

# **Collective action in reforestation - A case study from Malawi**

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## **Abstract**

This paper analyses why a certain reforestation project was successful in some villages, while not in others. The analysed forest project depended on collective action from villagers. In one village, I find what I interpret as a social norm of co-operative behaviour, which seems to have contributed to build expectations about mutual co-operation among villagers and hence increased their considered utility of co-operation. A good leader appears to have supported this co-operation norm. In the other villages, less respected leaders seem to have reduced villagers' general motivation for co-operative behaviour in village projects, which have contributed to non-co-operative behaviour also in the forest project. However, one of these low co-operative villages preserved their forest by imposing hard formal penalties on some of the defectors and thus scared everybody else to co-operate. I develop a model to explain important factors in the individual's utility of co-operation versus non-co-operation in the reforestation project.

The empirical analysis is based on qualitative data collected in conjunction with the Malawian Land Tenure and Social Capital project (University of Malawi/ Norwegian Institute of Urban and Regional Research).

Key words: Forestry, collective action, norms, Malawi.

## **Introduction**

How does collective action succeed in rural communities? This thesis investigates a forest planting project in the rural south of Malawi. Small scale farmers were ordered to abstain from cultivating their gardens on a mountain, as the whole mountainside land was designated to forest planting. The forest project hence turned into a conflict over land. It can be considered a collective action problem, because each individual farmer would be better off with continued cultivation on his own garden, while the community as a whole suffered from severe soil erosion due to the deforested mountain. In the long term, everybody would be better off with a forested mountain. The results of this collective action problem differed in the villages surrounding the mountain. In some villages, farmers were convinced to co-operate in the forest project, and the communities were rewarded with a valuable forest resource benefiting all inhabitants. Other villages failed, and today suffer from increasing problems of soil erosion. The main question of this thesis is why and how some villages reached the collectively successful result, while others did not. What were the differences between these villages and how may these differences have resulted in completely different outcomes in the forest project?

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I find that specific circumstances within the villages have affected the individual decisions and thus determined the success or failure of the forest project. In this paper I analyse the decision faced by individual farmers of whether to contribute their land to the forest project or not, first with a formal model of their individual utility, which I afterwards relate to the empirics.

The empirical analysis is based on qualitative data collected during two months of fieldwork in the villages in 2007, with interviews and observations. The fieldwork revealed two main factors behind successful collective action; (1) a social norm supporting general co-operative behaviour, and (2) formal punishment of defectors, in a case in which the social norm was not strong enough to convince farmers of co-operation. Both regulations increase farmers' incentives to co-operate, and thus contribute to preserve the common pool resource. A shared norm can support collective action by imposing loss of reputation for those breaking it and thus expectations about mutual co-operation. Norms develop continuously in a community and depend on legitimacy among inhabitants. Only one of the research villages had a strong norm supporting co-operational behaviour. Through the forest project and other village projects, they experienced that co-operative behaviour was beneficial, both because they became convinced that everybody else would co-operate and because the outcome of village projects was actually distributed fairly in the end. Previous successful experiences with collective action seem to have developed the social norm of co-operative behaviour in this village.

In other villages, there was little co-operation on village level and village resources were to a higher degree captured by a village elite. Villagers had less respect for their leaders and hence did not co-operate in the projects they introduced. Only one of these non-co-operative villages was able to preserve the planted forest, using strict regulation; the forest managers enforced hard punishments on non-co-operating farmers. This method had substantial drawbacks compared to the social norm method. As the punishments were not considered fair and legitimate among farmers, it actually increased the already high level of conflicts and anger towards the village leader. The strict enforcement of rules was crucial in order to preserve the forest, but it probably also gave negative external effects on social capital in the village.

There is a large literature on collective action on common pool resources. Standard economic theory proposes a result in which nobody co-operates, because everybody gains individually from defecting, given the choice of others. Hardin (1968) introduced this depressive outcome as the tragedy of the commons. His proposal is, however, not applicable in the general case, because it leans on the assumption that an individual's choices are independent of his expectation about others' choices (Runge, 1981). Common pool resources can be, and often are, regulated by local communities with reasonable degrees of success (Ostrom, 1990). It is these regulations which induce expectations among individuals about the behaviour of others. If individuals expect that everybody else will co-operate, they might benefit from choosing co-operation, because they know that non-co-operative behaviour may spread. Hence, in the long run, the individual might be best off choosing behaviour depending on the behaviour of others. The role of leadership becomes important as the leader will have the possibility to convince individuals to co-operate by inducing expectations about co-operation (Baland & Platteau, 1996). Leaders

may also use and develop further the level of trust and trustworthiness in the community, which in it- self supports co-operation (Durlauf and Fafchamps, 2004).

### **Modelling the individual decision**

This section develops a model which I believe usefully illustrates important factors behind different outcomes of the analysed forest project. The choice faced by farmers of whether to co-operate or not in this collective action problem is approached through modelling their individual utility. I model the effect of a social norm on personal utility, with inspiration from Nyborg's and Rege's (2003) model on smoking behaviour. I use a tipping model similar to the one developed by Andvig and Moene (1990) on corruption to show that there are only two likely outcomes; either one in which a high share of mountainside farmers co-operates or one in which everybody defects. These two outcomes are likely because the net utility of co-operation increases with the share of co-operators, through increased reputation loss if defecting. I have not included in this model that the probability of obtaining formal punishment if defecting also increases with the share of co-operators (Kleiman, 1999). However, this effect would only strengthen the predictions of the model.

There are two types of people in each village; mountainside farmers and valley farmers. Mountainside farmers are the ones who initially have at least one garden in the mountainside, in addition to others in the valley. Valley farmers only have gardens in the valley. Only mountainside farmers are decision makers. They have to decide whether to contribute their land to the forest project, referred to as co-operating, or continue cultivating, referred to as defecting. In this simple setup, each mountainside farmer has an initial land holding of two area units, one in the mountainside and one in the valley underneath. The variable  $g_i$  refers to the area land contribution to the forest from mountainside farmer  $i$ .  $g_i$  can only take values 1 or 0, meaning farmer  $i$  either co-operates by giving his/her<sup>2</sup> whole garden, choosing  $g_i=1$ , or defects by contributing nothing, choosing  $g_i=0$ . There is no middle way of scaled co-operation possible. The total forested area is the sum of all contributions,  $G = \sum_i g_i$ .

### **Benefits of continued cultivation**

The mountainside farmers want to use their gardens for cultivation. If they co-operate in the forest project, they have to stop cultivating, which imposes a cost to each of them. This cost differs between mountainside farmers, because they depend on their mountainside gardens to different degrees, according to the size of their household and other possible sources of income. The cost of stopping cultivation for mountainside farmer  $i$  is referred to as  $y_i$ .

