Institutional Conflicts as Results of Institutional Design – Can They Be Avoided?

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Abstract

The prospect of designing social institutions, thereby manipulating behaviour, preferably in a pro-social way, is alluring to agents who in good intention seek to help in management of common pool resources. This paper looks at institutional design from a theoretical point of view while illustrating with empirical examples from two case-studies in the central region of Malawi. One is a small-scale irrigation system, the other a borehole providing clean drinking water. I argue that when designing new institutions one must consider the institutional set-up (e.g. power-structure, social customs and value-orientations) already present in any given locale, and that failing to do so may do more harm than good. Outcomes may range from failure to cooperate and breakdown of the social system to degradation, and in the worst case; collapse of the resource and even violent conflict. This is discouraging to people advocating a "blueprint" approach to the subject. Previous warnings about similar issues are numerous. Dolšak and Ostrom (2003) warn external donors wanting to fund and initiate common-property regimes about the dangers of new rules not corresponding to social customs, norms and value-orientations of those on whom they are imposed. Henrich and Smith (2004) notes that what cues westerners into cooperation will probably differ from what cues a Mapuche Indian. My goal is that this paper may provide useful insights into how one can avoid conflicts or "institutional clash" between newly designed institutions and local institutions.

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Introduction

Many collective action-problems facing humankind are found in the management of common pool resources (CPR's). This is true for rich and poor. The scale of issues to be dealt with range from managing small water-pools to reducing global carbon dioxide emissions. This implies understanding CPR's and their management is an extremely important, but complex task. CPR's wear a multitude of cloaks and are located in infinite number of locales. Thus the socio-physical environment of one CPR may not be found anywhere else on earth.

Given this complexity it should not come as a surprise that no consistent evidence to support any type of governance-regime being best suited for all types of CPR's exist (Dolšak and Ostrom 2003). It is with this backdrop that I embark on scrutinising the prospects of institutional design. Nemarundwe and Kozanayi (2003) claim most literature on CPR management over the last years has focused on getting the institutional setup *right*. In other words; fix the institutions - solve the CPR dilemmas. This, they argue, has justified piecemeal institutional engineering; a praxis where external agencies enter communities, set up committees and other governance structures with little concern for existing institutional arrangements.

This paper examines two CPR's located in Malawi's central region, Kasungu. One is a small scale irrigation scheme, the other a borehole. Thus they are not pure natural resources, but comprise elements of human construction. Hence their components and replenishment rates are vulnerable to lack of maintenance. Neither of the two performs well. The paper focuses on *institutional design* because both CPR's were introduced in local communities by external agents of development. I claim here that the agents in question had insufficient knowledge of the areas socio-institutional reality prior to introducing the CPR's. As a result the CPR' has suffered under *institutional conflicts* causing damage rather than development.

Institutions and institutional design

I will not spend much energy outlining my understanding of what institutions are. A few remarks are, however, in order. Put bluntly institutions are "*the rules of the game in society*" (North 1990, 3). Rules comprise a range of phenomena from explicit laws to cultural-cognitive codes of conduct deeply vested in human minds (See e.g. Scott 2001 for a review). To keep things simple my understanding of institutions is that they are rules, but rules must be understood as a broad category. Let me give an example from the social science I am most familiar with, sociology. Sociologists often refer to the family as a social institution. When doing this, they do not refer to specific families living around the corner. Rather, they refer to a set of *rules* and *norms* which shape the way people live *in families* in specific societies (Gregersen et al. 2004).

For CPR's institutions can be seen as bringing order to chaos. Since Hardin (1968) famously described the tragedy of the commons, decades of research show CPR's often avoid this fate (see e.g. Dietz et al. 2000 for a review). I share the perception of Nemarundwe and Kozanayi (2003) who say most literature credits positive results to institutions. CPR's nature creates *social dilemmas* for appropriators. Most notably; problems of overuse and free riding (see e.g. Ostrom 2005 or Kollock 1998) form

situations where individuals are forced to choose between short-term self-interest and long term interest of group, resource, (*and* oneself). If the problems are not overcome, tragedy is a likely outcome. When scholars credit institutions for escaping this, emphasis is on rules favouring sustainable use by making over-appropriation and free riding socially (and/or economically) difficult and costly.

If the argument is valid, designing CPR-institutions would be a valued skill for NGO's, governments, regional bodies of governance, and others interested in natural resource-management. Through crafting the *right* rules one could alter the course of history, ridding the world of problems like carbon dioxide emissions, water shortage, and hunger. At this point I am certain the reader sighs while thinking "...*naïve utopian!*". For while research on CPR's give hope to those intending to avoid tragedy; it also indicates no universal "best" institutional setup existing (Dolšak and Ostrom 2003). In other words researchers have not found rules that are easily applied to problems displaying similar characteristics in different corners of the world.

My answer to why no such universal formula has been discovered may seem depressing; *it does not exist!* This does not mean I refute the idea of institutional design altogether. What I argue against is the idea of universal rules applicable in all circumstances. Given consideration, this notion is not depressing; it lends itself to optimism. Think for a moment about very concrete science. Structural engineers, for example, have to take seriously the physical location when designing, say, a skyscraper. Why should social science be different?

