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Strategies of the Poorest in Local Water Conflict and Cooperation – Evidence from Vietnam, Bolivia and Zambia

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ABSTRACT: Media stories often speak of a future dominated by large-scale water wars. Rather less attention has been paid to the way water conflicts play out at local levels and form part of people's everyday lives. Based on case study studies from Vietnam, Bolivia and Zambia, this paper examines the strategies of poor households in local water conflicts. It is shown how such households may not only engage actively in collaborative water management but may also apply risk aversion strategies when faced with powerful adversaries in conflict situations. It is further shown how dependency relations between poor and wealthy households can reduce the scope of action for the poor in water conflicts. As a result, poor households can be forced to abstain from defending their water resources in order to maintain socio-economic and political ties with the very same households that oppose them in water conflicts. The paper concludes by briefly discussing how the poorest can be supported in local water conflicts. This includes ensuring that alternative spaces for expressing grievances exist and are accessible; facilitating that water sharing agreements and rights are clearly stipulated and monitored; and working beyond water governance to reduce the socio-economic dependency-relations of poor households.

KEYWORDS: Water conflict, cooperation, poverty, actor strategies, dependency

INTRODUCTION

As the discourses and realities of climate change unfold, the implications of increasing natural resource scarcity for human coexistence have crept higher on the international agenda. Frequently, this has led to media stories of an apocalyptic future dominated by international 'water wars'. However, while it seems clear that water resources will become increasingly scarce in at least some parts of the world, it is also now evident that rural populations in the South will be the worst affected (IPCC, 2007). Studies furthermore indicate that many water conflicts play out at local levels (Ravnborg et al., forthcoming; Thomasson, 2005), and only to a lesser extent in a transboundary context (Wolf et al., 2003).

Perhaps even more significantly, climate change is far from being the only cause of competition over water. For many rural populations in the South, conflict and cooperation over water has always been a fact of life, due to prevailing natural conditions and/or unequal patterns of distribution in which water scarcity is relative rather than absolute. In recent decades, rural areas in the South have furthermore witnessed new water users entering the scene, as large-scale farming, hydropower and most recently biofuel production develops. At the same time, programmes and projects aimed at developing new rural water infrastructure may in themselves bring about competition over water, as actors struggle to access new water resources (Funder et al., 2010b; van Koppen et al., this volume).

These features emphasise the importance of understanding the dynamics of local water conflict and cooperation in the everyday context of rural livelihoods in the South. Within the literature on water conflicts, much of the debate so far has addressed the potential for transboundary conflicts (Wolf et al., 2003; Zeitoun and Allan, 2008; Swatuk and Wirkus, 2009), while at the sub-national level there has been a particular emphasis on conflicts between communities and external actors. The latter has included important studies into the socio-political dynamics of large dams (e.g. Hirsch, 2010), and state imposition on indigenous water rights (e.g. Boelens, 2009). Such studies have, by nature, often focussed on collective resistance and action by communities, and on advocating the principles of customary rights and ownership (e.g. Van Koppen et al., 2008).

In this debate, the intra-community dynamics of water conflicts has featured less prominently (Mehta, 2005). Nevertheless, several studies working at the community level have highlighted the heterogeneity of water access and control within communities, and have documented the significance of class, gender and ethnicity in determining who prevails in gaining access to contested water sources (Peters, 1984; Juul, 2001; Crow and Sultana, 2002; Mehta, 2005).

Such work highlights the importance of taking a differentiated perspective on communities, which examines the ways in which different actors within communities engage in and relate to competition over water. In this respect, the particular strategies of the poorest community members in water conflict and cooperation remains relatively poorly understood. A better understanding of such strategies is needed to facilitate equitable rural water governance, and can also provide insights for the broader analysis of the ways in which marginalised groups respond to and are affected by competition over scarce resources.

In this paper we seek to contribute to the understanding of these issues through a discussion of selected findings from a three-year collaborative research programme on local water conflict and cooperation in Bolivia, Mali, Nicaragua, Vietnam and Zambia.¹ While the paper is informed by extensive fieldwork in all of these countries, we focus here on three particular cases of water conflict and cooperation in Bolivia, Vietnam and Zambia in order to illustrate and contextualise our findings. In each of these cases, the water access of the poorest community members was curtailed or threatened by

¹ Details of the 'Competing for Water' research programme can be found at www.diis.dk/water.

better-off households. The paper discusses how the poorest households responded to this, and what this implies for our understanding of their strategies in local water conflict and cooperation.

