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*Rural Forest Management in Sierra Leone: The Role of
Economic (In)Equality in Facilitating Collective Action*

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*RURAL FOREST MANAGEMENT IN SIERRA LEONE: THE ROLE OF ECONOMIC (IN)EQUALITY
IN FACILITATING COLLECTIVE ACTION*

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I. Introduction

Does heterogeneity foster or impede collective action? Are highly diverse actors likely to cooperate over a natural resource on which they are dependent? While the past few decades have seen considerable advances, both theoretical and empirical, in the research on what is customarily known as common pool resources (CPR), there is still is much disagreement over the impact of heterogeneity on environmental collective action which has given rise to a sizeable body of literature (see Kanbur 1992; Baland and Platteau 1996, 1999; Karaivanov 2001; Varughese and Ostrom 2001; Poteete and Ostrom 2004; Ostrom 2005; Adhikari and Lovett 2006; Ray and Bhattacharya 2011).

On the issue of group heterogeneity, there is a general tendency to align with either of two contrasting views. One argues that collective action will be hard to achieve in a context of very diverse actors and that heterogeneities will rather have a detrimental effect on the management of a natural resource. The key argument posited theoretically by Kanbur (1992) and Kant (2000) and shown empirically by Naidu (2009) is that diverse and stratified socio-economic groups will have varying economic interests and stakes in the natural resource and therefore face difficulties in allocating quotas of appropriation. If product-preferences and time horizons differ greatly between groups or individuals have disparate economic assets, cooperation will not emerge as they cannot reach unanimity on an optimal resource strategy (Kant 2000). The underlying idea of homogeneity being favourable is thus the simple “birds of a feather flock together”-logic, when interests and assets are aligned and of a similar nature. This logic might also be especially applicable in cases of cultural homogeneity, as shared beliefs and norms contribute to cooperation as it may diminish the costs of negotiation (Kant 2000).

The opposite view, originates in Olson's (1965) early work who identified that heterogeneities will play a decisive role in facilitating successful collective action. Olson maintained that collective action might well come about in an economically highly diverse group if certain privileged groups existed, a set of individuals in possession of more economic endowments and assets. These groups would find it in their own interests to supply a collective good, even if it allowed for free-riding by less wealthy group-members. This argument, later revised by Baland and Platteau (1996, 1999) has led to the theoretical proposition that certain heterogeneities may promote collective action if the perceived benefits for the privileged group are large enough to create incentives to allow others to free-ride on their efforts. ¹ While theoretical progress has been made on the topic, the impact of wealth heterogeneity remains one of the main contested issues.

This paper sets out to investigate one particular aspect of heterogeneity (out of a multitude of different dimensions it can take), namely that of economic inequality, as measured in differences in wealth and income. We start off from the two contrasting views presented above to examine the impact of economic inequality on the likelihood of collective action. To do so we conducted a controlled, comparative case-study of two remote forest-communities in the north-eastern Koinadugu District of Sierra Leone for three months (February to April) in the spring of 2011. Similar studies of heterogeneity have been conducted in other Sub-Saharan countries, such as Ethiopia (Benin and Pender 2006), Mali (Vedeld 2000) and Tanzania (Ruttan and Borgerhoff-Mulder 1999), hence the impact may be found in a variety of cultures and contexts. Given that we only study two small communities, we aim not to determine *how much* impact local economic inequalities has on collective action, but rather *whether* and *how* – placing particular emphasis on a high explanatory richness (cf Bennett 2010). Given the paucity of data on Sierra Leone and the district's context of deep poverty, limited livelihood strategies and near-to-absolute dependence on forest-resources for survival (KDCDP 2008), we find it of importance to study the extent to which local communities are able to craft institutions for forest-governance, yet little research explicitly relating to forests as CPRs has been conducted in the country (but see Freudemberger et al. 1997). Note however, that despite the chronic poverty plaguing the country this issue will not be engaged with in this paper. The synergies between poverty-reduction and sustainable natural resource management are unclear (Barrett and McPeak 2005) and not in scope here, for which reason we restrict our analysis to the forest management-aspects of our two villages. A full, detailed account of the economic situation in the Koinadugu District and Sierra Leone may be found as an appendix to this paper.

The paper proceeds as follows. Section II begins with a very brief account of the emergence of CPR-theory and general lessons in overcoming collective action problems and then proceeds to review prior findings from the field on the ambiguous impact of heterogeneity. Section III first present the study-location, followed by how our cases were selected and what methods and data-collection techniques were employed. Thereafter, Section IV reports and discusses the results gathered in-field and Section V provides some conclusions arrived at and offers some closing remarks.

II. Theoretical Background

(a) The emergence of CPR-theory and collective property rights

Early conventional theories on resource management reflected the predictions of Hardin's (1968) seminal article on the “tragedy of the commons”, that in the absence of external enforcement and clear property rights, appropriators were bound to degrade the resource to depletion or extinction, an argument also held by Demsetz (1967) and Olson (1965) who argued that rational, self-interested individuals would only act in their own personal interest. As a result, the policy-prescriptions that became commonplace in the decades following these early works were either by privatisation or imposing state regulation over natural resources. Over the years, and still ongoing, there was a tremendous upsurge in empirical studies on what became known as CPRs, pointing to the limits of earlier propositions, leading to a paradigm-shift in which collective action problems often are shown to be possible to overcome (Wade 1987; Ostrom 1990, 1998; Agrawal 2001). Scholars now contend that individuals and groups in many instances are fully capable of self-organisation and that collective or communal property rights often may be a better guarantee of sustainability than private or state management (Ostrom 1990, 2005), especially if users are allowed to tailor their own local rules of appropriation and also monitor and enforce them (Gibson et al. 2005). While there never may be a blue-print for all contexts, there is now consensus on what characterises sustainable, robust CPRs. Most noteworthy are perhaps the eight design-principles developed by Ostrom (1990, 2005), which enjoy widespread recognition.ⁱⁱ The analysis in this paper will make use of these in developing three indicators for measuring collective action. Despite impressive research accomplishments in understanding, the puzzle of heterogeneity remains contested.