A trait of structural engineering is certain principles followed regardless of where one constructs buildings. Precautions must be taken to avoid buildings being rocked by earthquakes, forces of weather, or crashing jumbo-jets. Geologically, climatically and politically the situation in different corners of the world vary greatly. Thus engineers designing buildings for New York face other challenges than those designing buildings in the Andes Mountains. The principles of engineering, however, are universal. Do similar principles exist for institutions? Elinor Ostrom's work (1990; 2005) suggests it might. For years she has studied CPR's with special attention to institutions. She has found that in long-enduring CPR's there appears to be underlying principles guiding governance. These principles are not *rules*. Rather they are traits found *in* rules for CPR's. In the following I look generally at how various scholars see the prospects of institutional design and briefly explore Ostrom's principles[2]. I then look at two CPR's in the central region of Malawi, showing how institutional design has caused conflict in local communities. I actively apply the theory outlined. For example both CPR's violate *many* of Ostrom's design principles (1990; 2005). Thus the paper strengthens the assumptions of the principles.

A simple understanding of institutional design is easily established. If institutions are rules, then institutional design is the deliberate creation of these[3]. Why would we embark this task? *First* institutionalization implies formation of stable, recurring, patterns of behaviour (Goodin 1996). In general stability and predictability is why institutions are valued (North 1990). In relation to CPR's this is clear. If appropriators

[2] Note that my review of these aspects will only scrape the surface of the available literature. For more exhaustive accounts I refer you to e.g. Ostrom 1990; Goodin 1996; Scott 2001; and Ostrom 2005)

[3] I am aware that this account is too simplistic to be realistic. My definition of institutional design will thus be problematized shortly.

of CPR's display "*stable, recurring patterns of behaviour*" favouring sustainable resource-use it is without consideration preferred to the potential anarchy of individuals harvesting what they can for personal gain. Goodin say:

> "The answer lies(...)in the value that we all derive from having our activities constrained(...) Being able to embody certain fundamental agreements(...)allows us to make commitments to one another that are credible" (Goodin 1996, 23).

Goodin (1996) goes on to explain how there are three models explaining social change; accident, evolution, and *intention*. Institutional design is an aspect of the latter model; *design* implies intentionality. Goodin emphasize, however, that the institutional designer *as such* is a mythical figure, nowhere to be found in reality. He agrees intention is behind many instances of institutional change, but say the institutional outcome differ from the intention of designers:

> "...there is no single design or designer. There are just lots of localized attempts at partial designs cutting across one another. Thus, even within the realm of our intentional interventions, what we should be aiming at is not the design of institutions directly. Rather, we should be aiming at designing schemes for designing institutions – schemes which will pay due regard to the multiplicity of designers and to the inevitably cross-cutting intentional interventions in the design process" (Goodin 1996, 28).

Here I recognize this paper's central warning. Believing in creation of institutional straightjackets fitting *any* locale is naïve. While Goodin (1996) stress how intentional institutional interventions cross-cut, others warn institutional designers of institutional designs undoubtedly cross-cutting existing institutions, regardless of their origin. When Dolšak and Ostrom (2003) warn external donors funding and initiating CPR's about the dangers of new rules not corresponding to social customs, norms and value-orientations of those on whom they are imposed, this is the centre of their argumentation. Any given locale has institutions or institutionalised behaviour. In many cases this is not visible to the naked eye. Douglas (1986) show how institutions can be so deeply vested in human minds that they are not seen as traits of sociality, but rather as nature. In light of this it should come as no surprise when Henrich and Smith (2004) note how westerners are cued to cooperate by other means than Mapuche Indians. Because people in London live in institutional realities different from Mapuche Indians they would act differently if suddenly subject to the same set of rules. Klijn and Koppenjan (2006) note institutional blueprints are always introduced in specific social contexts. This affects the way *actual* rules-in-use look:

> "…formal rules are not identical to the institutional rules-in-use(...) Formal decisions may, in the short term, break down institutional practices, liquidate organizations, establish new ones, adjust resources, change common outlooks and so forth. But that does not mean that a new institutional practice will immediately be established. Even if a fairly comprehensive institutional blueprint is introduced, in practice these new institutional rules will have to be interpreted, accepted, applied and internalized." (Klijn and Koppenjan 2006, 156)

Meahger (2004) relates this to legitimacy. Rules, he say, needs legitimacy in the context of introduction. They must be legitimate in both *origin* and *application*. This means consistency with some set of prevalent social norms about governance, process application, or honesty is needed. Institutional designers are, in his eyes, required to look at and understand the local sub-text of laws and existing institutions prior to design-efforts.

The literature has many empirical examples showing how cross-cutting of designed institutions and local institutions cause problems. Giusta (2003) say the institutional design of a micro financing scheme in Mexico is ill-suited to local conditions, thus performing sub-optimally. Mandondo (1997) show how donors demand "hands on" control of operations in projects because traditional customs, values, and norms are seen as irrational. Based on his research on forest management he recommends the opposite. Evans (2004) claim the dominant means of building institutions is imposing uniform institutional blueprints on the global south. This, he adds, has failed time after time, limiting local possibility of developing working institutions.

The picture painted may seem depressing, but is really not. If common sense is applied, local reality as being important to how institutional schemes introduced in communities work, makes sense. The warnings are uniform in saying external agents *must* be aware of the way things look "on the ground" prior to their endeavours. Further they go far in saying agents must understand how existing setup can, and *will*, affect frameworks attempted designed. This means outcomes will not look as neat as they did on the headquarter drawing board.

