewed had been present in the area for several years but the types of projects varied, therefore it is not possible to state whether their previous projects had already influenced the user groups in terms of levels of social capital.

4.2.2. Activities contributing to functioning collective action

The NGOs conduct limited activities corresponding with indicators of *functioning* collective action. Only one of the NGOs chooses to get involved in more than half of the indicators of functioning collective action. The vast majority of the NGOs stated that decisions on the day-to-day management should be made by the community and not by an NGO, as communities are best placed to decide on appropriate context specific rules and they should be encouraged to take ownership of their decisions. Indeed only two of the NGOs were actively involved in discussions regarding rule making and no NGOs were involved in decisions regarding monitoring or the accountability of those monitoring, beyond facilitating discussions on these aspects. The 'availability of low cost adjudication' indicator shows some variation: twelve of the NGOs actively involve themselves in resolving disputes, of which half only get involved in disputes with external actors. We draw from this that the vast majority of NGOs are not involved in internal conflict resolution, which was seen as part of the day-to-day management.

4.2.3. Activities contributing to durable collective action

In contrast to the picture painted above on indicators of functioning collective action, the results clearly show that the NGOs feel that their activities contribute to multiple manipulable indicators of *durable* collective action. Table 3 compares the activities that the majority of the NGOs actively employ with the manipulable indicators of durable collective action to which the NGO respondents felt these activities contributed.

NGOs combine a wide range of activities which can be categorised as *internal* capacity development, with efforts to

Table 2 – NGO activities: most mentioned (≥11) versus least mentioned (≤5).			
Activity frequency ≥ 11	No. NGOs	Activity frequency ≤ 5	No. NGOs
Informing committees about government policies	19	Conducting research	5
Providing management trainings (e.g. book-keeping, market linkages)	16	Active in NGO network	4
Supporting communities in liaising with officials/ understanding the language of officials	16	Guiding through claims for land	4
Actively discussing institutional aspects with the committees (e.g. participation, transparency)	15	Aligning forest governance plans (including forest boundaries) with official plans and boundaries	3
Arranging exposure visits (visits to other communities to exchange experiences with forest governance)	15	General capacity building (not training)	3
Training lower level officials	15	Supporting federations of communities	3
Mapping out forest boundaries	15	Stimulating community reflection	3
Lobbying at district, state or national level	14	Training local volunteers	2
Support of youth or interest development	11	Supporting in court claims	1
Providing technical forest trainings	11	Writing a book with youth	1

Table 3 – Main NGO activities – acclaimed link with indicators of durable collective action.

Top activities mentioned by the NGOs	No. of NGOs	Indicators of durable collective action corresponding with each activity as acclaimed by the NGOs (figures show number of NGOs acclaiming this link between activity and indicator of durable collective action)								
		Understanding policies	Wide awareness	Inclusion of users' identities	Perceived management capacity			Confidence in fair allocation of future benefits	Appropriate connections	Supportive external environment
					Leadership	Confidence in capacities	Perception authority not undermined by external actors			
Informing committees about government policies	19	19			1					
Providing management trainings (e.g. book-keeping, market linkages)	16					16	8	5	5	
Supporting communities in liaising with officials/ understanding the language of officials	16	5			10	12	7	3	12	
Actively discussing institutional aspects with the committees	15		15	14		3	2	3		
Arranging exposure visits	15		15		6				10	
Training lower level officials	15									15
Lobbying at district, state or national level	14									14
Support of youth or interest development	11				11					
Providing technical forest trainings	11					11			5	

enhance the communities' relations with their *external* institutional environment. Under *internal* capacity development we refer to activities aimed at supporting individual and social capacities within communities to successfully manage their forests:

- formalised trainings in aspects of forest management (16 NGOs), mainly regarding recordkeeping (14 NGOs) or technical forest management skills (11 NGOs)
- frequent informal discussions with committees on institutional aspects such as the involvement of the wider community in forest management (15 NGOs)
- exposure visits: arranging for committee members to visit other communities in order to learn from each other (15 NGOs) and
- general support and stimulation of individuals showing an interest in forest management (11 NGOs).

According to the NGOs, a promising packet of activities directed at *internal* capacity building would best include: supporting communities in liaising with officials/understanding the language of officials, actively discussing institutional aspects with communities, informing committees of government policies and arranging exposure visits, possibly supplemented with forest management or technical forest training where appropriate.

Activities which can be categorised as directed towards the linkages between communities and their *external* environment include:

- training lower level officials (15 NGOs)
- lobbying at higher levels of government (14 NGOs) and
- assisting communities in understanding official language (16 NGOs) or policies that could have a large influence on the communities (19 NGOs).