(b) Heterogeneity: A theoretical puzzle

The two contrasting theoretical assumptions regarding the impact of heterogeneity on collective action are also reflected, interestingly, in widely different findings from field studies in a rich variety of settings. Indeed, the very concept of heterogeneity is complex as it may be manifested along a multitude of dimensions. Baland and Platteau (1996) make a convincing classification between three main categories of heterogeneity; identity, interests and endowments. It is also often the case that individuals are homogeneous in one respect but heterogeneous in another, giving rise to a number of combinations (Kurian and Dietz 2004).

Diversity in identity or socio-cultural characteristics refers to such dimensions as caste or gender

(Molinas 1998; Agarwal 2002) but empirical studies have not proved any univocal conclusions on its impact. Adhikari and Lovett (2006) indicate that social diversity might increase levels of conflict and decrease trust but studies by Varughese and Ostrom (2001) and Naidu (2009) present the argument that socially diverse groups may well cooperate if their interests over resource-appropriation may be aligned. This classification is not fundamentally different from what we find in the literature on social identity, which makes the distinction between natural identities (gender), individual identity (leadership quality) and collective identity (shared interest and goals). Kramer (2006) finds that diversity in identity correlates with diversity in interests, which similar to the findings above, may have various outcomes. However if a collective identity exists, as it could in a cultural homogeneous community, it could form social capital which is conducive to collective action.

As for heterogeneities in interests, similar ambiguities exist. Vedeld (2000) found in a study of agro-pastoralists in Mali that diverse economic interests among elite groups made collective action difficult, but could be achieved in cases where the elite was better endowed and slightly wealthier, possibly supporting Olson's (1965) thesis about privileged groups. In another study of pastoralists in Tanzania, Ruttan and Borgerhoff-Mulder (1999) found that diverse interests did not have any detrimental effect on collective action aimed towards conservation while a study of communal woodlands in Zimbabwe (Campbell et al. 2001) found that disagreement over the purpose and form of appropriation of the resource hindered collective action.

Heterogeneities in endowments, are often considered to be the most detrimental factors to collective action and have been dealt with extensively in various contexts such as irrigation (Bardhan and Dayton-Johnson 2002; Kurian and Dietz 2004; Ruttan 2008), fisheries (Ruttan 2008), grazinglands (Benin and Pender 2006) and forests (Adhikari and Lovett 2006; Ray and Bhattacharya 2011).

In our case of rural Sierra Leone, the main manifestations of endowment-heterogeneities lies in differences in economic inequalities, expressed in wealth and income. Previous findings of the impact of economic inequality from the field have been ambiguous, if not even contradictory. In two separate large-N studies of peasant co-operatives in Paraguay (Molinas 1998) and community-forestry in the Indian Himalayas (Naidu 2009) there is evidence of a bell-shaped relationship between inequality and levels of co-operation, where the best outcomes are found at moderate levels of inequality. It is argued that when there is perfect equality no one will have a differentiated incentive to be the provider of the collective good and in perfect inequality the poorest will lack

incentives or abilities to contribute to the provision at all and the wealthiest will be in a dominant enough position to find no need for collective action. Contrary to these findings, Bardhan and Dayton-Johnson (2002) find a U-shaped relationship in a study of irrigation systems in Nepal, India and Mexico and argue that very high or very low levels of inequality yields the best outcomes in terms of providing a collective good, while moderate levels are less favourable. The reason is that at highly unequal levels there will be Olson-effects, that is the formation of 'privileged groups' who have the incentives to initiate collective action, while at very equal levels people will cooperate as they are on equal terms. However, at middle-range levels incentives will be mixed; the poorest will free-ride and the wealthiest will not find incentives to provide the collective good, suggesting that increased inequalities might in some cases be favourable. The latter finding corresponds well with the social identity literature mentioned above; at levels of total equality it might be easier to develop a collective identity and at highly unequal levels the 'privileged group' facilitates collective action which in turn reinforces collective identity as everyone in a community may benefit from joint efforts (Kramer 2006).

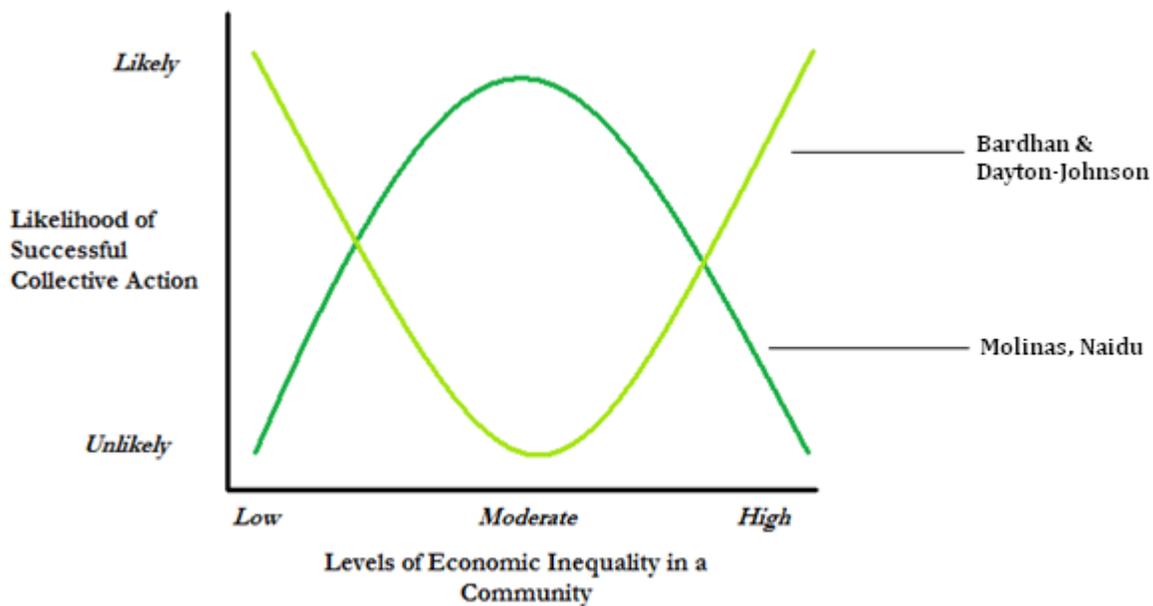


Figure 1. The U- and bell-shaped relationships found in three field-studies

In summary, previous research has arrived at contradictory results about the impact of heterogeneity on collective action, indicating relationships that may be positive or negative, U-

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shaped or bell-shaped. This paper aims to contribute to this research by examining the impact of economic inequalities in two rural Sierra Leonean villages.