### **Benefits of forest**

All villagers obtain benefits from the forest, no matter their individual contribution to it. The larger the forested area, the greater are the beneficial effects. The forest

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<sup>2</sup> The gender of the mountainside farmers is not specified, as there are both male and female mountainside farmers. In most cases, the mountainside farmer represents a household, in which the husband and wife work together in all their gardens and the harvest is shared within the household. Females are normally the formal holders of land, due to matrilineal land inheritance in the area. However, men usually make household decisions, also concerning land affairs, through their role as household heads. The representative mountainside farmer is thus referred to as a male. Still, note that single mothers make up a large share of the households, in which case the women are the key decision makers.

creates benefits to villagers mainly in two ways; it prevents soil erosion in the valley and it gives a source of valuable timber. Each mountainside farmer has one area unit of arable land in the valley, which is exposed to soil erosion due to the deforested mountain. Trees in the mountainside prevent soil erosion in the valley, with a positive effect determined as  $v(G)$  in every garden. The positive effect of prevented soil erosion increases with the forested area,  $v'(G) > 0$ . In addition to preventing soil erosion, the forest also gives benefits in terms of timber, valuable for use in house building and for firewood. Each villager will receive a share  $\beta$  of the forest in terms of timber, independent of his own contribution. The total benefits of forest to each farmer is thus:  $v(G) + \beta G$ .

### ***Expected penalty by defecting***

Defecting mountainside farmers risk some kind of formal punishment from the leaders if they are caught. Each farmer faces a probability  $q$  of receiving a penalty  $P$  if he chooses to defect. Their expected penalty is thus  $qP$ . It is likely that everybody in the village will know if somebody defects and who that is, because the village is small and everybody sees whether people cultivate their gardens or not. Hence, the leaders will also know which farmers defect. The probability  $q$  of receiving a penalty if defecting can be considered as the probability that the leaders will indeed be strong enough to impose the penalty on defecting farmers.<sup>3</sup>

### ***Social disapproval by defecting***

Individuals care about their reputation in the village. By defecting in the forest project, the mountainside farmers obtain some loss of reputation, or social disapproval, from the villagers who thought they ought to have co-operated. These people are the ones in the village who agree upon and follow a norm<sup>4</sup>, saying that one should co-operate in common village projects organised by the leader<sup>5</sup>. The norm believers in the village will impose social disapproval<sup>6</sup> on defecting mountainside farmers. The share of norm believers in the village is determined as  $n$ .

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<sup>3</sup> It might be relevant to include differential punishments, as village leaders do seem to punish villages differently according to their relationship with the leader, discussed later in this paper in the empirical part. However, expected punishment is modelled as equal to all villagers here, for simplification of the model. The fieldwork did not reveal any indications that mountainside farmers have been punished differently in the forest project or that farmers who are closer related to the leaders tend to defect more than others. The effect might rather be the opposite; that relatives of the leaders tend to obey their decisions to a larger extent than non-relatives.

<sup>4</sup> Ostrom (2005) distinguishes a norm from a rule by defining a norm as not including an “or else”-element. That is, the norm implies no commonly known formal sanctions imposed on defectors, though it might imply more informal social sanctions, like loss of reputation. Norms can help reaching a co-operative outcome in collective action games, because they give people a reason to believe that others will co-operate in fear of social sanctions. When people believe that everybody else will co-operate, they do not suspect that they will end up as suckers if they co-operate too, and hence they co-operate. Such mutual expectations about co-operation from others in turn make everybody co-operate.

<sup>5</sup> The co-operation norm can be considered as a norm of reciprocity for convenience. A reciprocity norm implies that one should co-operate if others co-operate, and defect if others defect. However, I do not call it a reciprocity norm, because it would imply that the norm decreases individual motivation for co-operation if nobody else co-operates. Hence, existence of the norm would depend on the co-operation level. I assume in this set-up that the time span is too short for norm development, thus that the norm level is exogenously given. In this circumstance it would be wrong to determine it as a reciprocity norm, though it can be thought of as similar.

<sup>6</sup> Norms are supported by their inducement of unpleasant feelings like guilt and shame to the norm breaker (Baland and Platteau, 1996). Hence, the social disapproval need not be due to a deliberate or costly choice from the sanctioner. Only the suspicion that someone dislikes his behaviour might induce the bad consciousness felt by the norm breaker. (Nyborg and Rege, 2003)

Hence, each defecting mountainside farmer receives social disapproval  $nd$ , where  $d$  is determined as the amount of social disapproval given by each norm believer in the group. The social disapproval can be considered as the feeling of guilt for the norm breaker. This feeling will depend on how many other norm breakers there are in the group. If I am the only one breaking the norm, I am likely to feel more ashamed than if there are several others who do the same around me. The share of norm breakers in the forest project is determined as the share of defecting mountainside farmers,  $1-x$ , where  $x$  is the share of co-operating mountainside farmers. The total reputation loss for a defecting mountainside farmer is thus:  $\frac{nd}{1-x}$ . Note that this is a very

simplified expression for reputation loss. The relationship between a norm and the share of people following it in a specific situation is in practice correlated. In collective action problems, people tend to co-operate if others co-operate, and defect if others defect. In game theoretical terms this is referred to as a tit-for-tat strategy. If decisions are made simultaneously, like in the forest project, they have to base their decisions on expectations about what others will do. Expectations will partly depend on their experiences with similar collective action problems. Individuals who have experienced previously that others co-operate, might expect that they co-operate this time too, and hence choose co-operation themselves. With time, people don't even consider their net utility of different strategies, and hence the co-operation behaviour evolves into a habit, or a norm of behaviour. In the end, people might not even know why they follow the norm, they just do it (Ostrom, 1990). This is one of the ways norms develop in societies, and expectations about co-operation thus strongly depend on the existence of such a co-operation norm. However, expectations about co-operation in the specific forest project also depend on the conditions of that very project. The co-operation norm is based on experiences of co-operation in smaller projects, in which the individual sacrifice is relatively small compared to the individual sacrifice in the forest project. Even if people are expected to co-operate in other projects, it might be that the individual sacrifice in the forest project was considered higher and that expectations about co-operation thus decreased. The general legitimacy of the project is also important in this regard. Expectations about co-operation would increase if the project was considered as fair and efficient among the general population. The legitimacy depends on the net utility of the project, a valuation of the costs of lost arable land versus the benefits of forest to the whole community, and how people consider distributional effects of costs and benefits within the community. Assessment of efficiency versus equity is important for the general legitimacy of the project.<sup>7</sup> But the legitimacy also depends on the process in advance of the project. How were people informed? Did they feel included in the management decisions? The information people get in advance creates their expectations about future costs and benefits, which affects their evaluation of the project as legitimate or not. In addition, if people feel they have something to say in the decision making, they might feel also that the project is more legitimate than otherwise. I assume that villagers agree upon the legitimacy of the forest project, and that they base their expectation about the share of co-operatetors in the same project on this average legitimacy. Hence, I assume that their expectation about  $x$  is

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<sup>7</sup> Collective efficiency of a project might outweigh negative distributional effects on the common legitimacy. Thomas et al (1986) claims that legitimacy of a social structure can support collective action even if it is only legitimate in terms of efficiency (validity) and not in equity. Through experiments they show that individuals might support a given social structure, although it generates what is collectively defined as inequity to their disadvantage, if they are convinced about its benefits for collective purpose.

independent of the general share of norm believers in the village,  $n$ .  $n$  on the other side, is known to everybody in advance of the forest project, because it is determined as the share of villagers who normally co-operate in common village projects ordered by the leader. Note that norm believing mountainside farmers are expected to co-operate in the forest project, no matter the legitimacy of it, due to their norm belief. Hence, a share of  $x$  is initially determined due to  $n$ . This effect is however not taken into account in this simplified model. I justify this simplification by pointing out that this effect would only increase the already positive effect of  $n$  on the utility for co-operation, and hence only strengthen the predictions of the model.