Similar insights about the effects of existing institutions on various processes are reached in other fields. For example Hargadon and Douglas (2001) say institutional reality in New York prior to Thomas Edison's introduction of a solution for electrical light favoured his system over his competitors. His solution, they claim, was similar to the already existing arrangements. Even though technology changed, the *rules of the game* did not. Three factors are essential. *First* the new system included many familiarities appreciated by customers. *Second* it removed dangers of the old system. *Third* it provided new benefits and was highly adaptable. The authors hint at his system not being the most *effective* or *optimal* alternative, but its characteristics allow the design to be described as *robust*.

The example show robust technology-design used as means to introduce new elements in an institutional environment. Can the idea of robust design be applied to institutional design? Anderies, Janssen and Ostrom (2004) suggest it is a fruitful approach when dealing with social-ecological system's like CPR's. Robustness, they say, emphasizes cost-benefit trade-offs associated with designed systems. This means robust systems in many cases will not perform as efficiently with respect to chosen set of criteria as non-robust counterparts. The good news is its performance will not drop as sharply when confronted with external disturbance or internal stress. As we have seen, however, institutional reality is never fully designed; it comprises elements coming to existence through accident or evolution (Goodin 1996). Anderies et al. (2004) add social-ecological systems and CPR's include many physical elements that are *not* intentionally designed. Another aspect separating institutional design from the design of, say, an aircraft is that the latter can be elaborately tested. Wind-tunnels simulate virtually any condition aircrafts encounter, allowing designers to determine if robustness is achieved before the plane gets air-time. For institutions no such tests exist, and only time can reveal robustness.

None the less Anderies et al. (2004) embark on scrutinising the possibility of design with robustness in mind. Robustness, if the thoughts above are valid, implies *endurance*. In light of this the authors' holds forward the already mentioned design principles for *long-enduring* CPR institutions as outlined by Ostrom (1990). They say

robust systems are characterised as incorporating a large number of these. The principles are not specific rules, no institutional blueprint, but underlying principles. Their application cannot be used by designers as excuses for not properly grasping local social reality.

BOX 1: Principles of design for long-enduring institutions governing CPR's

1. Clearly Defined Boundaries
The boundaries of the resource system and individuals or households with rights to appropriate are clearly defined.

2. Proportional Equivalence between Benefits and Costs
Rules specifying the amount of resource products that a user is allocated are related to local conditions and to rules requiring labor, materials, and/or money inputs.

3. Collective-Choice Arrangements
Most individuals affected by harvesting and protection rules are included in the group who can modify these rules.

4. Monitoring
Monitors, who actively audit conditions and user behavior, are at least partially accountable to the users or are users themselves.

5. Graduated Sanctions
Users who violate rules-in-use are likely to receive graduated sanctions (depending on the seriousness and context of the offense) from other users, from officials accountable to these users, or from both.

6. Conflict-Resolution Mechanisms
Users and their officials have rapid access to low-cost, local arenas to resolve conflict among users or between users and officials.

7. Minimal Recognition of Rights to Organize
The rights of users to devise their own institutions are not challenged by external governmental authorities, and users have long-term tenure rights to the resource.

For resources that are parts of larger systems:

8. Nested Enterprises
Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Based on Ostrom (1990; 2005)

Box 1 displays Ostrom's (1990; 2005) principles of design for long-enduring CPR institutions. This provides a benchmark we can utilize along with other thoughts on institutional design in an effort to assess the work of institutional designers in the Malawian case studies.

Institutional design and conflict in the central region of rural Malawi

So far this has been a theoretical endeavour. We have seen how different theorists see possibilities of institutional design. My impression is scholars are mild optimists. They do not reject the idea of external agents as successful institutional designers. Be that as it may, they are far from raving utopians, constantly reminding us of difficulties involved. In the following focus shifts. Two CPR's are examined; a small-scale irrigation-system, and a borehole providing clean drinking water.

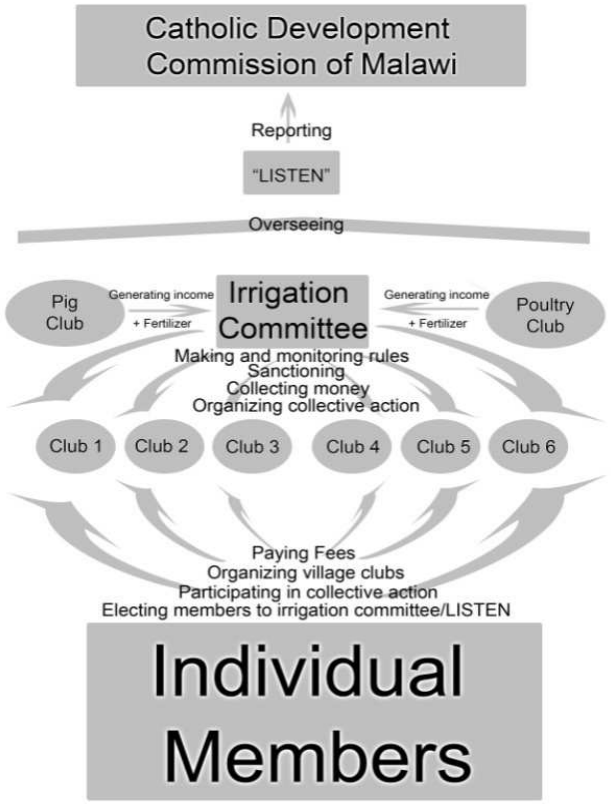
The cases have been explored at length elsewhere (Bjørnstad 2008; Skjølsvold 2008), and focus here is strictly how external agents have acted as institutional designers, how institutional design have worked once introduced and effects this seems to have had on CPR-outcomes. Particular attention is given to instances where design cross-cut and contradict local institutional statements[4].