III. Method and Field-study

(a) *Process Tracing*

To investigate the possible impact of economic heterogeneity versus economic homogeneity on collective action in two West African forest communities we derived two hypotheses from previous research: i) inequality increases the chances of collective action by creating incentives in a ‘privileged group’; and ii) inequality creates dissimilar interests thus hindering collective action. Figure 2 displays the four different possible outcomes.

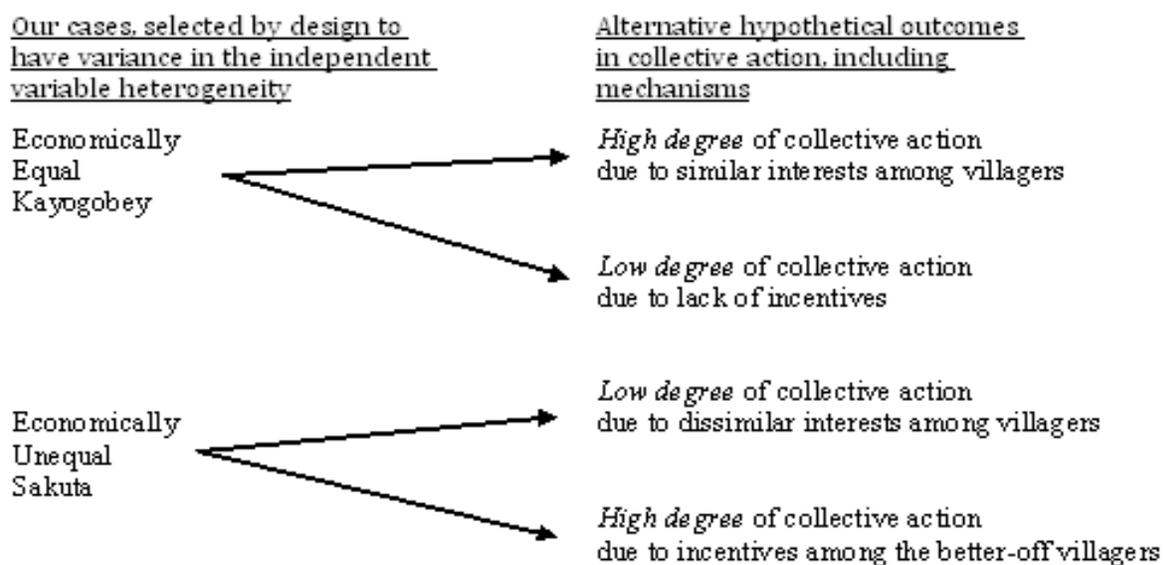


Figure 2. The schematic design of the study and its alternative hypothetical outcomes for each of the two villages.

In order to test these two hypotheses we employed the method of process tracing. In the words of Bennett (2010:208), “Process tracing involves the examination of ‘diagnostic’ pieces of evidence within a case that contribute to supporting or overturning alternative hypotheses.” To limit against possible spurious relationships we asked our respondents also about potential mechanisms linking independent and dependent variables, thus aiming to trace the process of a ‘causal path’.



Figure 3. Location of the villages in the Koinadugu District, Sierra Leone

(b) Koinadugu District in Sierra Leone

Emerging from a brutal, decade-long civil war in 2002, Sierra Leone is now facing an equally grim reality. Having lost most of its economic and social infrastructure, development progress has come at a slow pace in Sierra Leone, which suffers from chronic poverty with two thirds of the population living on less than \$1, 25 a day (UNDP 2011).

The area of study, the Koinadugu District, was chosen due to its populations' near-total dependency on the forest for livelihoods and survival. The district is the least developed and most marginalised of the country's fourteen districts. Situated in the north-east along the Guinean border, it is the largest district but also most sparsely population (KDCCDP 2008). Reflecting the conditions of the country at large, the vast majority of the districts' population are engaged in subsistence agriculture and simple, small-scale agro-forestry. Despite a large presence of foreign NGOs, there is still a lack of capacity and resources needed to develop stagnated rural areas, exemplified most visibly in Koinadugu by the lack of working roads, leaving many parts of the district highly remote and the local economy in a moribund state (KDCCDP 2008; Hiemstra-van der Horst 2011).

Livelihood-strategies and alternative income-opportunities in the district are very limited, as the majority of the population lack the means to invest in better tools and technology, or commercialise what little output they produce, leading to severe seasonal hunger during the rainy period. While there is a considerable presence of cattle-herders, most villages are restricted to very basic arduous, labour-intensive agro-forestry, wildcrafting and gathering of NWFPs (non-wood forest products), which have little commercial value. Very limited produce reaches the district-capital Kabala (KDCCDP 2008).

As for the forestry-sector in Sierra Leone, the past decade saw grand plans and moves to decentralise ownership and management of the forests, reflecting the paradigm-shift in research on resource management described above (Ostrom 2005). Community-forestry management as planned is still to appear on a large scale in Sierra Leone as formal decentralisation has come at a slow pace. De facto control and ownership of the village resources still lies with the local communities residing in the forests (Hiemstra-van der Horst 2011).

The land-tenure system in place in Koinadugu, including our two villages, is fairly simple. The outer de facto boundaries of the communities are well-known, both among villagers and local officials. Within each community, all land is common property by tradition, but households with the necessary capacity and assets often have plots of land in the forest which they use for organised, yet

very simple, farming, such as growing rice in small swamps or having banana-groves. Boundaries between these plots are often demarcated by natural divisions, like creeks or glades. In addition to the farmed and demarcated plots, villagers also have access to the communal forest at large which is open to community-members for hunting, wildcrafting and gathering NWFPs.

The district is beginning to face severe deforestation challenges, primarily caused by a growing presence of foreign timber companies, increasing slash-and-burn agriculture and a near-total dependence on woodfuel to meet domestic energy-needs, putting a heavy strain on what the forest-resources may produce (KDCDP 2008; Hiemstra-van der Horst 2011).