The cost of defecting for mountainside farmer  $i$  is:  $qP + \frac{nd}{1-x}$ , where  $q$ ,  $P$ ,  $n$  and  $d$  are exogenously given variables.

### **Net present value utility**

There are two time periods in this model, period 1 and period 2. The decision of whether to co-operate or defect is made in period 1. Costs of defecting due to formal punishment and social sanctions arrive directly after the choice is made, hence the costs are considered to appear in period 1. The cost of lost possibilities to cultivate the mountainside garden also occurs in period 1, as it can be considered the net present value of all future income from cultivation. The net utility for mountainside farmer  $i$  is thus:

$$U^1_i = (1-g_i)(y_i - qP - \frac{nd}{1-x}) \quad \text{s.t. } G = \sum_j g_j$$

It takes some time for the forest to mature. The benefits from the forest therefore appear in period 2. Farmer  $i$  discounts future payoff with his individual factor  $\delta_i$ . The farmer's utility in period 2 is:

$$U^2_i = \beta G + v(G) \quad 0 \leq \beta \leq 1$$

His present value utility seen from period 1 is thus:

$$U_i(g_i, G) = (1-g_i)(y_i - qP - \frac{nd}{1-x}) + \delta_i[\beta G + v(G)] \quad \text{s.t. } G = \sum_j g_j$$

Farmer  $i$  maximises his utility and chooses to co-operate only if it gives him more utility than defecting. His net utility is:

$$U_i = U_i(g_i=1, G) - U_i(g_i=0, G) = qP + \frac{nd}{1-x} - y_i + (\delta_i[\beta G + v(G)])'_G$$

The marginal effect of each contributed garden on the benefits of forest is so small that the individual mountainside farmer does not consider it in his decision making:

$$(\delta_i[\beta G + v(G)])'_G \approx 0$$

Hence, everybody disregard the positive effect of their own contribution and their net utility from co-operation is independent of the total forested area. The net utility of co-operation is thus:

$$U_i = qP + \frac{nd}{1-x} - y_i$$

The utility of co-operation for each farmer is positively dependent on; i) the probability of receiving penalties by defecting,  $q$ ; ii) the penalty itself,  $P$ ; iii) the share of norm followers in the village,  $n$ ; iv) the strength of social disapproval,  $d$ ; and v) the share of co-operating mountainside farmers,  $x$ , and negatively dependent on vi) the individual valued benefits of cultivating in the mountainside,  $y_i$ . The representative farmer thus chooses co-operation if his net utility is positive, hence if:

$$qP + \frac{nd}{1-x} - y_i > 0, \text{ that is if } y_i < qP + \frac{nd}{1-x}.$$

### **Dynamic share of co-operators**

All  $i$  mountainside farmers are associated with their individual level of land dependency,  $y_i$ , distributed on an interval  $[y^l, y^h]$ , where  $y^l$  refers to the lowest value of  $y$  and  $y^h$  refers to the highest value of  $y$ . If the sum of the two right hand terms in equation 1 is greater than  $y^h$ , everybody will co-operate. Vice versa, everybody will defect if the sum of the two right hand terms is less than  $y^l$ . The cumulative density of

$y_i$  is  $F(\cdot)$ , such that  $F(y^l)=0$  and  $F(y^h)=1$ .  $F(qP + \frac{nd}{1-x})$  thus determine the fraction of

co-operating mountainside farmers.  $F(qP + \frac{nd}{1-x})$  can be seen as the share of co-

operating mountainside farmers, hence  $x = F(qP + \frac{nd}{1-x})$ . When more mountainside

farmers co-operate, the net utility from co-operation increases and hence even more co-operates. This relationship induces that the outcome will tip in one of two directions and end up at either full co-operation or full defection. If we assume the

distribution of  $y_i$  to be bell shaped, the cumulative distribution  $F(qP + \frac{nd}{1-x})$  has a s-

shape like illustrated in figure 1. The figure illustrates that there are three possible

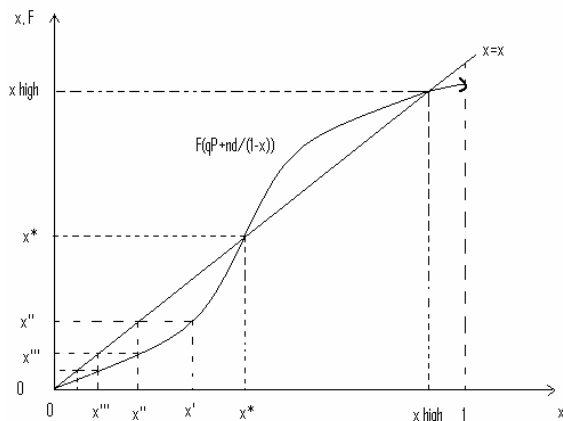
equilibria of  $x$ , at the crossing points of  $F(qP + \frac{nd}{1-x})$  with the curve  $x=x$ . These

equilibria are due to the assumption that people base their choice of co-operation or defection on the right value of  $x$ , which is the basis of the curve  $x=x$ . However, the same three equilibria will result if we consider this as a dynamic game. Assume that the decisions are made over a limited period of time, in which farmers continuously make decisions which are observable by others. The game can thus be considered as one of several rounds with simultaneous decisions. In the first round, farmers make their decision based solely on their expectation about what others will do. This is when the legitimacy of the forest project plays an important role, in determining the initial expectations about co-operation. However, as the first round is played and the actual co-operation level is revealed, farmers update their expectations, and make their choice again, based on their latest experience. Imagine that everybody makes their decision based on a share of co-operators  $x=x'$ . Then, the actual share of co-operators will turn out to be only  $x''$ , because only this few would want to co-operate when  $x$  is as low as  $x'$ . In the second round, farmers base their decision on there being only  $x''$  share of co-operators, thus an even smaller share,  $x'''$  will co-operate in the second round. When this even lower level of  $x$  is revealed, farmers will again downgrade their belief about  $x$ , and the farmers on the margin will stop co-operating because their net utility just tipped to be negative. Thus, the third round will reveal an even lower share of co-operators. In this way, farmers' belief about  $x$  and the actual  $x$  will continue to move together, until they end up at the same value, which must be

at  $x=0$ , due to the assumed  $F(qP + \frac{nd}{1-x})$  drawn in figure 1. From the shape the

shape of the curve we see that there are only three such equilibriums, of which only the two,  $x=0$  and  $x= x^{high}$ , are stable. Note that the assumptions behind the distinct zero co-operation equilibrium is that the mountainside farmer with the lowest land

dependency,  $y^l$ , who is therefore most prone to co-operate, will be exactly on the margin but not willing to co-operate if nobody else co-operate,  $x=0$ , hence  $y^l = qP + nd$ . The intermediate equilibrium is unstable, because only a marginal change in  $x$  will push the equilibrium to one of the other equilibrium. Consider a share of co-operating mountainside farmers at the intermediate equilibrium  $x=x^*$ . If one of the defecting farmers changed his mind of some reason and decided to co-operate, his single contribution would imply an increase in  $x$  which would tip the net utility of the farmers on the margin from negative to positive and induce them to co-operate. Their co-operation would again increase  $x$  and induce even more to co-operate, and so on stepwise, until the high co-operation equilibrium is reached.