[4] The term *institutional statement* refers to the specific rule-in-use which comes to existence through the institutional reality of an action-situation (Ostrom 2005). In the case of an explicit law the institutional statement would be identical to that; e.g. *all auto motorists must drive within the speed limits, or else they will be punished according to the law*. A more intangible example from beyond the books of law could be: *Everyone working at the sales office must wear a neck-tie, or else customers will deem the company unserious.*

Case 1: An institutional *blueprint* for irrigation management

The first institutional designers in what would become a detailed scheme for irrigation management were the Catholic Development Commission of Malawi (CADECOM). The organisation knew a few individuals had been successful in deeds of irrigation farming. They contacted some powerful figures in the local community, proposing to initiate a project of irrigation for a larger *group*. The initiative was received positively and the plan was carried out. CADECOM applies a philosophy they call *LISTEN* to their design of organisational setup and institutions. The *LISTEN*-system was utilized in 12 similar irrigation-schemes in the region. Thus I find use of the term *institutional blueprint* justifiable. Let us begin our scrutiny of their endeavour.

BOX 2: Institutional and organisational blueprint for irrigation management



The system would include users from different villages. Members from individual villages were asked to form separate clubs. Seven clubs were formed. Overarching the clubs was a main committee of irrigation. This was a central organ, vesting the powers of the group. This committee was responsible for crafting and monitoring specific rules, sanctioning non-compliance, collecting monetary fees, and organizing and supervising collective action. 10 appropriators were elected for the positions in the committee under supervision of officials from CADECOM. The committee would not, however, be un-supervised. Above it was a second committee; the *LISTEN*-committee. Its mandate was rather unclear, but a main task was auditing activities in the rest of the project. If detecting any activities violating the assumptions of the set-up it could report to CADECOM. If conflicts arose and the irrigation-committee could not solve the problem, the *LISTEN*-committee would function as sort of a negotiator, with a mandate to "resolve" the situation. The means available to achieve this was, however, very unclear. There were some demands on the group for *whom* they could elect to fill the positions. Most importantly CADECOM wanted to avoid people tied to the system of chieftaincy gaining influence over the scheme. Chiefs and chiefs' family were banned from positions in committees. The reason is their position in Malawian society, and the difficulties involved in punishing them should foul play be discovered. Ostrom (2005) is aware of this dynamic and warns about giving collective–choice powers to local elites. This, she claims, will often lead to policies primarily benefitting the elites, rather than the group.

CADECOM did not provide funding for the scheme. They knew, however, that the group needed income to sustain the system. They provided a fairly large quantity of pigs and chicken. Two additional clubs were started; one for pig-farming, one for chicken-farming. The goal was farming would provide a stable source of income and fertilizer. Box 2 displays in a stylized way how the LISTEN-setup was meant to look.

Institutional blueprint meets local reality

On paper the setup parallels many of Ostrom's (1990; 2005) design principles for long-enduring (or robust) CPR-institutions. Allow me to clarify. The boundaries of the system were clear; non-members could not benefit from member-efforts. There would be proportional equivalence between benefits and costs; all members contribute the same, all benefit the same. Collective choice arrangements were in appropriators' hands with responsibility to the rest of the group in rule-creation and modification. Monitors were also appropriators. The specific rules were indeed formulated to graduate sanctions. Access to conflict resolution-mechanism was secured through the irrigation-committee, the *LISTEN*-committee or CADECOM. Minimal rights to organisation were present.

In cross-cutting existing institutional reality, however, the *actual* rules-in-use became different. The first aspect of local institutional reality to underpin the framework was the division in village-clubs. Formally there are no differences between the villages. Socially and geographically there are, however, real differences. One cluster of villages is located near the river from which irrigation water is extracted, another further away. The cluster close to the river was under the jurisdiction of the same Group Village Headman, while the cluster further away was under the jurisdiction of another. This division had several consequences.

First, the system did not own pumps or other equipment for extracting water from the river. Some individuals in the villages close to the river did, however, own pumps. One of these was the Group Village Headman; the others were close to him socially and geographically. The pumps were made available to the appropriators in the scheme. There were, however, no rules regulating distribution of access to the pumps. Thus a new rental and labour market was established. People rented pumps and manpower from the people in possession of it. Those from villages close to the river, however, were allowed to borrow pumps free of charge. Similarly, they had few problems recruiting people who knew how to operate them without having to pay. Thus two groups of appropriators existed from the beginning; those paying extra for services and those benefitting for free. Ostrom's principle of proportional equivalence between benefits and cost were thus violated early.