We found that 11 NGOs are working with relevant state departments through providing trainings in participatory working techniques or organising workshops and *simultaneously* lobbying at district, state or national levels to advocate for the rights of communities to manage their forest resources. One respondent phrased this dual role as "walking a mid-path between pushing for change and stimulating from within."

Several NGOs also highlighted how their roles change over time from more active involvement in raising awareness or calling meetings at the start of their intervention, towards a more facilitating role which involves ad-hoc advice or providing information on new policies once a relatively stable forest institution has been established. However it is worth noting here that provision of information on government policy appears to remain important throughout and also beyond the life of an NGO intervention. The NGOs often maintain their role in discussing new government circulars or policy amendments even as their other activities oriented towards institutional support diminish.

Five NGOs feel their activities contribute towards all 10 indicators, and on average the NGOs felt their activities contribute to eight indicators in total. All indicators were addressed by at least 10 NGOs. All NGOs feel that they contribute to two aspects of management capacity, namely, *confidence in own capacities* and *appropriate leadership* through providing forest management and technical trainings and through supporting interest development of individuals (mostly with a focus on youth). Similarly, all NGOs felt they increased the number and quality of connections the communities enjoy, both with officials and other communities. This was mainly done through facilitating liaising between communities and officials and organising exposure visits. Table 3 also shows that several of the main activities are seen by the NGOs to contribute to multiple indicators. Interestingly, it is the assertion of 10 NGOs that their decision to abstain from providing materials or funds actually positively contributes to durable collective action, by reducing the chance of dependencies.

4.3. Step three: approaches to institutional change

All NGOs show a predominantly *subjective* approach to institutional change. Only four NGOs approached four or more of the 21 manipulable (sub) indicators of collective action (given in Fig. 1), with an objective approach and no NGO approached more than six indicators with an objective approach. The top three indicators for which an *objective* approach to activities was taken are 'creating a supportive external environment' (all NGOs), 'conflict adjudication' when involving other villages (eight NGOs) and 'confidence that future benefits will be fairly allocated' through liaising with external authorities (five NGOs).

The dominance of the *subjective* approach shows a long-term focus putting the communities themselves firmly in the change agent position, with the NGO's role generally seen as being one of facilitating discussions, exposing communities to other practices, providing policy information and guiding/supporting in decision making. For example, only two of the NGOs were actively involved in discussions regarding rule making, and all the refraining NGOs explained this decision by referring to community responsibility and/or ownership of the institution. Even more active involvement in setting up meetings was also explained by a longer term *subjective* approach to building ownership as one NGO explained, "This [setting up meetings] is important as the community must take this forward. NGOs can only support". There also appears to be a conscious effort to reduce dependency on NGOs, for example, one NGO stated that their most important activity is "making the communities self-reliant – to develop the skills they need to be independent." However, all NGOs also saw themselves as being the change agent (*objective* approach) when it comes to influencing external actors or institutions in either the private or state sector. Also, as new policies came into being, they again take on the change agent's role in informing communities of relevant amendments or new rights, as an NGO in Andhra Pradesh explained, "an external source is needed to help them [communities] understand the language of the policy documents and language the state officers are speaking". It appears that NGOs predominantly hold a *subjective* approach when working with communities on a local level, but see themselves as important change agents (*objective* approach) at higher levels in the institutional setting or when changes in the institutional setting affect local communities.

The results along the design–crafting dimension show more diversity and dynamicity. Eight NGOs take a strong institutional *crafting* approach to their work, whereas only three focus predominantly on institutional *design* and nine show elements of both crafting and designing. The *subjective crafting* NGOs direct their efforts at understanding the local context, which includes existing social structures and individual interests. The NGOs stressed the importance of appreciating "the strengths of the local people" and the "social management" with one NGO stating "there is no standard community management model". From this understanding, training focuses on the needs and interests as expressed by the community members. The *crafters'* focus on developing capacities and confidence in communities, which ultimately translates into durable institutions, can be seen in its most extreme form in the seven NGOs which set up, provide trainings/support for people's federations of volunteers or rural resource persons.

The majority of the NGOs highlighted how their approach can change depending on the stage in the intervention. Eleven of the NGOs take a *design* approach at the start of their intervention, shown by their initiation (*objective* design) or suggestion (*subjective* design) of structural institutional elements namely calling meetings, positions in committees, minute taking and/or action point documentation. As one NGO stated, "Good initiation is vital. We help to select some people to be in the committee". As only three NGOs have a predominant institutional design approach throughout their work, this shows that the remainder convert to *crafting* approaches later in the intervention.

5.   Conclusion and discussion

Our comparison of NGO activities to the manipulable indicators of collective action derived from the commons literature shows that NGOs conduct a range of activities to support *durable* collective action in the communities. These are aimed at strengthening both the internal capacities of communities (e.g. through forest and technical management trainings) and their relations with the external environment (e.g. through explaining government policies). Most NGOs also support communities in defining their resource boundaries, which is usually one of the first activities in their intervention.