**Figure 1:** Development of the share of co-operating mountainside farmers.

### Importance of norms

The cumulative distribution function  $F(qP + \frac{nd}{1-x})$  determines a co-operation level  $x$

for given values of  $y_i$ . Now consider two villages with different shares of norm believers. In village 1 (from now V1), the norm is strongly established,  $n=n^{high}$ , which makes norm breakers feel bad and increases their motivation for co-operation. In village 2 (V2) there are less norm believers,  $n=n^{low}$ . Figure 2 illustrates how a strong difference in norm belief between villages can lead to two distinct outcomes of co-operators. Through the greater norm strength in V1, the individual utility of co-operation is higher for every level of  $x$  than in V2, when all other variables are equal.

$F1 = F(qP + \frac{n^{high}d}{1-x})$  is always higher than  $F2 = F(qP + \frac{n^{low}d}{1-x})$ . In V1, the large amount

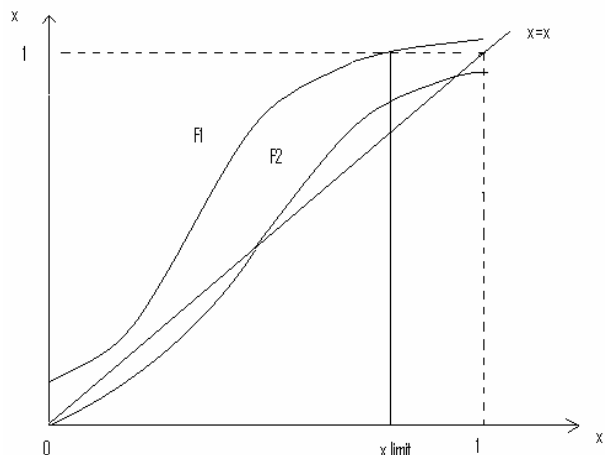
of norm believers will impose so strong social sanctions on defectors that the farmers with the lowest land dependency will co-operate, no matter how many others who co-operate. The dynamic development of  $x$  imposes that the share of co-operators will always be increasing, no matter how low the co-operation level starts at. When V1 reach a co-operation level higher than  $x^{limit}$ , everybody will co-operate.

This is a stable equilibrium because  $y^h < qP + \frac{n^{high}d}{1-x^{limit}}$ . Hence, everybody will co-

operate in V1. For the same distribution of  $y_i$  and the same levels of  $qP$  and  $d$  in V2, the fact that only few believe in the norm implies that the reputation loss when



defecting is smaller. According to the movement of  $F(qP + \frac{n^{low}d}{1-x})$  illustrated in figure 3-4, V2 has the possibility of reaching both a high level co-operation and a zero co-operation equilibrium, while V1 is sure to reach a high level of co-operation. In this manner, the initial share of norm believers in a village can determine whether the village reaches a high or low level of co-operation. The different norm believes in the analysed villages partly explain the different outcomes reached in the forest project.



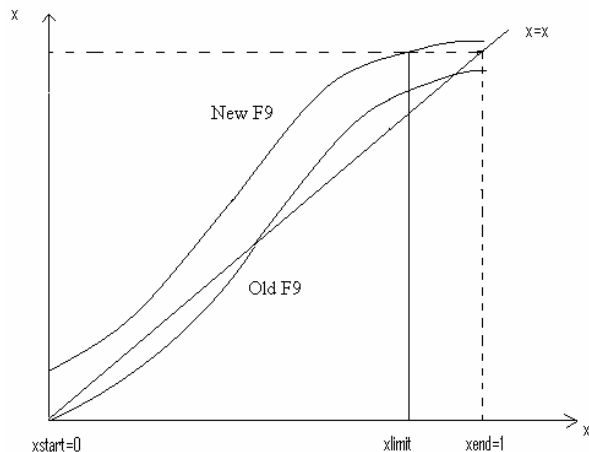
**Figure 2:** How an increased share of norm believers can push the equilibrium from low co-operation to full co-operation.

### **Importance of formal punishment**

We have seen that an exogenous shift in  $n$  can push the outcome of the forest project in the one or the other direction. In the same manner, an exogenous shift in the expected formal punishment,  $qP$ , can determine the outcome. For a higher level of expected punishment, the share of co-operating mountainside farmers should be increased, because the net utility of co-operating increases. Now consider another village, village 9 (V9), which is at the zero co-operation equilibrium in the first rounds of the game. Suddenly, the forest managers in V9 decide to increase the punishment for defecting, in order to convince farmers to co-operate. Two defecting farmers are chosen randomly and sent to prison, and the managers by this signal that other defectors can expect a similar treatment if they continue defecting. The punishment increases, from  $P^{low}$  to  $P^{high}$ , and farmers upgrade their expected punishment. Thus their net utility of co-operation increases. The cumulative distribution function moves from Old  $F9 = F(qP^{low} + \frac{nd}{1-x})$  to New  $F9 = F(qP^{high} + \frac{nd}{1-x})$ , as illustrated in figure 3.

If the positive shift in  $F(qP + \frac{nd}{1-x})$  is large enough, so that New F9 is always to the left of the curve  $x=x$ , the increased punishment will induce more and more farmers to co-operate so that V9 will end up in an equilibrium in which everybody co-operates,  $x=1$ . This is also what actually happened in V9, which resulted in the same outcome of full co-operation as V1 got with their high share of norm believers. V9 did not have the same share of norm believers, so they had to use the method of increased formal sanctioning in order to shift the net utility of co-operation for mountainside farmers. Two of the defecting farmers were heavily punished at the start of the project. Other defectors started co-operating in fear of obtaining the same punishment. Thus, managers actually only had to use the hard sanctions on two of

the defectors, which set an example for all others, in order to reach the high co-operation equilibrium.