APPROACH AND METHODOLOGY

Competition over water is a social situation in which two or more parties have competing interests in the same water resource. Like all social situations, water competition is not static but evolves over short or long periods of time, and must be analysed as such. Significantly, water competition is not necessarily conflictive, but may be cooperative as when parties negotiate and/or sustain agreements for water use and access. This implies a perspective that recognises water competition as a social process consisting of both conflictive and cooperative events that may take place in succession of each other, or simultaneously (Ravnborg et al., 2008; Zeitoun and Mirumachi, 2008). Within such competitive situations, the involved actors engage in conflict and cooperation on the basis of the structural context and their available assets. In this respect, Franks and Cleaver (2007) have pointed out how the outcomes of water governance is defined partly by institutional frameworks and available resources, and partly by the processes whereby actors navigate institutional settings and apply whatever resources are available to them. Such an understanding echoes the broader debate on natural resource management as a dynamic social field in which power, institutions and resource access are shaped and reshaped through the actions and interactions of the involved actors (Fortmann, 1995; Cleaver, 2002; Sikor and Lund, 2009), Frequently drawing on post-structuralist social theories (e.g. Bourdieu, 1997; Giddens, 1984) such studies have elucidated the interplay of structure and agency in determining the outcome of natural resource struggles.

Taking this overall approach on board, as we do here, further implies a recognition of actors in water competition as active agents that seek to pursue their interests, even if such action may include deliberate *inaction*, and even if it may be based more on a predisposed habitus than on an explicitly considered rationale (Bourdieu, 1997). This includes the poorest community members in local water conflicts: as Scott (1990) has famously shown, the weak may drag their feet, passively refuse to cooperate, or otherwise seek to subvert domination. Importantly, Scott's point should not be exaggerated: patterns of domination are usually highly resilient and deeply ingrained, as the following will also show. Yet Scott's analysis emphasises the need for a balanced approach which departs from notions of the poor as passive victims, while on the other hand recognising the real limitations they face (de Haan and Zoomers, 2005; Nygren, 2009).

Understanding the strategies of the poorest in water competition thus requires a tracing of processes of conflict and cooperation over time and within a structural context of inequality. The cases discussed in this paper were selected for in-depth study from a larger inventory of local water conflict and cooperation events, conducted in five rural districts in Bolivia, Mali, Nicaragua, Vietnam and Zambia under the Competing for Water research programme (Ravnborg et al., forthcoming). The inventories included detailed information on water competition situations and a total of 1000+ events taking place within those situations since 1995 (Cossio et al., 2010b; Mweemba et al., 2010; Nguyen et al., 2010). The selection of cases for in-depth study was based on the criteria that they provided a particularly rich insight into the issues we wished to explore, for example that they were of a certain duration and that they allowed us to explore the actions of the poorest in some detail (for a discussion of such rich or 'dense' cases, see Flyvbjerg, 2006).

The development of each case was traced over time, charting the actions and interactions of the various actors involved. This was done using standard ethnographic approaches, with an emphasis on stratified semi-structured interviewing and techniques such as timelines to help aid memory. This included identification of the perceptions and actions of the poorest households vis-à-vis the conflict and cooperation events. The actions traced included both physical actions, speech-actions and non-actions, and with due regard to agency that might divert from the narratives imposed by other actors (or ourselves) on the conflict and cooperation events. The assets employed by the poorest households

and other actors in order to carry out the actions were also identified, and the outcomes of particular events for the poorest households were assessed.

Apart from the information obtained in the qualitative interviews, baseline information on livelihoods, water access and water ownership was provided through a stratified questionnaire survey with 200 households conducted in each of the study districts (i.e. a total of 600 interviews for the three locations discussed in this article; see Cossio and Montaña, 2011; Huong et al., 2011; Mweemba et al., 2011). Stratification of households was done using poverty indexes developed as part of the programme.² This allowed us to identify households from different well-being categories in communities. For the purposes of this article, 'poor households' and 'the poorest households' are used interchangeably to refer to households that were ranked in the lowest well-being category.

In the following, we describe and discuss the strategies of poor households in local water conflicts as found in our cases from Vietnam, Bolivia and Zambia, respectively. In particular, we focus on the role of dependency relations between the poorest and better-off households in water conflicts. We discuss how such relations can mean that the 'opponents' of the poorest households in water conflicts are in fact also their patrons, and how this effectively forces the poor to reproduce their own marginalisation in water access – and control. However, we also point to the way in which the poorest households may actively engage in collaborative efforts, and how they may seek to circumvent elite capture of water resources.