(c) Case Selection of Two Villages

The two villages, Kayogobey and Sakuta, were purposively selected from the broader population of villages to suit our research design. In order to perform a focused comparison in its strict sense, attention must be placed on identifying and selecting cases on the basis of variation on the independent variable only, here economic inequality. This is often seen as a difficult process (George and Bennett 2005: 181) for which reason we invested much time and effort at this stage. Such sample selection, may be particularly challenging in situations where there is an almost complete lack of data, such as rural Sierra Leone. Isolating the key variable implies holding constant or controlling for other possibly mediating causal variables (King et al. 1994: 137-138, 189-191). The variables we controlled for were derived from previous theoretical literature where they have figured as possible sources of heterogeneity or collective action. One often contested variable worth mentioning is group size, which also has been referred to as a theoretical puzzle in previous literature (Poteete and Ostrom 2004; Ostrom 2005). However, given the very similar sizes of our two selected villages we feel confident in controlling for its potential impact. Another possible source cooperation could be a 'culture of interaction', preceding the communal structures now found in the villages. Therefore we took care in asking the villagers about such possible differences in general attitudes to village cooperation, but we found none.

As no official data on local communities exist, the two villages were selected in close consultation with the District Forestry Officer (DFO) in Kabala, who has over thirty years of experience in the district. To locate two villages differing in terms of economic heterogeneity we used visible, physical development (such as housing quality) in villages as a proxy indicator of economic inequality, predicting that only some households were likely to enjoy these relative luxuries.

These predictions were presented to the DFO who was asked to produce a short-list of villages matching these specific indicators, but also being as similar as possible in all other aspects. This was followed by making physical visits and observations to the villages on the short-list (six were produced, spread over a large area of the district) over the course of a week to determine which suited the case-study design best, resulting in Kayogobey and Sakuta being selected. A table providing a case comparison is presented below.

Control Variables	Kayogobey	Sakuta	Comments
Population/No. of households	310/40	480/55	Based on authors' measurements. Households included a large number of dependents, both children and elders.
Ethnic Composition	Limba	Limba	The third largest tribe in Sierra Leone, predominantly living in the north.
Religion	Muslim majority, approximately 10 Christian households.	All Muslim	
Gender composition	Equal	Equal	Based on authors' measurements and conversations with the village chiefs.
Age structure	Large age-spread.	Large age-spread	Based on authors' measurements. The typical household consisted of two adults, two-three elders and three-four youths in the range of 0-15. In both villages approximately 75% of the villagers were 'fit for work' in some aspect. Only infants and sick elders excluded from any contribution to the household. It was not possible to calculate the mean age as many people simply did not know their exact age, perhaps an effect of illiteracy.

Migration rate/remittances	Marginal. A total of four male youths had migrated to Freetown and Kabala in the past five years.	Marginal. Only two young males migrated to Freetown in the past five years. No remittances.	Interviews with the local chiefs indicated an extremely low or non-existent rate of out-migration.
Distance to communal forest/to closest large town (Kabala)	Surrounded by the communal forest/24km	Surrounded by the communal forest/43km	Roads are in a deplorable condition, largely unusable during the rainy season (May-September). Measurements here are the <i>de facto</i> distances travelled on the two quickest routes.
Primary occupation	Small-scale agroforestry, gardening, wildcrafting, keeping domestic animals. Wholly dependent on the forest for livelihoods. No hired labour.	Small-scale agroforestry, gardening, wildcrafting, keeping domestic animals, logging. Wholly dependent on the forest for livelihoods. Marginal occurrence of hired labour.	The men mainly work in the forests, swamps and glades while women keep small vegetable plots near their house and tend to domestic animals, mainly chickens and occasional goats.
Use of the communal forest	Small-scale farming of rice, cassava, citrus. Gathering of NWFPs herbs, spices, cola-nuts, roots for traditional medicines, tapping <i>pooyo</i> (palm-wine). Hunting bushmeat, some logging for	Small-scale farming of rice, cassava, bananas. Gathering of NWFPs <i>wild yams</i> (sweet potatoes), spices, cola-nuts, tapping <i>pooyo</i> , honey. Logging for domestic use and for marginal commercial purposes.	Most, but not all, logging is done by traditional means, that is without power-saws which is gruelling and has few returns to the producer. Bushmeat includes wild boars, chimps and baboons.

	domestic use.		
Quality of the communal forest	Forest largely intact in terms of deforestation and a low rate of depletion. Villagers were aware that unrestricted over-consumption could deteriorate the forest.	Forest almost completely intact in terms of deforestation and a low rate of depletion. Villagers were aware that unrestricted over-consumption could deteriorate the forest.	Based observations of the communal forest and conversations with the District Forest Officer whose credibility was judged high.
Housing Quality/Other communal structures	All clay-huts. One very simple church and equally simple mosque.	Mostly clay-huts and approximately 15 concrete buildings. One communal school built and two small communal storages. Built in the past 10 years. Owned one power-generator. One very simple mosque.	
Civil War Impact (1991-2002)	Spared from direct fighting, no physical damage. One account of a family having lost two sons who joined the rebel RUF.	Spared from direct fighting, no physical damage. An undisclosed number of youths left to join the RUF.	Asking personal questions about the civil war still remains <i>highly</i> sensitive. Due to the remoteness of the two villages, they were spared from direct fighting but suffered from the effects of not daring to go to town and the constant threat of attack.

Table 1: Controlled Comparison of Variables

(d) Operationalization of variables

The independent variable, *degree of economic inequality*, was measured with two main indicators; wealth and income. The first refers to the relatively few assets and possessions each household held; that is

the size of the plot of land they work on, but also ownership of tools for farming (industry-made or hand-made), domestic animals, possibilities to keep food surpluses and the type of materials used for housing (clay or concrete). Income refers to the amount of products and goods a household generated and may be either wages (though very uncommon) or non-monetary income, such as bushels of rice. The reason for using both types of indicators rather than just one lies in the prevalent poverty-levels. For example, the ownership (wealth) of chickens or goats was a safety-buffer in times of food shortages and a means of survival. Others would not own any animals but would instead enjoy an irregular stream of produce (income) through the harvesting of fruits and nuts. Bartering was common in the villages for which reason both indicators were deemed to reflect the actual situation better.

Since we were interested in studying local forestry we operationalised our dependent variable, collective action, based on insights from previous research on CPRs. Three important aspects of Ostrom's (1990, 2005) eight design principles are existence of joint activities, joint rules, and enforcement of these rules. Therefore, the *degree of collective action* was measured with the help of three main indicators: organised village activities; rules of conduct; and monitoring and sanctioning of these rules. We find the three to be mutually exclusive in the sense that one may occur without the other. It is not unreasonable to imagine organised village meetings relating to use of the forest while not setting any formal rules for harvesting. Conversely, monitoring and sanctioning may be carried out continuously by some party but might not be enshrined in any local regulation.