**Figure 3:** How an increase in expected penalty induces a move from the low co-operation equilibrium to the high co-operation equilibrium in V9

## Explaining the outcome

### **The conflict**

*“The whole mountainside was cultivated, except some stony areas with almost no soil. Then Masaf initiated the tree planting, came here and said: “Look, there are no trees in the mountain, we want to plant trees.””* (Chief Village 9)

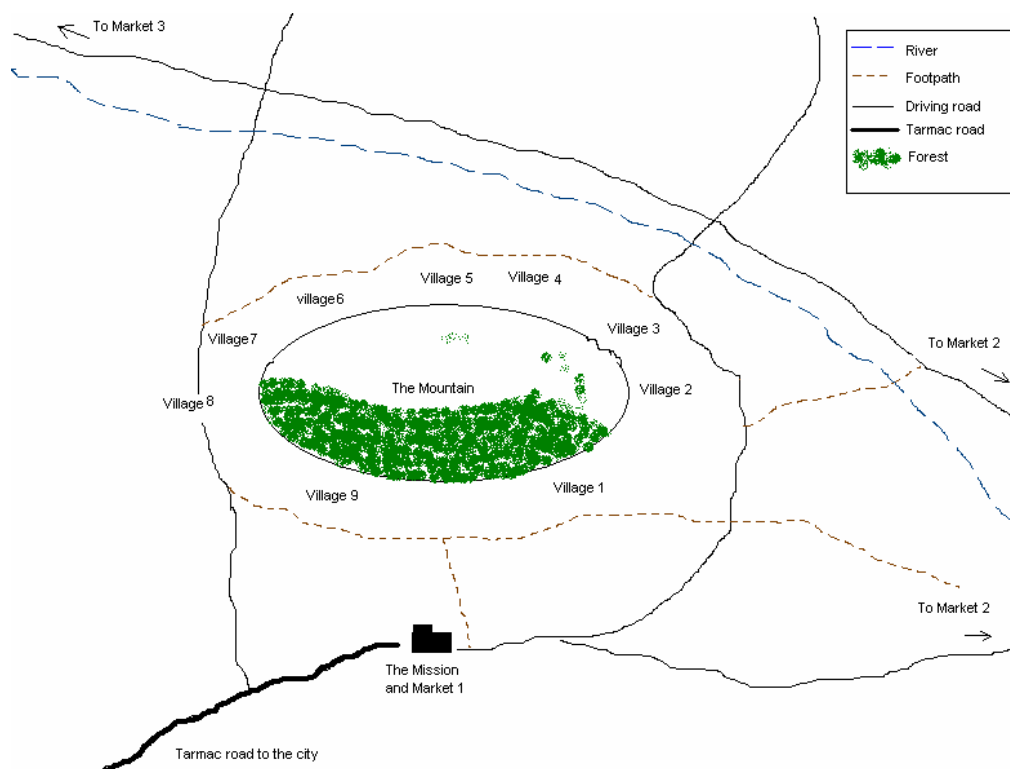
The analysed mountain forest project started in 2000 on initiative from a famous Member of Parliament (MoP) from the area. The mountain had been deforested for many years and the land was cultivated by subsistence farmers. Problems related to soil erosion were increasing. Some areas of the mountainside were already abandoned by farmers, because water had washed away all fertile soil. Hence, the MoP, with financing from MASAF<sup>8</sup>, introduced a forest planting project on the whole mountain in order to prevent further cultivation. The farmers lost their cultivation rights without compensation, which was a severe strike for them, as land is scarce and an important constraint to production in this heavily populated area.

There are nine villages surrounding the mountain, all controlling their separate parts of the mountainside. The mountainside land belonging to one village was mostly cultivated by inhabitants of the same village. In some villages, the mountainside farmers tried to resist the forest project by uprooting tree seedlings and continue cultivating. Due to such continuous sabotage of the forest, half of the mountainside was bare again six years after planting. In other villages, the forest got to grow and stands thick and vigorous today, as a valuable resource for the communities. The map in figure 4 illustrates the location and level of forestation of the villages surrounding the mountain. The nine villages are organised in three geographically determined groups; group A, B and C. Each group of villages has a leading village,

<sup>8</sup> MASAF (Malawi Social Action Fund) is an organisation financing community development projects, with credit from the World Bank.

*the group village*. This paper mainly discuss villages 1-5 and 9, as they represent both successfully forested villages; V1 and V9 of group A and C; and to different degrees deforested villages; V2, V3, V4 and V5 of group B.

What caused such differing outcomes in otherwise seemingly similar villages? I found that inhabitants of village 1 are generally more cooperative when it comes to village projects. More people show up to public meetings, and more people tend to contribute to public works. I thus argue that there is a norm of cooperative behaviour in village 1, which is stronger than in the other villages and seem to have prevented mountainside farmers of sabotaging the forest project. This cooperative behaviour seems to be, at least partly, induced by their strong village leader.



**Figure 4:** Map of the mountain and the villages surrounding it. The villages (V) surrounding the mountain belong to three different groups; (1) group A = V1 + seven other villages located more south; V1 is the group village, (2) group B = V2, V3, V4, V5 + two other villages located east; V2 is the group village, and (3) group C = V6, V7, V8, V9; V8 is the group village.

The proceeding sections discuss how two variables may have affected the project result; leadership in general and the specific management of the forest project within the villages. The analyse is done on the background of observations of village life and interviews done with mountainside farmers, other villagers, forest committee members, traditional leaders and other key informants during my fieldwork in the area in the summer of 2007.

## **Leadership**

Leadership is essential in order to reach a co-operative outcome in collective action problems. A good leader may induce collective action by fostering concern for the common good, making free-riders feel guilty and encouraging mimicry of good behaviour through role models (Durlauf and Fafchamps, 2004). By fostering concern for the common good, leaders increase the legitimacy of the project, which I assumed in the theoretical model to increase farmers' expectations of co-operation from others, which again increase the actual co-operation. Making free-riders feel guilty and encouraging good behaviour are means of increasing the strength of the co-operation norm in the village, which is modelled as increasing the share of norm believers, who induce co-operation by imposing social disapproval on defectors. In this manner, good leaders increase the probability of reaching a co-operative outcome. This section analyses how different leaders have affected the outcome of the forest project in the different villages.

The village is the basic power structure and decision-making arrangement in rural Malawi. The village leader (VL) uses councillors, normally relatives and acquaintances, as advisors, and calls in for public meetings when there are issues relevant for the whole village. More important issues will first be brought to the group village leader (GVL), who might convey them further to the TA (traditional authority). Information moves both ways through this chain; people – VL – GVL – TA. Village decisions are taken at public meetings, either at village or group village level. The leader introduces the issue, it is discussed publicly and a decision is made by consensus. This traditional democratic process is avoiding conflicts and power struggles in the communities (Kayambazinthu, 2000).

Traditional leaders in Africa have lost authority due to political and economical change the last decades. Erosion of traditional power is often considered an important factor behind unsuccessful management of common pool resources at village level, due to the organisational hole it creates (Baland and Platteau, 1999).

*“There were a lot of natural resources in the mountain during Kamuzu (former president Banda) period..., but after the coming of democracy people have changed their good behaviour of not cutting trees carelessly. ... Many trees have been cut down in the name of democracy and freedom. When I asked them why they were cutting trees like that, they always said it was their freedom. So I had nothing to say because we village leaders are not even respected. People stopped obeying what we were telling them.” (Leader, village 3)*

Authority of the village leaders differs between the research villages, as to respect and legitimacy obtained from the villagers. Highly respected leaders have a greater ability to persuade people to follow rules, not necessarily by imposing hard punishments, but due to their reputation as trustworthy individuals. When leaders are considered as well behaved and working for the best of the whole community, not pursuing individual interests, people are more willingly led by them. They follow the leader's order, because they trust her decisions to be right and good. This is what I consider as believing in the norm of co-operation in collective action problems, which means obeying leader's orders and imposing some kind of social sanctions on the ones who do not. People are not found to believe in a co-operation norm when their leaders behave badly and act mostly for their own personal benefit. These leaders

are not respected, their orders are not considered to benefit others than themselves, and hence people do not take their orders. If nobody believes in the norm, there are also no sanctions imposed on the norm breakers, and no further incentives to follow it. As the power of traditional authorities in Malawi is eroding, the consequence seems to be that traditional leaders have to earn their power through respectful and good behaviour, to a larger extent than previously.