It is striking that NGOs direct their limited resources towards supporting communities with sustaining their collective action endeavours, but appear to undertake few actions that impose an institutional set up on a community. The NGOs generally perceive activities which fall under *functioning* collective action (such as crafting rules and setting up monitoring systems) as being the realm of the communities themselves, with their external support rarely extending beyond the facilitation of community discussions on these topics. This is even more noteworthy given our critical case design which leads us to expect that other NGOs would be even less likely to engage in activities to support *functioning* collective action.

The NGOs in our sample generally appear to hold a *subjective institutional crafting* perspective. They aim to prepare communities to take the lead in developing their own forest institutions and are generally sensitive to local social systems and individual interests. Some NGOs showed a tendency towards a design approach in the initial stages of their intervention as they felt some fundamental institutional elements needed to be introduced (e.g. calling meetings). It is interesting to note that NGOs take a more *objective* stance to their work in influencing the dynamic local, state and national level contexts they operate in and in working with communities to understand how changes in this institutional setting affect them (e.g. policy amendments). This could suggest a limitation to the empowerment premise of the *subjective institutional crafting* perspective as it indicates that communities are not able to independently interact with private and state actors in a satisfactory manner, nor analyse the consequences of policy amendments for their community themselves.

What are the implications of these results for communities, NGOs and the commons literature? We highlight here three points of consideration. Firstly, our results suggest that NGOs are consciously not attempting to influence indicators of *functioning* collective action, aspects that the commons literature sees as essential for collective action. As it is illogical to support durable collective action if functioning collective action is not yet in place, we reason that NGOs seem reluctant to work with communities that do not appear to be able to set up their own functioning institution including devising a set of appropriate CPR appropriation rules-in-use, with no or minimal support from an NGO. These communities could arguably also have been successful in collectively forming and maintaining a forest institution *without* NGO support. Other scholars have also noted such a self-selection bias amongst successful NGO projects (see Kerr et al., 2002). Future research on such a self-selection bias could also be informed by the distinction we make here between institutional *design* and *crafting*. As NGOs face financial and manpower constraints, alongside incentives to show their success, we may reasonably expect that NGOs advocating a *design* approach would partially select where to work based on the presence of committees and rules-in-use in communities. *Crafters* on the other hand, would more likely select communities which show interest in collective action, even if the structural elements (rules-in-use) are not evident, as they believe these can be crafted.

Secondly, two possible, mutually supporting, mechanisms to help NGOs move forward can be drawn from our results. Firstly, successful community-NGO collaboration could create positive spill-over effects in neighbouring villages through providing an example and thus an incentive for communities to set up collective action institutions. Secondly, some NGOs support federations of community-based organisations (CBOs) comprised of members of communities with successful forest institutions. The view is that the CBOs are more readily accepted into communities, they are trusted, and that their support does not diminish the community's sense of ownership of the rules crafted with their support. The CBOs could draw on the larger NGO resources for providing more formalised inter-village trainings.

Finally, our results highlight the dynamic and diverse institutional settings the NGOs operate in which both moderates their approach to institutional change and

determines their choice of specific activities. Similar to other contexts in which science aims to 'advance desired societal outcomes' (Sarewitz and Pielke, 2007) it appears that there is room for the commons literature to consider a shift towards a more demand driven production of knowledge by firstly recognising more explicitly this messy institutional reality, and secondly engaging in a discussion with NGOs on the fundamental differences between institutional design vs. crafting and the implications for NGOs engaged in supporting community institutions in a CPR context.

Our research was triggered by a perceived mismatch between science and society: science's focus on *self* governance and doubt towards whether community institutions can be supported by external actors (NGOs) doesn't account for situations in which NGOs are doing just that. As a consequence, science is not providing the kind of knowledge required by society (in this case: which aspects of institutions for collective action in a CPR context can be manipulated by NGOs and how?) (see also: Van Laerhoven and Barnes, 2014). Suggestions from the science-policy interface literature as to how to overcome such a barrier include joint formulation of problem oriented research questions and establishing partnerships across science-policy borders (Kueffer et al., 2012). To that regard the framework of manipulable indicators of collective action and the typology of NGO approaches to institutional change presented here could be used as input for the discussion. As the current commons scholars finds ways to move beyond perfecting the design principles towards greater consideration for the dynamics of social-ecological systems, we argue that attention also be given to the long-term and dynamic institutional *crafting* efforts by NGOs to support local collective action.