THE YEN KHE WATER PIPE CONFLICT, VIETNAM³

Communally managed water sources are often crucial for poor community members, who are typically unable to afford and/or maintain private water sources. While collaborative management of water resources may have a number of opportunities for resource-poor households, it also exposes them to the risks and costs of cooperation between multiple parties, including the risk of conflict and the appropriation of collective water sources by better-off households. Although better-off households are often less critically dependent on communal water sources, they may still have significant interests vested in such water resources. In water scarce environments in particular, collectively owned water resources may serve as an important means of expanding and diversifying water use and production for better-off households, alongside their privately owned water sources. In situations where communally owned water resources are sought, appropriated and controlled by more influential community members, the poorest households not only have limited means of responding but often also face dilemmas in terms of their underlying livelihood strategies.

This is illustrated in the case of the Yen Khe water pipe conflict in Vietnam. Yen Khe Commune is located in the rural district of Con Cuong in the uplands of northern Vietnam, and is populated by a variety of ethnic groups. Although the major part of the district is covered with forest, irrigated agriculture constitutes a vital source of livelihood for communities, with crops such as rice, maize, sweet potato, cassava, sugar cane, peanut and vegetables. Commercial logging and mining also takes place, but other than this industrial development is very limited. Despite high precipitation levels, water scarcity is an issue for many households as there are limited water storage options and unequal distribution of water in both time and space. Water conflicts in the area typically evolve around access to and use of irrigation water and infrastructure projects. Commune Committees constitute the formal

² The poverty indexes were developed from well-being rankings conducted in three communities in each research location. These rankings were 'translated' into well-being indicators covering aspects related to demography, sources of livelihood and living conditions. Each household was then scored according to the indicators, leading to a poverty index. On this basis, three poverty categories were defined, namely the poorest, the less poor and the non-poor households. See Ravnborg et al., 1999, for a detailed description of the methodology.

³ The cases are described here in abbreviated form. For a more detailed description of this case, please see Huong et al., 2011. For more information on the context of water competition and poverty in the study areas, please see the following publications by the authors: Nguyen et al., 2010; Phuong et al., 2010, 2011.

local water governance institutions, but some of the various ethnic groups apply customary water laws, and conflicts are typically sought to be resolved by the village headmen or other community level institutions, before any attempts are made to involve Commune Committees (Nguyen et al., 2010).

From enthusiasm to breakdown in Yen Khe

In 2001, a piped water project was initiated in Yen Khe Commune by the Vietnamese Government. The project was funded within the portfolio of a larger EU-funded conservation and development project in the area. A gravity-based piped water system was established in five villages within the Commune, feeding water to a number of public water tanks from where households collect water. The project was aimed at providing improved access to water for domestic purposes, with the additional option of using surplus water for small-scale vegetable cultivation, etc. The objectives for the project explicitly mentioned poor households and women as key beneficiaries, and the project documents emphasised local ownership and own contributions as important principles.

Planning, implementation and operation of the water system were carried out within the existing local government structure. The People's Committee at Commune level formed the central planning and coordinating unit for the project, issuing directions for project activities to Community Committees at Hamlet (village) level. The same structure was responsible for managing the system once operation was initiated. Any grievances from community members would therefore need to be expressed to the Community Committee, an elected body chaired by the Hamlet Chief. Prior to construction of the system, public meetings were held in each community to inform of the plans for the water system, and obtain feedback from communities on their particular needs. However, all major decision-making on the design and distribution of the system was taken by Commune-level planning staff. With reference to the notion of local ownership and own contributions, the Commune Committee required households in the target villages to contribute at least one family member as labour for the construction process.

When construction of the water supply system eventually began, all households in the involved communities duly supplied labour, typically providing five working days or more per household. This included the poorest households, among whom there was initially widespread support for the new water system. During our interviews, household members from the poorest wealth category explained how the system significantly reduced the time otherwise required for fetching water from streams, thus freeing up time for other work. The option of employing surplus water for small vegetable gardens was furthermore seen as a means of obtaining much needed additional income.

As operation of the system commenced, households from the poorest and middle strata made full use of the system, while the wealthiest households of the village tended to rely instead on their already existing privately owned wells. Several of the poorest households volunteered to undertake daily maintenance of the system, despite not normally allocating time to such voluntary activities. When the system began to suffer from breakages and siltation, a voluntary task force of 25 men was established by users of the system to ensure regular repairs in the villages. Of those who volunteered, more than half came from households in the poorest segment. Other households from this segment contributed materials for the repairs (e.g. bicycle tubes) on a voluntary basis.