*“The trees were planted and they grew but the problem is that the group village leader B is selling them secretly. As a result people are also cutting them down at night. Nobody can stop them cutting the trees down. The VLs are the ones who are supposed to take action but they are too weak. People do not seem to take them seriously. I wish they were like a certain group village leader on the other side of the district. After a hill in the area was afforested he told his people that who ever will be found cutting trees the only remedy is expulsion from the area. Up to now the trees are intact. But this is because he is feared and respected by his people.”* (Man, village 3; MLTSC research project field notes<sup>9</sup>)

### **Group village leaders**

Group A and group B, have very different leaders. Group village leader of group A (GVL A) is said to have the hardest leader style in the area. People are scared of her, simply due to the way she acts:

*“GVL A is very strong. She’s hard if people don’t work. It is not that she punishes them, I never heard of that, it is the way she speaks to people. They are scared of her. For example, look at the forest in the mountainside, people in group1 are too scared to cut the trees down, while at the other side the forest is gone.”* (Man, group A)

Though feared, this leader is also highly respected. Almost daily, villagers from all eight villages under her group come to her courtyard to ask advice or for a court sentence in conflicts. For such court cases both parts in the conflict has to pay a considerable amount of money<sup>10</sup>. I take the fact that so many still come to the group leader with conflicting issues as a sign of their faith in her judgements. Their faith in her behaviour is what I believe have convinced them to believe in the co-operation norm.

Whereas GVL A is highly respected, and hence gets a lot done in her villages, the leader of group B (GVL B) has a very different position in her communities. She is said to be much weaker and not able to control her people. During my seven weeks stay in the villages, GVL B was only once called to solve a conflict. This dispute was however too difficult for her to settle on her own, so she sent the case further to the TA. My impression is that this lack of cases brought to her is a sign of little faith in her abilities to settle disputes fairly, which, in addition to little respect in other

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<sup>9</sup> Malawian Land Tenure and Social Capital Research Project collected qualitative data from villages around the country, included village 3 analysed in this thesis. The data is collected by Malawian research assistants who speak the local language.

<sup>10</sup> Each part in the conflict must pay 200 K (US\$1,4) to get the conflict judged. Traditionally, the premium was one chicken from each part, but this have lately turned out to be too expensive for the villagers. A chicken costs ca 400 K at the market, but few can afford meat except for special occasions.

regards, have contributed to a low share of norm believers, at least in her own village, V2, but probably also in the whole of group B.

*“GVL B is always in conflict with her people and that is why you don’t see any development like in Village 1.... She has also been trying to grab land from her people. With that do you think people will love her? We are just watching her”.* (Old woman, V2)

As this old woman in V2 hints, GVL B is short of land. She has many daughters, who all have been allocated land from her, due to matrilineal custom. None of them, however, have enough land, and several of them rent land, something a chief’s family is not supposed to do<sup>11</sup> (MLTSC research project field notes). Just the fact that the village leader, who is supposed to control all village customary land (on powers delegated from the TA), is lacking land, can have contributed to eroding her authority in the village. The power of a leader is originally based on controlling land<sup>12</sup>. A chief without land is thus not considered much of a chief, also because it makes her poor. A man in village 2 confirms this hypothesis:

*“GVL A is much more powerful and respected than GVL B. In village 1, the response is rapid and positive, but in village 2, people just sit down. If there is a dispute, everyone will follow what is said in group A but not in group B. GVL B is even renting land herself. This gives her an even weaker position.”* (Man, V2; MLTSC research project field notes)

### ***Village leaders***

The group village leaders discussed above also function as village leaders in their own village. A village leader, by the villagers also referred to as the chief, has the daily contact with his villagers, as he lives in the village among them (in nearly all cases). He is the one they bring their problems and conflicts to and he is the one who knows and sees what is going on in village daily life. The village leader is thus very important in terms of making people contribute to village development.

Village 4 is special. The people have a bad reputation all over the area for being thieves, bad-behaved, dangerous and not listening to their village leader. The latter is confirmed by observing village life. The chief, an old woman, also without land, behaves disrespectfully, according to a village woman:

*“... she (the VL) is a problem sometimes. She shouts at us when she speaks, “don’t let your goats go there and there”, and so forth. She gives orders like she has great powers, only because she is VL. It doesn’t bother me much, I just don’t take into account whatever she is saying.”* (Woman, V4)

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<sup>11</sup> Traditionally, renting land has been unheard of in Malawi, because land has been abundant. Lately, rules concerning this and other land issues are changing, due to increased pressure on land and modernisation efforts. Rules of today, according to the TA of the area, state that it is allowed to rent out land, but for a period of maximum 2 years to the same person.

<sup>12</sup> Chieftaincies initially emerged when a clan came to settle down in an unpopulated area and hence claimed rights to this land. Newcomers would later have to get permission from these first people to settle on their land. In this way the village developed. The first settlers hold rights to the chieftaincy, which is inherited within their clan. Although leaders today do not have any land to allocate to newcomers, the role of leaders is still closely related to the control of land.

People do not obey her orders if they do not gain personally from it, and more importantly, this non co-operative behaviour seems to be accepted by other villages. There are few co-operators in village 4, implying there is no such social norm of co-operation as found in village 1.

The leader of village 5 was also in weak powers at the time of the forest project, according to local sources. However, his power changed around 2004/2005 due to new government policies. At this time, the government decided to subsidize poor farmers with fertilizer, as a step towards increasing agricultural production and making subsistence farmers self-supplied with food. Each household was supposed to obtain one coupon which could be used to buy subsidised fertilizer. These coupons became extremely important for the population, which mainly consists of pure subsistence farmers, who never could have afforded fertilizer without the subsidy coupons. Village leaders were given the task of distributing the coupons. This new system increased the chiefs' power in V5. Suddenly, it was beneficial to be on good terms with the chief and people started coming when he called in for public meetings and contributing to public works when he ordered it. People now got incentives to co-operate in village projects. The external positive shift in leader's power brought a new equilibrium in people's behaviour and a new co-operational atmosphere, which developed into a norm of co-operation in V5. However, the new co-operation norm came too late to benefit the forest project. The trees planted in the forest project were cut down relatively immediately after planting and people never stopped cultivation, as the norm had not yet developed. Other villages were also given this new system of fertilizer subsidy coupons; did it increase the powers of the chiefs in other villages than V5? Probably yes, but of the villages I visited, it was only in village 5 I found such a considerable change in leader powers and this was the explanation I got.