The division of appropriators geographically close to the river and socially close to the group village headman, and the *other villages,* proved a potent force in disrupting plans of the institutional designers. After a period of stability allegations of corruption surfaced against the irrigation-committee. It is not clear whether the allegations were true, but the committee stepped down. A new committee was elected, using the procedures as described earlier. So far, so good. For the position of committee-treasurer, a very old lady was elected. Shortly thereafter she fell ill, and it became clear she would not be able to perform her duties. At this point the rules were not clear. How should she be replaced? In lack of clear instructions the areas power structure as they were *prior* to the scheme became apparent. The wife of the Group

Village Headman of the village-cluster close to the river was appointed. This was a clear violation of the instructions given by CADECOM and the first real test of how the institutional setup functioned. Ideally the *LISTEN*-committee would take action; either replacing the treasurer or reporting the incident. No action was taken. Taking the entire community by surprise, it turned out the same woman had somehow managed to acquire a seat also in the *LISTEN*-committee. The circumstances around these events are unclear, but it could indicate the *LISTEN*-committee in fact existing only on paper.

Following these events was a stream of rumours. These were not rumours about how the new treasurer came to power; rather they were rumours about the other committee-members. Supposedly they were alcoholics, lazy, heathens, and unfit for their jobs. One-by-one they withdrew without being replaced, the committee shrank. In a short period of time the wife of the group village headman and her closest friend and neighbour had managed to seize control of the system. The powers associated with chieftaincy were transferred to the irrigation system, magnifying the cleavage between appropriators close to these people and the *others*. Ostrom's principles about collective choice arrangements and monitoring (1990; 2005) were by now long buried, being in the hands of two individuals. Many people perceived these as mere marionettes controlled by the Group Village Headman. Regardless of who vested the *real* power it is safe to say the people in-charge was part of local elite. Remembering Ostrom's warning (2005) of this often leading to policies benefitting elites rather than the group gives a hint at what would follow.

The system was still operative. Appropriators from *wrong* villages became more irritated and felt powerless, unable to affect their own situation in the system. At the end of the season it was clear, however, that most people had benefitted greatly from the scheme. Many explained how their access to food was boosted, despite many of the unfair arrangements. At the end of the season the scheme visited by the American organisation behind CADECOM. They were pleased with the benefits created by the project. They did, however, have one objection. The location of the pig farm was *too nice*, and the Americans advised locals to move the activity. It was claimed that in case of other donors arriving, seeing a nice pig farm would have them conclude standards of living were already high, discouraging them to invest in the area. Thus it was decided the pigs should be moved. Not long thereafter, all 24 pigs in the scheme died of African swine fever (CADECOM 2006).

Around then the Malawian government gained an interest in the scheme. Irrigation was a priority, and they wanted to see if they could somehow support the project. Representatives were sent. They spoke directly with the current leadership and the Group Village Headman of the river-village cluster. The government decided to provide the group with 500 000 Malawi Kwacha (MK), and an engine driven pump[5].
The community responded positively. People from all villages welcomed the government-effort, and as the new season (2006) was starting the project had a record-high 80 households involved. The new funds and the large quantity of money provided obvious challenges. In terms of institutional design and crafting rules, the

[5] This amount of money is a massive contribution if compared to the income-levels of the area. In an unrelated questionnaire 52 respondents answered how long it would take them to earn 1000 MK. On average the answer was 15,6 days. Although there are obvious flaws with both the question and the answers, it clearly indicates the magnitude of the government-contribution.

government did little. They demanded the money kept in a bank account. Further they demanded withdrawals of cash to be made with at least three members of the governing body present. On trips to the bank travellers were allowed an allowance to cover expenses for food and travel. Third the government trained two people in repairs and maintenance of the engine. These were known in the area as *engine boys*. The *engine boys* were not only needed for maintenance, but on a daily basis their task was to start the engine. This was the total extent of the government-contribution; a massive amount of cash, an engine, and some general advice.

CADECOM was not happy with the situation. In conversations officials explained this was a general pattern seen often. The government inflated existing systems with vast amounts of money and advanced equipment. If successful, it claimed responsibility. Cases of failure were blamed on forces beyond their control. Thus CADECOM decided to leave the system. Since this they were not involved in irrigation farming, but focused on remaining livestock; the chickens. From this point there was no relation between the chicken-club and the irrigation, leaving the irrigators without income, except member-contributions.

Up until the government arrived, all members paid fees to participate. One fee was paid when joining, another on a monthly basis. Given the problems of provision this seems wise. Maintenance is demanding in both labour and funds. With the arrival of government-money the will to pay decreased substantially. Given the projects history of a committee stepping down due to (alleged) corruption it was claimed that if the current leaders were allowed to control government funds *and* membership fees, it would guarantee corrupt praxis also by this leadership. After substantial pressure it agreed to strip the project of membership-payments, causing a total halt of income.

In light of the irrigation systems nature this seems to have been a bad call. The group now had a large pool of money and better equipment than before, but no prospects for income. The advanced equipment was vulnerable to lack of maintenance, and operating the system would be more costly than when treadle pumps were the tool of irrigation. The systems new assets intensified the problems of provision, while efforts to resolve them were removed.