(e) Data Collection

The empirical data gathered stems from a series of in-depth interviews and observations conducted over a period of six weeks in the two villages. An interpreter was used for all of the interviews to translate from the local *Limba* into English. This method was considered suitable, partly because high illiteracy ruled out pre-printed surveys, but also that it allowed for close accounts of how the interviewed individuals interpret their own situation and the actions and values that guide and shape their lives. We followed a pre-arranged list of questions, though follow-up questions were frequently used. The respondents were encouraged to comment and discuss how they perceive their own situation as well as that of the village, for example if they considered themselves uniformly poor or whether there were clear disparities. In each village a number of ten respondents were selected for interviews. As is custom in rural Sierra Leone, the male head (father) of the family traditionally

speaks for the household for which reason each respondent spoke not only for himself, but also for up to nine family-members. In Kayogobey and Sakuta a fourth and a fifth of the total households were interviewed, respectively. Thus, each individual household is our unit of analysis. The method used to select respondents was to pick randomly among the houses in the village. In both communities the vast majority of houses were lined along the main road, with both wealthier and poorer households dispersed at random, that is, poorer families were not confined to the outskirts of the village. Every second house in Kayogobey and every third in Sakuta on the main road were selected, starting from the centre-point of the village and moving in one direction. All selected households were willing to be interviewed, hence a zero percent drop-off rate. In addition to the ten villagers, the local chief in each village was interviewed as well, partly because reverence dictated so, but also to capture their views on the situation of the village, in their capacities as headmen. The findings from the interviews were carefully corroborated by observations of the villages at large, by informal conversations as well as passive participation in the village-meetings.

IV. Empirical Analysis of the Two Villages

(a) Degree of Economic Heterogeneity

It is imperative to understand the very low levels of development dealt with here. While we make mention of some being wealthier, or better-off, it is yet in a context of deep poverty and much hardship. Terms such as appropriation, extraction and volumes of products should therefore be seen against a backdrop of people who are entirely dependent on small-scale, rudimentary farming and agro-forestry for their very survival and where malnutrition and seasonal hunger are commonplace.

Kayogobey. The somewhat smaller of the two villages, Kayogobey is made up of forty households and slightly more than three-hundred people. The village is characterised by economic homogeneity, evident across both the wealth and income-measurements used. The main parity lies in the size of the plots of land appropriated. Of our ten respondents only one stated farming a plot of a notably larger size and even then the volumes of products his household managed to extract did not deviate from the village-average. The factor that seemed to determine a household's land-usage was their incapacity to increase extraction further. They simply lacked the means or tools to grow any more rice for example, meaning that each household was currently appropriating the forest at their maximum-capacity, given the assets they had. The activities undertaken in the village are ones of

much simplicity with few sustainable economic benefits to the appropriator, such as the gathering of cola-nuts, tapping *pooyo*, growing cassava or hunting for occasional bushmeat. Few differences among households were noticeable in Kayogobey in terms of non-land assets, particularly evident regarding housing; all being clay-houses of very simple quality.

Incomes were very low and very equal. There was no occurrence of hired labour, instead each family worked on their own plot of land. The low incomes were also evident in that commercialisation beyond the village was extremely uncommon, only on rare occasions would someone in the village travel the distance to the district-capital Kabala to market their produce. The meagre and barely-sufficient incomes correlated with the fact that people in the village seldom had the opportunity to stockpile what they produced, regularly causing food-shortages in the rainy season. Lastly, a clear indicator of the uniform poverty lies in the fact that all ten respondents stated that they were wholly dependent on the communal forest for their entire livelihood and confirmed that this fact not only applied to them, but to the entire village.

Sakuta. The village consists of approximately fifty-five households and slightly less than five-hundred people. Across both of the indicators used to measure economic inequality, the evidence suggests that Sakuta is characterised by large and visible disparities. Contrary to the findings in Kayogobey, the most discernible evidence lay in differences in the size of the plots farmed or harvested. Three of the respondents stated that they worked on plots considerably larger than the village-average. All ten respondents stated that the majority of the village worked on plots of fairly the same size, with a smaller minority appropriating larger plots. Those families using larger plots were consequently able to extract more produce and may thus be considered wealthier than the average village-household. This was reflected in their ownership of slightly more advanced equipment such as power-saws and wain-like carts, several domestic farm animals and houses of better quality. It was also seen in more poignant observations like the children of the wealthier households having the occasional toy from town rather than the simple hoop-and-stick more common among the more deprived families, an example also putting into perspective the relative under-development of the village.

Regarding the income generated from labour in the field, three observations stood out. The first is that six of the respondents were engaged in activities similar to those of Kayogobey, mainly labour-intensive, low-value gathering of NWFPs, a finding judged to be representative of the village

at large. The second is that the three wealthier households made use of hired labour to work on their land, paying the hired labourers in produce (often rice) rather than by wages. Third, and perhaps most important is the finding that all of the respondents in Sakuta stated that they were completely dependent on the communal forest for livelihood-purposes, but with much variation in the amount of goods and produce extracted from the forest, also mentioning that this pattern applied to the whole village. One evident disparity was the fact that the wealthier households had the opportunity to stockpile some of their harvest in the communal warehouse as well as occasionally travelling to the market in Kabala to sell what produce they may have left after meeting their own consumption needs.

We also found that the respondents subjectively perceive the economic situation of the village to be one of inequalities, stating that large, visible disparities were present in Sakuta, while not actively maintaining that this was something problematic. As one man put it;

'Although we live in the same community, there are differences between us...just look at the houses on this road; you can see that some have more than others. But this is the way it is. Some have more than others.' (Alhaji, Sakuta)

(b) Degree of Collective Action

Existence of joint activities?

A village council (VC) constitutes the central regulatory body in *Kayogobey* and is composed of approximately ten villagers to which the only prerequisite for membership is age. The VC is the main and only authority present in the community though none of the interviewed provided any substantial answers as to the function of the VC.