After 2 years of operation it was discovered that a group of mainly wealthy community members had begun covertly tapping the water supply system upstream of the public tanks. The pipes of the system had been laid along the main road, and therefore bordered the land belonging to some of the wealthiest households in the village. By cutting holes in the pipes and diverting the water, these households were now siphoning off significant quantities of water from the public system, and employing it for their own domestic uses, gardens and livestock. As a result, insufficient water reached the tanks and thereby the majority of users. When queried on this by other villagers, members of the wealthy households claimed they had a right to tap water from the system, since they had contributed as much labour as everyone else during the initial construction process.

In reaction to this, a number of community members complained to the Community Committee. They did so both publically and privately, appointing official spokesmen or liaising individually with members of the Community Committee. Some women furthermore brought up the issue in local Women's Committees. The poorest households, however, consistently did not participate in any of these efforts. During our interviews, they referred to their dependency on wealthy households for borrowing rice or cash in times of need. Participating in complaints against the wealthy households would thus destabilise a central element in their coping strategies. Although none appeared to have received actual warnings from wealthy households against pursuing the matter, the risk of repercussions or simply being denied future assistance was considered high by the poorest households. Hence while they did not condone the acts of the wealthy households, they did not take direct action to oppose them. Instead, they continuously repaired the leaks left by wealthy households, and hoped for the more outspoken community members from the middle strata to address the issue.

The persistent complaints of other community members initially met with little response from the Head of the Community Committee, who had his own private water source and was reluctant to intervene against the wealthy households. However, after a year the matter was taken to a higher level with the assistance of another member of the Community Committee, whose own water supply was affected by the situation. The matter was thus brought before the Commune People's Committee, the key governance mechanism at Commune level. This led to a surprise inspection visit by members of the Commune People's Committee and the imposition of fines for the illegal water users. For the wealthy households the fine was however marginal, and they duly continued their activities. Following further complaints additional inspection visits were made and further fines were imposed. However, the illegal water use continued unabated, and the Community Committee leadership made only half-hearted attempts to address the situation.

Some households from the poorest segment responded to the situation by eventually taking up illegal water tapping themselves, using existing leaks or drilling holes in the pipes at night. One man recounted how he had been allowed by a wealthy household to draw water from their illegal tap, thus implicitly being rewarded for his silence on the matter. However, for the large majority of the poorest households, the outcome of the situation has been a virtual breakdown in the water supply system, and thereby a need to return to former modes of accessing water in streams. Apart from the additional time and energy required this has entailed exposure to water of poorer quality and lost opportunities in terms of additional small-scale income.

Livelihood paradoxes and the role of dependency

The case of the Yen Khe water pipe highlights several important points in understanding the strategies of the poorest in water competition. It illustrates firstly how the poor households may engage actively in cooperation to develop and maintain water resources infrastructure. In the case of Yen Khe, we see how the poorest households supplement their initially mandatory contributions of labour with voluntary contributions of additional time, labour and materials, including engaging in a joint task force to maintain the piped system. Key to these investments are the perceived livelihood benefits by the involved households, including net savings on time and labour, and options for income enhancement and diversification. Such actions and rationales are important to note in a context where government planners or even other community members sometimes consider poor households as passive victims who are incapable of longer-term planning and organisation for water infrastructure development.

However, the case of Yen Khe also emphasises the vulnerability of such cooperative arrangements when powerful local actors seek to appropriate water resources for their own benefit. With their greater endowments of assets such as economic resources and local political clout, these households can to a larger extent 'afford' to break the rules. In this case, it is exemplified most obviously by their casual indifference to the petty fines imposed, but is also more fundamentally evident in the lack of any substantial sanctions against them by the community leadership. Likewise, through their ownership of

private wells these households are less critically exposed to any possible breakdown of the system as a result of the continued cutting of holes in the communal piped system.