As the season started appropriators were optimistic. The group from the *wrong* villages were, however, being discriminated against more frequently. This first became visible when the project-area was to be divided in individual plots[6]. Ostrom and Gardner (1993) note how irrigation CPR's have a particular challenge; *the problem of asymmetry*. This refers to irrigators automatically being divided in different categories, *head enders* and *tail enders.* Head enders have plots close to the water-source, at the "top" of the canal, while tail enders are at the bottom. The two groups have very different positions. Water has to flow past head ender fields in order for anyone else to irrigate. A selfish head ender might take more water than tail enders, ignoring the scarcity this could create for tail end appropriators. If, however,

[6] Participants in this project did not own the land they farmed; they were allowed to borrow it for one season at the time, for the purpose of irrigation farming only. The plots were divided after the group had collectively cleared and prepared the land. This is an activity which itself involves many of the difficulties associated with CPR governance, like the problem of free riding. There are indications that some free riding did occur when preparing land for this season of farming, but no incidents were seen as serious enough to have the non-complier punished in any substantial way.

people with plots at the lower end receive less water than those at the top, we can suspect they will want to contribute less in money and labour for maintenance. In this scheme people from villages further away from the river were systematically found at the tail end of the system. Many recognized the problems this posed and attributed the skew in land distribution to the leadership.

Another point strengthening division between the two groups of appropriators was the *engine boys* trained. The government did not choose people to be trained for the task; this was done by the leaders. Two men from the *right* side of the social cleavage were appointed. Respondents from the wrong villages claimed the engine boys were reluctant to do work on the engine if problem occurred when they were irrigating. Many claimed they demanded small bribes, while no reports of such praxis from respondents on the *right side* were found. One engine boy was needed to start the engine. If he decided not to come in the morning, no irrigation would happen.

There were several reports about this happening and on at least one occasion it caused a major quarrel that needed resolution by the Traditional Authority. One morning when villages of the wrong kind were to irrigate no engine boy showed up. No irrigation was possible, causing severe frustration. The following day, when a group of appropriators from the right side were to irrigate they went to the site and demanded their rightful share of water applied to their plots. They were met with refusal and the following quarrel led to a halt in irrigation for days. At this point many were fed up. They were, however, able to resume irrigation after having the dispute settled by the Traditional Authority.

The example illustrates several things. *First* it clearly show how Ostrom's second principle for long enduring CPR institutions; proportional equivalence between benefits and costs is continually violated in this system. Some people benefit more than others, without their participation being more costly. Second it shows that the current collective-choice arrangements benefit some appropriators over others. Third it shows how the system at its current state had virtually no system for monitoring and auditing, and fourth it displays how there was no rapid, low-cost access to conflict resolution mechanisms, leading to a stand-still in irrigation for days.

This was the first example of the schemes social problems leading to a halt in irrigation. The stop did not last long enough to do substantial damage to the crops and for two or three weeks irrigation proceeded normally. We now reach, however, the final chapter in the saga of the irrigation system. One day the engine stopped; it was out of fuel. Instead of buying more the two leaders announced having run out of money. People, especially on the *wrong* side of the cleavage were furious. They demanded to see records, receipt-books and transcripts from the bank. Thus the leaders were forced to make another admission; the funds were long removed from the banking-system, now managed from their personal households. This, they explained, was a necessary step due to problems encountered on visits to the bank[7].

[7] This might be an indicator of problems associated with rights to organise, as outlined in Ostrom's (2005) seventh design principle. The group originally had an account in the bank, but the use of this was a painstaking effort. Sometimes an entire day could be spent traveling to- and from the bank, without this resulting in a withdrawal, for example due to failure in identifying themselves. Thus the problems of using the banking-system are non-trivial. The rules from the government were clear, however; the money was to be kept in an account. This is an example of how different institutional

Having no fuel, no money and no income there was no choice but to shut down the engine. Crops withered and many reported great losses. Two weeks later parts of the crops were saved as the region experienced rain extraordinarily early. After harvesting the remains, two villages immediately pulled out of the project and many individuals followed their example. It is difficult to say whether the leaders had embezzled funds or if the government contribution was not substantial enough to finance one season of farming. Most respondents, however, both from the *right* and *wrong* villages were in no doubt that foul play had taken place.

The following season an attempt was made by the same leadership to resurrect the scheme. Having no money, however, they were reliant on peoples will to make monetary contributions. This will was minimal, and the number of participants was reduced from around 80 to between 10 and 20, most or all being from the *right* villages. Whether or not the group succeeded at their attempt is not known, further studies would be of significant interest.

Case 2: Managing drinking water – a borehole

The second case is a borehole; a source of drinking water providing clean water for at least two villages. Again, the CPR combines a humanly crafted physical structure with a natural resource; water. The construction of the borehole was entirely funded by an external agent – the Malawian government through the Malawi Social Action Fund (MASAF).

As *institutional designers* their efforts were far less active than the case was in the irrigation scheme. Let us examine their endeavour. Their first priority was establishing a borehole committee. This committee was to consist of 10 appropriators from the local community, and a democratic election was held. Any appropriator could participate in the election, but the government had decided the committee should consist of more woman than men. Further they said the committee was always to be elected by, and consisting of appropriators. In addition they explained they would not, under any circumstances return with additional funds. Thus the committee had to solve the problems of how to generate an income to deal with future problems of maintenance. The government suggested collecting a monthly fee from all appropriators, and the committee implemented the rule.

Box 3 displays the design as it was intended to look. As we see it is a far less complex scheme than the irrigation system. That, however, serves as no guarantee for the eventual rules-in-use and the *final* institutional outcome looking like the institutional designers intended. Comparing the setup with Ostrom's (1990; 2005) design principles we observe that also in this case most principles are followed in *design*. There were clearly defined boundaries of who could use the resource; in principle anyone paying the fee could appropriate, but the geography and physical features of the area naturally limited the number of appropriators. There was proportional equivalence between benefits and costs; all was to pay the same amount of money and contribute the same in terms of labour in exchange for access to water. The collective choice arrangements were consistent with Ostrom's advice,

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statements point in different directions. In the end traditional statements vesting power in the family of a group village headman prevails. Since it is very difficult to punish these individuals, they take minimal risks in violating the rules, other than the risk of being negatively conceived in the community.

appropriators were responsible. The same applies for monitoring. The sanctions were intended to be graduated.