Kayogobey has weekly village meetings which are organised and led by the VC and in which villagers are expected, but not required, to participate. Meetings enjoy fairly high participation but it was emphasised that participation would only occur if time allowed for it, in other words the respondents would not prioritise participating if they felt constrained by work in the forest. The structure of these VC-meetings are fairly democratic – all participating villagers, including the women, are allowed to raise and speak on any issue they wish, but that decision-making power lies with the ten elders of the VC who hold a form of veto on collective rulings. Our observation of a VC-meeting during the stay in the village and evidence from the interviews do however indicate that most matters brought up related to issues of a social character and not so much economic activities

undertaken in the communal forest. In Kayogobey we also found an almost complete lack of contributions made towards the maintenance and preservation of the communal forest. The only organised activity in which everyone was expected to participate in was the irregular restoration of the village main road, often just after the rainy season. Another important observation to make is that Kayogobey had a Christian minority of households but this was not perceived to cause any social divide between families. On the contrary, all villagers had helped construct the village mosque and church, which were also very simple clay buildings.

The forum for conflict-resolution in Kayogobey is the weekly VC-meetings, regardless of the matter of the conflict. The common practice is that the conflicting villagers bring up the issue and have it discussed at the meeting with the result that the elders of the VC vote among themselves on the matter and then come to a ruling. However, a majority of the respondents reported that hardly any conflicts relating to the forest or the economic situation in general are brought up at the VC-meetings, giving two main reasons for this. First, there is the idea that each household fends for themselves – if a problem arises in relation to the appropriation of the forest it is each family's responsibility to deal with it. Second and underlying the previous point was a more general feeling of mistrust in the VC's ability to resolve conflicts and villagers appeared quite averse to bringing a matter up before the VC.

Two regulatory institutions or bodies exist in *Sakuta* indicating joint village activities. The first is the Village Council (VC), consisting of the local chief and a varying number of eight to twelve villagers. Membership in the VC is determined mainly by age but largely also by being a wealthy and well-endowed member, or as they were locally termed; prominent villagers. The second body is the Village Forest Management Committee (VFMC). It consists of some ten to fifteen villagers of different ages but with a majority of them belonging to the wealthier segments. The VFMC deals with all issues relating directly to the forest, but only on a consultative basis, and the VC deal with and decide on all other village matters. Collective village activities are plentiful and well-organised. Most of the communal discussions and decision-making takes place during weekly meetings in which every household in the village is expected to partake in. The significance of these meetings is underscored by the fact that few circumstances exist under which absence from the meeting is accepted. The meetings are led by the VC and usually bring up all types of queries and issues the villagers might have, ranging from accusations of petty theft to allocation of the forest-resources to the organisation of communal activities. These meetings are democratic in the sense that everyone,

including women, are allowed to speak or raise their concerns. However, final decisions are taken by the VC. The findings from the interviews were reinforced from our observation of a weekly VC-meeting; rates of participation were high with seemingly every household in the village having at least one family member as representative; a majority of the participants were active and vocal at the meeting and interview-respondents from both the wealthier and poorer segment spoke up. It is also interesting to note that in Sakuta we were explicitly asked to only passively observe the meeting, indicating the prevailing importance of following regular joint activities despite an unusual, outside-visit.

Existence of joint rules?

Rules setting boundaries are paramount for a well-functioning CPR. Two sorts of boundaries are of interest; boundaries of the CPR itself, and boundaries of who has rights to appropriate goods from the CPR (Ostrom 1990: 90). As for that of *Kayogobey* itself the outer perimeter and boundary of the community has been set by mainly historical factors, without interference from any external authority. All of the respondents stated that they were aware of and knew the outer boundaries and extent of the community. However, regarding boundaries between plots of land within the village, the situation is somewhat more vague and disorganised. The respondents stated that while the demarcations are not enshrined in any local regulation, they knew where each household worked in the forest and that property-rights existed but were highly informal.

Closely linked to the quite informal intra-village boundaries between different plots is the absence of any clear and implemented system of rules of conduct in *Kayogobey*. While each household is entitled to the same rights regarding appropriation of the communal forest, the process in which a household acquires permission to appropriate a given plot of land is quite unclear and vague. When a household wishes to start farming a new plot or increase the volume of appropriation from the communal forest the system of rules states they should bring the matter up before the VC, detailing what they intend to do and will then be granted the permission to go along with their intended activity or be refused. The VC is, in theory, the body with the authority to approve and allocate quotas. In practice the situation is quite the contrast – none of the ten interviewed villagers reported having based their current level of appropriation on the rulings of the VC and a few of them also indicated that continuously following the system of rules was not compatible with their economic interests in the forest-resource, perhaps reflecting a nonchalance in the authority of the VC in general.

The same two types of boundaries are of relevance in the village of *Sakuta*. All respondents stated that they knew well the outer village boundaries and where the next community began. The boundaries between the plots of land a household uses had been decided within the village and was equally well-known by the respondents, primarily of their own and that of their neighbours.

The rules of conduct relating to the volumes and quantities a given household may extract or harvest from the communal forest are superbly well-tailored and clear in Sakuta. In theory every household holds the same rights to appropriate the communal forest. The rules of conduct present in the village state that all allocation and use of land must be approved and permitted by the VC. The VC usually makes a ruling on the matter and allocates the quota. All ten respondents answered that this is the process they and everyone else in the village have gone through to acquire permission and they all stated that they are highly satisfied with the way the rules are designed. They believed that the benefits they derived from the system of governance was reasonable and fair in proportion to the contributions they must make in return, which included maintenance of the village main road and the communal warehouse and school.

In addition to contributions in the form of periodic, physical maintenance, there exists also an ingeniously designed system of voluntary self-taxation in Sakuta. This system is known as Village Savings and Loans (VSL) and is in many respects the closest thing to a village-bank. If a household wishes to join the VSL-system they are expected to make a weekly contribution in Leones, usually around SLL 1000 (roughly equivalent to 25 US cents), though not more than SLL 5000 per week, which for many families is a considerably amount to dispense with. The money collected is placed in a box of reinforced steel which is sealed with three padlocks, with the keys spread out between different households on a rotational basis to prevent theft. Decisions about use of the money are made collectively by the participants with a system of majority-voting and the amount of money contributed each week is not proportional to derived benefits. The most surprising observation is that the respondents stated that the system of contribution in which the wealthier deposit more and the poorer as best they can, is well-followed by a large proportion of the households in the community, indicating a high degree of community-spirit.