Acknowledgements

Appendix 1

Critical enabling conditions for sustainability on the commons and their hypothetical manipulability by NGOs.	
Critical enabling conditions (Agrawal, 2001)	Possibility to positively affect the conditions by means of outside organisation support
1. Resource characteristics	
(i) Small size	No
(ii) Well-defined boundaries	Maybe (mapping, markers)
2. Group characteristics	
(i) Small size	No
(ii) Clearly defined boundaries	No
(iii) Shared norms	No
(iv) Past successful experiences – social capital	Maybe (supporting the self-organisation related with other – less complex – issues)
(v) Appropriate leadership (young, familiar with changing external environment, connected to local traditional elite)	Maybe (providing leadership training)
(vi) Interdependence among group members	No
(vii) Heterogeneity of endowments	No
(viii) Homogeneity of identities and interests	Maybe (awareness raising activities)
3. Relationship between resource system characteristics and group characteristics	
(i) Overlap between user group residential location and resource location	No
(ii) High levels of dependence by group members on resource system	No
(iii) Fairness in allocation of benefits from common resources	Maybe (advice)
4. Institutional arrangements	
(i) Rules are simple and easy to understand	Maybe (advice)
(ii) Locally devised access and management rules	Maybe (advice)
(iii) Ease in enforcement of rules	Maybe (advice)
(iv) Graduated sanctions	Maybe (advice)
(v) Availability of low cost adjudication	Maybe (offering conflict resolution support)
(vi) Accountability of monitors and other officials to users	Maybe (advice)
5. Relationship between resource system and institutional arrangements	
(i) Match restrictions on harvests to regeneration of resources	Yes (providing science based information on regeneration patterns and the expected result of restriction rules)
6. External environment	
(i) Low cost exclusion technology	Maybe (depending on the context and the availability of such technology)

Appendix 1 (*Continued*)

Critical enabling conditions (Agrawal, 2001)	Possibility to positively affect the conditions by means of outside organisation support
(ii) Central governments should not undermine local authority	Maybe (advocacy and lobbying)
(iii) Supportive external sanctioning institutions	Maybe (advice on how to match local sanctioning rules with existing external provisions)
(iv) Appropriate levels of external aid to compensate local users for conservation activities	Maybe (depending on the available resources at the disposition of the external organisation)
(v) Nested levels of appropriation, provision, enforcement and governance	Maybe

Appendix 2

List of NGOs interviewed and general characteristics.

WWF India

<u>Andhra Pradesh</u>
Centre for People's forestry
RAIDS
Sakti
Samata

<u>Maharashtra</u>
AAAS
Dilasa
Grameen Samasya Mukti Trust
Kalpravish
Khoj
SAHARA
Shrishti
Srijan
Yuva

<u>Odisha</u>
FES Angul
FES Bhubaneshwar
OJM/Friends of trees and living beings (CBO)
Nirman
RCDC
Vasundhara

<u>NGO characteristics</u>

[0,1-3]NGO objectives[0,4-6]SizePoverty alleviation ($n = 9$)Forest conservation ($n = 3$)Both poverty alleviation *and* forest conservation ($n = 8$)≤2 districts ($n = 9$)Region-1 state ($n = 5$)Multiple states/larger ($n = 6$)

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Appendix 3. Overview of questionnaire

<u>Section 1: Introduction</u> (NGO characteristics – size, objectives, location)
<u>Section 2: Work within the community</u>
For each indicator:

- Ask if they engage in activities or otherwise support communities with … (refer to indicator)
- If yes, ask for example of how they influence this indicator, prompt to be specific and to discuss why important activity.
- If no, why not?
- If not applicable, why not?
  1. Support a community organisation
  2. Activities to promote awareness of forestry management throughout community

3. Support in delineating of boundaries
4. Help set up committee or community meetings
5. Promote understanding of shared interests
6. Help to generate information about resource generation patterns
7. Help in crafting rules for use of resource
8. Help in ensuring that the rules crafted are aligned at higher scales
9. Help to implement rule enforcement
10. (if yes to 9.) help to make sure rules of enforcement are easy to implement
11. Establish or support a sanction mechanism
12. Make sure sanction mechanism is backed up by formal government mechanisms
13. Help to ensure those engaged in monitoring and rule enforcement are held accountable
14. Support leadership development
15. Provide management trainings other than leadership development
16. Provide technical forestry trainings
17. Allocation of benefits from the common use of forest
18. Provide conflict resolution support
19. Provide low cost technologies to exclude non-community members
20. Financial or material contributions

<u>Section 3: Activities beyond working within the communities</u>

21. Lobbying the government in order to increase local autonomy with respect to forest governance
22. Working with relevant government departments
23. Connecting the forest users with other forest communities
24. Supporting communities with liaising with relevant state dept. officials

<u>Section 4: finishing off</u> top 3 activities? Forest condition improved because of project? Viewed by locals as success? (General discussion to draw out what they feel to be important)

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