BOX 3: Institutional setup for borehole governance as designed by the Malawi Social Action Fund

Government scheme meets local reality

Again events would take institutions shifting in unexpected ways, and again I argue ignorance on behalf of the designer is the main cause. For us to understand the developments of the borehole we need to take a short step back in history and look at the social context of the area where it is located.

First we need to grasp a difference between two groups of people; a division drawn up mainly in people's production-, and economic activity. This is the line drawn between people involved in economic activity labelled *trading*, and those not participating in the activity. Close to the village of the borehole there is a *trading centre*. This is seen as *developed* in the sense that it is bursting of economic activity. Many make a living there by selling crops, goods, or other items obtained through various means.

Many indulging in trade do not originate in the area. Some come from the south, others from the north[8]. This is, as we shall see later of some importance. At this point, however, I only want to note that there is, in the minds of people a distinct division between people who are "*traders*" and people who are "*true villagers*"[9]. The latter do not, at least to the same extent as the former participate in the activity, but survive on what they produce for themselves. Several respondents living in the *true village* were, however, involved in the business-community. It is therefore, without further explicit investigation, hard to say if there is a qualitative difference in how the groups sustain themselves. The division, however, regardless of material substance create real differences in behaviour and beliefs about behaviour of others[10].

One interpretation is that it has to do with peoples definition and construction of realities and "lifestyles"; either as *traditional* or as *modern*. Some see the western, "developed" way of business and economics as highly desirable; they want to be seen as progressive, while others want a traditional village-lifestyle. One respondent who had moved from a *true village* to an "urban" residential area expressed this explicitly when explaining why he moved:

[8] Mtika (2007) notes how circular labour migration for a long time has been a major social force, shaping contemporary Malawian society.

[9] The word "trader" was used by "villagers" as a name for those who made a living through commercial trading. It was, however, a negatively charged word. Many reported not trusting traders. People involved in the activity preferred to be called "businessmen".

[10] This reminds us of the legendary effect described by Thomas and Thomas (1928) later to be known as the Thomas theorem: "*If men define situations as real they are real in their consequences*" (Thomas and Thomas 1928, 572).

> "The village life is a tough life, you know? You struggle to survive and there is very little you can do to improve your situation. I did not associate with that life anymore, so I moved here and built this place. You can't be *modern* in the village" (Trader respondent)

In this area the dichotomy of *traders* and *true villagers* were not only explicitly present in the way individuals constructed their own identity. It was also present in the way entire villages defined themselves. Thus there were *trader villages* and *true villages*. The trader villages were under the jurisdiction of a different group village headman than the other villages; a group village headman nicknamed "*the mayor"*.

The borehole was constructed in an area consisting of two villages. One village was a *true village*, the other a *trader village*. The true village, was not, however, formally recognised by the traditional authority of the area as such. Although I do not know this, I suspect the people implementing the system were not aware of this. One indicator is found in the location chosen for the borehole. This was a private corn-field of the chief in the *true village*. Not being formally recognised as such at the time, I suspect however, that his power was not seen by government decision-makers.

A few years after the construction of the borehole, the true village managed to become recognised by the traditional authority. This recognition holds great prestige and gives substantial power to the chief. One of the new chief's first orders of business was attempting to gain control of the borehole. He immediately demanded the current committee to step down; he did not want traders to interfere with his *internal affairs*. A conflict arose between the two fractions, further underlining and confirming the beliefs people had formed about the nature of *traders* and *villagers*. In this dispute there were even reports of violence. After some time of quarrelling the case was brought before the traditional authority and his court. He ruled in favour of the *true village*. The committee stepped down and what followed was a complete dismantling of the established organisation. The chief appointed members of his own family to serve as leadership, and assumed several responsibilities himself.

As results of the events the *trader community* now say they are systematically discriminated as appropriators. They must pay more money than *true villagers* to use the water for economic activities like brick-moulding, and they claim to be more frequently punished for non-compliance than *true villagers*. At the same time there are allegations about corrupt praxis by the current leadership. Some aspects of this were admitted by the leaders, for example the treasurer reported using the funds as sort of a bank, giving small loans to friends and relatives. There were also large discrepancies in written accounts about how much money the leadership collected each month. Respondents, especially from the *trader village* complained about no information being available about how money was spent. The borehole displayed clear signs of damage. The concrete floor was cracked and parts were coming loose. Many respondents questioned why the borehole was in a poor state, speculating on leaders being broke, unable to purchase labour and parts needed for maintenance.

BOX 4: Institutional setup for borehole governance today

Again we see an example of severe discrepancies between the way rules, organisations and institutions are designed and the way they end up looking. The institutional reality "on the ground" significantly influences final outcome. In this case there are two distinct groups of appropriators, groups who by default *play by different rules*. These differences do not appear to have been part of the calculations made by MASAF. So far the resource has yet to collapse, and continues providing clean water to both *traders* and *true villagers*. What will happen in the event of a complete breakdown of the borehole will be pure speculation, but respondents reported not being willing to contribute extra should it become clear that the leaders have no cash. Box 4 displays the borehole governance-structure as it looks today.