Rule enforcement?

The ability of a self-governing system to ensure that rules are followed by the use of enforcement is one of the strongest indicators of successful collective action and in a sense constitutes the very foundation of a well-functioning CPR (Barrett and McPeak 2005; Gibson et al. 2005). To enforce

rules behaviour needs to be monitored and sanctions need to be doled out to rule breakers. In *Kayogobey* monitoring was largely absent, also indicative of the general situation in the village regarding the low degree of collective action. Neither of the ten villagers nor the local chief was able to give any substantial answers indicating that there was a system of monitoring in place in the village. When probing for explanations as to this absence, two main responses were given. The first was a counter-question, who would organise the monitoring or take it upon their personal responsibility to make sure rules were complied with? The second was the opinion that monitoring would impose a constraint on their levels of appropriation of the resource.

Answers also indicated that there was no general opinion on acceptable or optimal levels of household-appropriation, with some respondents purporting the view that each household did as best they can and that it would be difficult for any authority to restrain their activities. One villager lamented;

'If a man cannot feed his family, has he not failed then? If he cannot do it, then who will? All the men you see here must feed their own families; no one else will do it for him. And for the same reason, no one can tell another what to do and not. That is life here.' (Mohammed, Kayogobey).

The consequence of not having a functioning system of monitoring within the village community is the lack of a system of sanctioning which is an essential prerequisite for being able to enforce rules and a crucial design principle for a functioning CPR. A notable observation we made was the general indifference in attitudes among respondents in Kayogobey to breaking the rules; seven of the interviewed expressed the view that not following the rules set by the VC was understandable and standard practice and if a villager broke a rule it was because he has to in order to sustain his livelihood.

Contrariwise, one of the most distinctive characteristics of *Sakuta* is how the design principle of monitoring is working in order to enforce rules. Rather than charging one individual with the specific task of monitoring or even having a rotational responsibility, all villagers are encouraged and urged to constantly monitor the activities being undertaken in the surrounding communal forest. The boundaries and size of the community and the forest is not larger than it is possible for everyone to monitor each other and make sure they abide by the rules; e.g. not exceeding the allocated quota of harvest or extraction. A number of the respondents also stated they felt a personal responsibility to monitor each other for the common good. They argued that one of the

main reasons why the system of rules was well-respected and functioning was that everyone knew what everyone else was doing.

In the event of a Sakuta villager being caught violating one of the rules of conduct, the matter is brought up at the next VC-meeting. The VC examines the report of rule-infraction and in the case of a villager being found guilty the VC has the authority to deal out sanctions. The sanctions are on a graduated scale, in which a first-time rule-breaker will get away with only a warning while repeated violations will incur a fine on the rule-breaker, which increase proportionally with the times being caught breaking the rules. However, in Sakuta few repeated rule-infractions occurred. A reason given for this was that being caught breaking a rule brings shame and loss of reputation on one's family. In the case of a conflict between two or more villagers, reported to be uncommon, the arena for conflict-resolution is the VC, whether the conflict relates to the forest or some other matter. The VC holds the power and authority to resolve potential conflicts between villagers.

Summarising the findings in *Kayogobey* our main conclusion is that joint activities, joint rules, and rule enforcement – thus collective action – hardly exists at all in the community, or to a very low degree. There is an absence of a well-functioning central authority with the ability to initiate and maintain any substantial degree of collective cooperation and self-governance. This is practically manifested in a number of ways. First, there is an almost complete lack of organised village-activities to which all households must make a contribution, signalling a deeper problem of lacking community-spirit or willingness to work towards a collective good. Second, there is no working system of rules in place to regulate and control a household's level of appropriation by setting well-defined boundaries between land-holdings or allocating quotas each household may harvest or extract from the communal forest. Third, there is a complete absence of any system of monitoring and sanctioning, which in theory could have provided some degree of rule-enforcement. Instead, each household is free to make use of the forest in whatever manner it wishes, with little regard to the condition and sustainability of the CPR or compliance with the few rules that do exist.

In contrast, the findings presented above indicate that there is a high degree of collective action in *Sakuta*. This is made evident by the existence of two village authorities with clear and distinct divisions of responsibility, the VC and the VFMC. These two bodies provide the foundation and framework for all other aspects of collective action in Sakuta; they set the rules of conduct and allocate quotas for land-use, they constitute the arena for collective discussions and decision-making,

despite holding a form veto-power on rulings. They are in charge of enforcement of the rules, which to a large extent are complied with, and hold the authority to deal out sanctions in the event of rule-infractions and they organise communal activities relating to maintenance of the forest.

(c) Summary of the Results

Kayogobey: Economic Homogeneity and a Low Degree of Collective Action due to lack of incentives.

The findings from the interviews conducted in Kayogobey show that collective action is almost entirely absent in the village. We found a general lack of incentives to initiate and maintain collective action. There is no household in the village that reported having a differentiated incentive to initiate collective action, confirming one of our hypotheses in figure 2. This lack of incentives is manifested in two ways. The first is directly connected to the economic situation; no one can afford to think about the collective good as they are too engaged in providing for their own family which most likely explains the almost complete absence of any organised system of governance and repeated violations or what few rules there are. Hypothetically, even if the village was wealthier, collective action could still default as no one would have a differentiated incentive to initiate and organise collective efforts. The second is the above-mentioned feeling of mistrust in the VC and the aversion to solve problems collectively. Shared norms and values have been found to facilitate resource-management (Agrawal and Gibson 1999), but in Kayogobey there were very few indications among the responses that any community-spirit existed which would oblige people to stick together and help each other, underscored by a more general disbelief in co-operating rather than just providing for one's own household.

It appears that deep poverty inhibits collective action as the households are unwilling to direct what few resources they have to contribute towards collective benefits. A strong indication of this was that all respondents stated that they are harvesting as much from the communal forest as is in their present capacity and ability and that none of them could see a realistic way of restraining their level of harvest. On follow-up questions asking whether they could yield some of their consumption in order to allow the forest to recover the reply was very clear – they could simply not afford it and did not see what alternatives they would have. These statements clearly indicate the very short time-horizons the people of Kayogobey harbour; they cannot risk restraining consumption today for more tomorrow and they are in a sense, the typical homo oeconomicusⁱⁱⁱ, only that the utilitarian calculations they make in this decision is about pure survival thus resembling

the bleak predictions made by Hardin (1968). It is also evident that the lack of incentives pervasive in the village is caused by economic homogeneity; the severe, uniform poverty.