Leaders' authority in the villages seems to have affected the forest outcome through their ability to convince people to co-operate, and hence creating a norm of co-operation. A high share of norm believers in V1 increased net utility of co-operation, through fear of social disapproval and by increasing expectations about co-operative behaviour from others. In V1, everybody was aware of the reputation cost of defecting, and thus people expected few others to defect. The mere expectations about high co-operation have probably increased farmers' evaluation of the project and hence induced co-operation. All other analysed villages initially had less respected leaders, who did not manage to convince their villagers about general co-operation, and thus expectations about co-operational behaviour in the forest project were also lower. It should be emphasized that the causality between leader behaviour and share of norm believers in a village is unknown and probably goes both ways. Improper leader behaviour might result in few norm believers, but an initial low share of norm believers also lowers leader's motivation for village development and hence might as well contribute to illegitimate leader behaviour.

### ***Project design***

Institutional design and how decisions are made can overcome barriers to collective action in forest management (Varughese and Ostrom, 2001). Different management schemes were imposed in the analysed villages and have affected net utility of co-

operation for the individual mountainside farmer, especially through formal punishment. In addition, efficiency and distribution of benefits from the forest, and the implementation process, affected the general legitimacy of the forest project, which again affected expectations about others' behaviour.

### ***Forest committees***

The first public meeting concerning the forest project in 2000 elected three supervising committees. One was the leading umbrella committee for the two other sub committees. There was one sub committee for group A and B, including V1, V2, V3, V4 and V5, and one subcommittee for group C, including V6, V7, V8 and V9. These committees were supposed to manage the forest project and be responsible for the outcome, in co-operation with village leaders. Each of the tree committees consisted of ten members. Several village leaders were among these. At the election meeting, people present from each village chose their own representatives for the committees. However, not all villages were represented, while other villages had several representatives. In the subcommittee for group 1 and 2, most members came from villages under group A. V2, V3, V4 and V5 were not represented at all. This is probably due to their low attendance at the election meeting, indicating low initial enthusiasm for the project.

The committees initially had regular meetings, guarded the forest and made decisions for forest rules and policies for harvesting of timber. The sub committee for group 3 still works for this purpose. They have the highest authority over the forest in group 3 and decide whether people should be given permissions to cut trees or not. They co-operate well with the village leaders, and this gives the committees legitimacy for their activities. The subcommittee for group A and B has a more difficult time co-operating with the chiefs, especially GVL A. She was not satisfied with the work of the committee and therefore took the full management role herself. She sacked the committee, leaving them with no power over the forest in group A. The committee leader has complained this degradation of power to the TA, but has not come any further with his claims by now. Since most of the original members in this committee came from group A, they have resigned from the work, and the committee is not active anymore. Hence, neither group A nor group B have any managing committee, and the full responsibility is left with the group and village leaders. Comparing with the faithful work of the sub committee of group C, it would have been favourable if groups A and B had assigned the power between leaders and committees. In lack of a working committee, all responsibility is left on the shoulders of the leaders. As is the case in group B, the leaders are not strong enough to manage the forest successfully. A supervising committee, consisting of members representing all villagers, could have had a better chance of inducing co-operative norms in the villages and leading the forest project towards the better outcome.

### ***Project implementation***

The local communities were not given a choice of whether to receive the forest project or not, the implementation was considered a government order. VL1 seems to be the only leader surrounding the mountain who welcomed the forest project and devoted efforts to its success already from the start phase. The other leaders were probably aware that the project would induce conflicts with the mountainside



farmers, which they would have problems handling. As VL1 was more concerned about the forest project, she seems to have made larger efforts informing and persuading her villagers about the beneficial effects of trees. Still, most mountainside farmers, and also some in village 1, claim they never heard about the project before workers came to their gardens to plant the seedlings. There was an information meeting concerning the project in advance, but it seems that few people attended this meeting. Thus, the information they got was probably not more than that the government wanted to plant trees and that they had to stop cultivating.

*“We were not told of the project in advance. We heard that there was a meeting somewhere far away, not in the village, but our VL did not inform us about this meeting. He never called in for a meeting, if he had then all the problems would have been avoided, people would have obeyed. We only heard the rumour that trees were to be planted in the mountain, and that those who continued to cultivate would be taken to the police.” (Man, V9)*

According to my informants, nobody knew in advance how the user rights to the timber were going to be distributed. Rules for use of the future timber were decided upon in March, shortly after plantings. The same rules held for the whole mountain. The mature trees were to be used only for development work in the village or for house building for the poor. These rules were spread to people at public meetings at group level, but again not all people attend such meetings. Village 4 and 5 are especially badly represented at this kind of public meetings at group level. This may be due to their dislike of their group leader, but may also be due to the longer distance they have to walk to reach the meeting ground. Present or not, rumours spread easily in these villages, hence most people should have obtained the information after a while. However, proper information about the future benefits of forest, how it would prevent erosion and how timber was going to be distributed, would have increased the legitimacy of the forest project and thus increased incentives for co-operation.

### ***Control and expected penalty***

Expected punishment imposed on defecting mountainside farmers is a considerable variable in their decision of whether to co-operate or not. The harder the penalties and the more probable their occurrence, the more costly it will be to defect. How did expected punishment influence the choice of mountainside farmers in the research villages? They all got some of the same message regarding punishment of defectors; those who continued to cultivate their plots or uprooted trees in the mountainside would be taken to the police. Police custody is quite a fearful threat in this context.<sup>13</sup> The threat was put forward by the initiating MoP, who put more weight behind the threat as he was a government representative. His random visits to the forest scared many from damaging the trees as long as he was in parliament.

The responsibility of guarding the forest and punishing defectors was held by VLS in co-operation with the committees. The question is, however, if people really expected forest managers to be hard enough to implement these heavy threats in

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<sup>13</sup> Governmental punishments have a fearful reputation in Malawi, due to the hard treatments during Banda's dictatorship (1963-1994). Although Banda was removed in 1994 and democracy since then has softened up old systems, government officials and policy still has a job to do to ascertain Malawians that their government is acting for the best of the people. Police custody was therefore seen as a very scary punishment.

the end. In V3, V4, V5, V6, V7 and V9, people sabotaged the forest project by uprooting trees, pouring salt over the seedlings or set the mountainside ablaze to prevent trees from growing. It was only in V9, in which two of these defectors actually were sent to the police. The two men were said to be the forefront saboteurs in their village, encouraging others to do the same. This incidence put an abrupt stop to the defecting in V9.

Rumours of police custody did not seem to scare defectors on the other side of the mountain. In villages 3, 4 and 5, cutting of trees continued. It was most extreme in village 5, where nobody ever stopped to cultivate and the forest was continuously kept down. In V2, V3 and V4, the trees grew to some extent and most people stopped cultivating, until the local MoP withdrew from politics in 2004, taking with him the threat of government sanctions and starting a new era of forest cutting at the mountain. GVL B did try to convince people in her group of not cutting trees, but she was not obeyed. She was only able to control a small forested area close to her own home in V2, guarded by her own presence. She hired guards to patrol the whole forest in group B, but as people knew who they were and when they were guarding, they kept illegal cutting activities to times without guarding. Nobody has been punished for still cultivating in the mountainside, because their bare garden is not considered as evidence that they are the ones who have damaged the trees. My interpretation of this low ability to punish defectors is that it pictures the low authority of group B leaders among their people. The few who were punished for destroying trees in group B were caught in the very act or for possession of blue gum trees in their homes. The penalty was a fine of 200 KW, considerably smaller than that in village 9, where two of the defectors got police custody and trial in court.