This setup violates most, or all of Ostrom's (1990; 2005) design principles for long-enduring CPR's. The boundaries are relatively clear, but there are indications of substantial free riding, illustrating the difficulties of exclusion in CPR's. There is not proportional equivalence between benefits and costs; *traders* often pay more for the same service. Collective choice-arrangements and monitoring is in the hands of a handful, powerful people. Finally there are no conflict resolution-mechanisms other than the group in-charge.

From theory to praxis: Bridging the gap

The crude and sketch-like examples of an irrigation-system and a borehole in central Malawi illustrate several things. First it shows how local institutional realities are not necessarily susceptible for elaborate schemes drawn up by outsiders. In the irrigation project a system so extensive was crafted that almost no member was not in a committee, be that in village-clubs, the irrigation-committee, the *LISTEN*-committee, the chicken-club, or the pig-club. On paper the scheme considers many challenges in CPR-governance, and Ostrom's principles (1990; 2005) are largely followed. The rules set up to guide interaction and the checks and balances between organisational units did not, however, work as intended. When confronted with existing institutional reality like power vested in chieftaincy the new system crumbled. Social and geographical boundaries materialised in a new setting, giving privileges to some while other became underdogs. In the long run combinations of local institutions and newly crafted rules proved unsustainable, manifesting Goodin's (1996) description of institutional designers as mythical figures. The *LISTEN*-philosophy is utilised in many Malawian locales. Whether or not it is more successful elsewhere, I do not know, but based on experiences in this system there are grounds for warnings. Similarly there are reasons to be critical of the government's approach, inflating the scheme with cash at a time when the social system was collapsing.

Given Malawi's close encounter with famine it is clear that increased food-security should be a prime target for both government and others involved in donor and development-activity[11]. Giving farmers the opportunity to irrigate is one strategy for alleviating hunger. In light of this it is just as important to understand why projects fail, as it is to explain the success of others.

The borehole case tells a similar story. Institutional designers did not consider social boundaries whereby people on different sides play by different rules. The result is extensive conflict and violent incidents. In the end *local rules of the game* suppress those of external agents. Whether or not it is sustainable remains to be seen.

What could have been done differently? I cannot be very specific in advice, but hint at some efforts external agents can improve to more likely achieve success. First it appears external agents here underestimated the social complexity of the systems they were creating, directly stepping in the trap outlined by Nemarundwe and Kozanayi (2003), setting up committees and other governing bodies with little consideration for existing social reality. In light of chiefs and their families' power a total and abrupt break with their influence was attempted. It was perhaps naïve to think that one could easily set aside a force like chieftaincy with the stroke of a pencil. Similarly it is my belief that the system may have functioned better had the institutional designer anticipated the problems that might arise as a result of different appropriator's position in relation to the areas existing power-structure. I do not know what the NGO knew about the different villages prior to their efforts, but it does not appear far-fetched to claim they could have known more. If they did, the scheme attempted implemented could be fitted and adjusted according to local conditions. For example it appears as if it could have been wise to include the Group village headman of the village-cluster further away from the river closer in the process of the irrigation scheme.

My comments on this matter are, of course, of a speculative character. We have seen, however, that robustness in design often implies bringing elements from the past system to the new system. In this case, the design-effort included *talking* to parts of the old power-structure, while trying to keep it out of the new system. The power-structure of around half of the appropriators, was ignored. Not realising that these choices would affect the rules-in-use and the way the scheme would finally look can probably best be viewed as a result of insufficient knowledge.

Thus we circularly reach what I earlier explained would the central claim of this paper. The external agents involved in institutional design had insufficient knowledge of reality as it existed prior to their arrival and this caused conflict between institutional statements pointing in different directions. One does not craft institutions in social vacuums, and there will *always* be a considerable degree of cross-cutting; both with existing *formal* rules of the game, and informal norms, value-orientations and codes of conduct. Increased levels of knowledge about how these aspects appear before designs are initiated seem to be the best hope for *deliberately* strengthening robustness of design. In light of the above account I have formulated four explicit points that I suspect may be fruitful for donors, aid-agencies and others

[11] In 2002 the country experienced its worst case of famine since 1949 (Deveroux 2002).

involved in crafting of CPR-management regimes. Again, I warn the reader of the speculative nature of these points.

- When planning CPR-regimes or in other endeavours of institutional design, familiarise yourself with local norms, rules, value-orientations and power-structures. Knowing the socio-physical reality is vital!
- If possible; find activities in the local community which structurally resemble what you attempt to achieve through institutional design. If these activities are successful, try to determine which mechanisms make them work. Similarly assess why they fail. Use acquired knowledge actively in institutional design.
- Avoid "blueprint solutions", allow for flexibility, adaptability learning. Consult the literature; learn from past successes and failures.
- In rural settings long-term storage of resources in general and money in particular is a non-trivial problem. Developing savings-institutions that will be trusted by all appropriators should be a focal-point for researchers and developers alike.

The message of this paper has been one of little controversy, but one that none the less appears important and not universally accepted amongst those involved in institutional design. It is my hope that in a small way it contributes to increased understanding of the potential problems involved in blindly applying institutional design without proper knowledge of existing social conditions.

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