Sakuta: Economic Heterogeneity and a High Degree of Collective action due to incentives among the better-off villagers.

The evidence gathered during the interviews and observations in Sakuta suggests the interesting and counter-intuitive result that economic heterogeneity facilitates cooperation and the supply of the collective good, thus confirming one hypothesis in figure 2. In line with one of Olson's (1965) core messages about a 'privileged group' we found clear evidence of this in Sakuta through the regulatory authority of the VC, and to some extent the VFMC. It is also supported by the fact that a significant part of the two bodies are composed of the wealthier individuals in Sakuta. But are the incentives for the better-off as opposed to the poorer households differentiated enough to allow for such Olson-effects? (Baland & Platteau 1999).

Looking first at the incentives and willingness of the poorer respondents interviewed we find clear evidence of free-riding. Three of the six economically deprived stated they were content with life in Sakuta because of the way the forest-community was organised. They accepted the fact that there are wide disparities within the village as long as the wealthier contribute more to managing the forest and running the VC. This significantly indicates the occurrence of both free-riding and Olson-effects. As one villager stated;

'I do not feel anger...or resentment at my neighbour if he is richer because I know that he does not harvest all the produce he could but leaves some for me.' (Amara, Sakuta).

Focusing on the three respondents who belong to the wealthier segment in Sakuta, who also were members of the VC, the evidence of a 'privileged group' is further reinforced. They all stated that they currently were not harvesting as much from the communal forest as they were capable of, since such practice was not considered acceptable by the VC or themselves. They accept the fact that they contribute more, both directly in terms of resources put towards collective village-activities and indirectly by restraining their own harvest, while the poorer are allowed to free-ride on their efforts. They also, importantly, asserted they felt a sense of responsibility to ensure that the quality of the forest was maintained and the village well-organised. In the words of the local chief;

'I believe that the village council has a commitment...to make sure that no one in Sakuta suffers...we are all related here.' (Yaya, Chief in Sakuta).

Thus we arrive at the perhaps counter-intuitive conclusion that collective action failed in economically homogeneous Kayogobey but prospered in heterogeneous Sakuta. In Sakuta, a wealthier privileged group of individuals find it in their interest to provide towards a CPR institution allowing other individuals to free-ride and contribute less. This also confirms our hypothesis that there are Olson-effects, a 'privileged group', which makes economic heterogeneity fostering to collective action.

Further support for this proposition can be found in Wade's (1988) influential book *Village Republics*. It showed that a community's ability to initiate and maintain collective action was correlated with the quality of the natural resource, in Wade's (1988) case amount of rainfall. The corresponding argument here and potentially alternative explanation would be that higher rates of deforestation and degradation in Sakuta led to successful collective action as there would be a need to protect the communal forest. However, neither of the two villages were faced with immediate deterioration and both had similar rates of depletion, reinforcing the argument that a 'privileged group' is needed for collective action and rules out this alternative explanation. Similarly, a lack of understanding among villagers that unrestricted over-consumption leads to depletion would be another explanation. However, this was not the case in either village, especially in Kayogobey where villagers were well aware of the risks but lacked incentives to restrict their appropriation.

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		Dependent variable: Collective Action		
	Independent variable: Degree of Economic Heterogeneity	Joint Village Activities?	Joint Village Rules?	Rule Enforcement?
Kayogobey	Economically Homogeneous	Low	Low	Low
Sakuta	Economically Heterogeneous	High	High	High

Table 2: Summary of main results

V. Conclusion

The contribution of this paper is a result that runs counter to many observers' 'common sense' understanding: successful self-governance and collective action has emerged in the economically *unequal* village of Sakuta, and *not* in equal Kayogobey. Prior research has been highly ambiguous and found that heterogeneity may be both facilitating as well as impeding to collective action. Olson (1965) and Baland and Platteau (1996, 1999) made the case that the emergence and influence of privileged groups could give rise to incentives strong enough to mitigate the impact of heterogeneity. Our findings support that argument, as the case of Sakuta village is a clear-cut example of a privileged group making collective action and management of a common pool resource possible. Our results are thus similar to Vedeld's (2000) study of agro-pastoralists in Mali. Olson's propositions are still highly valid.

Further, it is interesting to note that our results seem to converge neither with the 'U-shaped' nor with the 'Bell-shaped' relationships between economic inequality and cooperation, previously found. But on this point we would like to be very cautious, since we have only studied two villages. In view of the fact that Molinas (1998) studied peasant-cooperatives and Bardhan and Dayton-Johnson (2002) irrigation systems one may ask, though, whether the *object* of cooperation matter? It may be equally instructive to study cases similar to Kayogobey in order to determine whether economic homogeneity and the lack of a privileged group or deep poverty is the key barrier to collective action. This would require finding cases (villages) being economically equal but at the same time more rich than Kayogobey.

The policy implication of our results give support to the (Frank) Sinatra Doctrine: *I did it my way*. In other words, cooperation – or development – can come about in different contexts. We need no blue-print for development or natural resource management. What we need is further understanding of the local context and its possibilities and challenges. It is clear that our study of two villages in Sierra Leone does not negate results from other locations. But it does give support to the idea and possibility that villagers in a country like Sierra Leone, which suffers from chronic poverty and rural backwardness, may initiate and maintain a high degree of successful self-governance and collective action to further their economic interests as well as sustaining the common pool resource.

ⁱ Olson's analysis is however not without its limits, exemplified by the lack of the now established importance of norms, trust and reciprocity (Agrawal and Gibson 1999; Dietz et al. 2003; Ostrom 2005), but still serves the role of a distinct theoretical proposition about collective action to be tested empirically.

ⁱⁱ The eight design-principles are, in short; I. Well-defined boundaries, II. Proportional Equivalence, III. Collective-choice arrangements, IV. Monitoring, V. Graduated Sanctions, VI. Conflict-resolution mechanisms, VII. Minimal recognition of rights to organise, VIII. Nested Enterprises (Ostrom 2005: 261-269).

ⁱⁱⁱ The term homo oeconomicus is “a human maximising his own utility in an opportunistic and calculating manner” (Gray 1987).

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