How did expected penalties affect the forest outcome? The arrest of the two men in V9 proved that the committee was able and willing to enforce its threats on defectors. It stated an example towards the rest of the mountainside farmers, who were scared off from resisting orders any more. This early display of power from the committee was a major contribution to the fact that the forest still exists in V9 today. The committee is still active and has the main responsibility for guarding against and punishing tree-thieves. Hence, their first heavy sanctioning still stands as an example of what could happen to people cutting trees and hence protects the forest from further damages. In the other villages, nobody took this role of enforcing harsh punishments, and defecting was never as risky.

### ***Who benefits from the timber?***

Village 1 is the village which has fulfilled the harvesting intentions from the project at most. All villagers from group A (from all eight villages) can ask GVL A for permission to cut some trees if they need poles for building a house. She gives permission to everybody, no matter how poor or rich, but only for a limited amount of trees, normally two or three, which is enough to build a small house.

In village 9, nobody has yet been given permissions to log trees. Hence, the mountainside farmers, who were already ill-mooded regarding the forest and loss of user rights to their land, feel sure that they will never see anything to the timber values. Distribution of timber from the forest would probably have increased legitimacy of the forest project, which might have strengthened general legitimacy of the village leadership and supported co-operative behaviour in future village projects.

One major reason of GVL B's low ability to prevent tree-cutting is the rumour that she is logging trees illegally herself. Hence, her legitimacy when trying to convince people to take care of the forest is limited. This man complains about it:

*"There is some kind of biasness regarding the trees towards the clan of GVL B. Some people can go and get 2-3 trees for free, but I would have to pay. It is not necessarily the needy people who get trees. The trees are supposed to be for the community, but the GVL is selling the trees like her own business."* (Man, group B)

I could also observe this process. GVL B's household used poles taken from the mountain forest for firewood most days. In such a small and open village, where people live everywhere, nobody can steal trees regularly without everybody else getting to know about it. Hence, her behaviour probably affects the behaviour of all people under her group, not only in her own village. People are not likely to listen to their chief as long as she does not follow the rules herself. This behaviour leads to acceptance for not obeying her orders. She has however been able to keep a few trees in her own village, probably because she lives very close to the forest and is able to catch thieves herself. In the other villages of group B, the mountainside is all bare.

The question is not only how timber was distributed in the end, but more which expectations mountainside farmers had about it in advance. According to their previous experiences, they might have had a clue about the general distribution of benefits in the village, and thus have some expectations of this also regarding the forest project. When they expect that the benefits will be captured by the village elite or stolen by thieves, leaving them as suckers in the game, their willingness to co-operate decreases because of two things: First, their utility of a forested mountainside is lower and hence their direct incentives for contributing and inducing others to contribute, weakens. Secondly, general respect for the leader and belief in the norm of co-operation decreases.

### ***Trust and leadership shapes the norm***

Durlauf and Fafchamps (2004) identify trust as a necessary condition for collective action, in addition to good leadership. People are bound to trust the contributions of others if they are to contribute in collective action problems themselves.

It does not seem to be differences in general trust levels between villages. The strength of the co-operation norm in V1 is not a result of a generally higher trust level between individuals, but rather a result of more trust in people's contributions to village level projects. These projects are similar in all villages, in which villagers are asked for example to mould bricks for a school building or to help build a local bridge.

In village 1, in contradiction to other villages, it seems like almost everybody contribute to public works organised by the leader, an indication of trust towards other villagers of co-operating. An important reason behind this trust is however the enforcement of their village leader. People who do not show up to public works are always dragged in afterwards by the village leader and forced to do their parts of the work, or even more. In the other villages, few contribute to public works when the

leaders order it, and those who do are mainly relatives of the leader. Non-relatives of the VL claim that they won't contribute to public works because they do not receive outside help when such are distributed. The VLs, on the other hand, claim that they do not give certain villagers fertilizer coupons or other kinds of help, because these people do not contribute to public works when they are asked. So, who started? What came first; the corrupt leader or the non-co-operating villagers? For this purpose I only state that there are often groupings within the villages, determined by relatives and close friends of the VL, the village elite, in one camp and non-relatives in the other. Members of the village elite both do the job and take the benefits. The difference to V1 was that everybody contributed to public works, no matter if they got such subsidies or not. Some complained about an unfair distribution, but it did not prevent them to do public works with the rest of the village. This fact is what I use as an indicator of a higher share of norm believers in village 1. The villagers seem to have experienced several successful community projects, in which nearly all inhabitants contributed. When people believe that everybody else will contribute, they are more willing to co-operate themselves. The risk of ending up as a sucker is low.

How has village 1 reached this high contribution equilibrium? Their strong leader plays an important role, as she is able to convince people that everybody else will contribute due to her authority. Is this really co-operation based on trust, when people are forced through the authority of the leader? It might be a different kind of trust, but the result is however the same. Nobody skips contributing to village projects in V1, because they trust that they will not end up as suckers. Everybody knows that there is a high share of norm believers in V1, which induces a high share of co-operators also in the forest project. This certainty of others' contribution is a mutual trust, although it is an enforced trust. Trust must develop from some kind of positive experiences, and whether these experiences are enforced from outside does not make a difference to the way they work. But notice that this trust only works on the specific issues on which it is enforced, which is contribution in common village projects. People only trust each other to co-operate in such specific projects, and it does not necessarily mean that they trust each other also in other regards.

## **Conclusion**

It is possible for rural communities to manage their common pool resources. In one of the villages analysed in this paper, successful collective action was due to initial endowments of leadership and trust in mutual contributions, which together induced a norm of co-operative behaviour on village level. When governments or NGOs want to introduce similar projects to rural communities, they might benefit from evaluating these variables in advance. The success of previous collective action projects on village level indicates co-operative abilities and increased probability of success also in the future. At the same time, communities with low levels of co-operation can build such abilities through positive experiences. I therefore argue that there is a role for community based development, as the focus on local management and responsibility can build trust and civic capacity by introducing and supporting community co-operative projects.

Another of the analysed villages reached the same successful outcome in the forest project, mainly because a forest committee was able to enforce heavy penalties on non-co-operators. Given the leaders and the level of social capital in community, the

presentation and implementation of such projects to the people who are directly affected by them, stand out as important. Correct information, a decision process including all the people affected and wide distribution of benefits increase the probability of a co-operative solution. Outside initiators are able to influence these factors, even if the project governance is left fully with the local community. In the forest project studied here, the governmental initiators did not intervene in any of management decisions regarding the project. Some suggestions and guidance on how to solve the conflicts could have been valuable. As MASAF contributed with the financing of the project, they could for example have suggested some sort of compensation for the mountainside farmers who lost their land. This might have brought a better outcome for all villages and decreased conflicts. Community based management can have good effects in terms of building social capital locally, but it might benefit from receiving some proper guidance from more experienced agents on project management.

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