The structural disparities between influential and poor community members in accessing water are well known. Yet the case of Yen Khe also illustrates how broader socio-economic *ties* between poor and better-off households can play an important factor in limiting the ability of the poor to defend their rights in water conflict situations. As other community members oppose the appropriation of water resources by the better-off in Yen Khe, the poorest households take no direct actions, despite their previously enthusiastic engagement in the cooperative efforts to manage and maintain the water system. This reflects not only a recognition of their own limited clout in village politics, but also their reliance on these very same wealthy households for work and loans. Faced with the risk of losing access to such fundamental benefits, the poorest households thus have little choice but to abstain from any direct opposition to the appropriation of their new water resources. In so doing, they are forced to prioritise one element of their livelihood strategies (relying on labour and loans from wealthy households) over another (diversifying incomes through improved access to water).

Rather than mere surrender, such behaviour can be seen as pragmatic risk avoidance strategies by the poorest households. By maintaining a 'hands-off' approach they avoid the risks of sanctions from the involved wealthy households, while at the same time hoping for other community members to oppose the appropriation of their water resources. Such a strategy does not exclude the option of simultaneously practising small and relatively 'safe' forms of everyday resistance à la Scott (1990), such as doggedly continuing to repair the leaks in the water system made covertly by the wealthy households in Yen Khe.

The role of underlying dependency relations between the poorest and their opposing parties in water resource conflicts was evident across a number of our case studies, although the nature of these dependency relations varied. This is illustrated by the following case from Bolivia, in which not only socio-economic but also political ties between the poorest and the better-off come to play a role in water competition.

IRRIGATION IN QOLQUE KHOYA, BOLIVIA⁴

This case takes us to the highlands of Tiraque in Bolivia, an Andean semiarid region that is part of the 'high valley' region of Cochabamba. Here, the community of Qolque Khoya has engaged in a complex system of irrigated water sharing with two other villages since the 1950s. The farmers of the area mainly grow potatoes and ground-beans, and breed sheep. Water in the area is mainly used for irrigation and domestic purposes, with no hydropower or industrial water uses being present. A variety of different irrigation systems are used in combination, fed by both natural springs and man-made reservoirs.

Rights to draw water from irrigation systems are primarily obtained through family inheritance and, to some extent, through the contribution of labour and cash in new irrigation projects. Although some of the poorest households do have irrigation use rights, many do not, forcing them to rely on springs and precipitation for their farming, as well as other sources of income such as small-scale livestock-rearing or wage labour. Irrigation systems are nevertheless important even for the poorest since all community members are entitled to draw lesser quantities of water from the irrigation systems for domestic uses and livestock-watering.

The majority of water conflicts in the area involve irrigation systems, and frequently play out between different villages, although conflicts within villages also occur (Cossio et al., 2010b). Irrigation systems are managed by local non-state water user organisations, usually linked directly or indirectly to

⁴ For a more detailed description of this case, please see Cossio et al., 2010a. For more information on the context of water competition and poverty in the study areas, please see the following publications by the authors: Cossio et al., 2010b; Bustamante and Cossio, 2011; and Cossio and Montaña, 2011.

the peasant organisations of the area known as 'Sindicatos'. These are pivotal organisations for local community development and organisation in the area, and play a significant role in intra-community decision-making and advocating community water rights vis-à-vis other communities and government institutions. In the event of a dispute over irrigation water, a by-law requires the parties to consult the local water user association and the Sindicato before any other authority, including the police and the courts. If this is not done, the involved parties will be fined. In the case of conflicts between different communities, Sindicatos represent the community in making claims and negotiating a solution. The Sindicatos are thus pivotal institutions in resolving both intra- and inter-community conflicts in irrigation.

From agreement to conflict in Qolque Khoya

During the Bolivian agrarian reform of 1953, a complex of irrigation systems formerly belonging to local Haciendas were transferred to the village of Qolque Khoya and the neighbouring communities of Sank'ayani Bajo and Sank'ayani Alto. As the irrigation systems cut across all three communities, a water-sharing arrangement was established by the communities which lasted in various forms until the late 1990s. The system was based on a joint agreement whereby different sources of irrigation water were shared according to a pragmatic combination of both customary and more recent principles. Within each community, the water was managed and allocated by the local water user organisations under their respective Sindicatos.

However, in 1999 a major water reservoir in the area was upgraded. The project was initiated by the state with assistance from international funding agencies and NGOs. The reservoir formed an important part of the irrigation system for the villages in the area, and promised to increase the water resources in the irrigation system. The three communities broadly welcomed the project, and pooled their labour to assist in upgrading the reservoir. As such the project did not in itself cause any conflicts.

However, with the increased amount of water available, a new set of principles for allocating water between the villages was needed. In the course of redefining these rules, disagreements developed between Qolque Khoya and the two other villages that were part of the original water-sharing arrangement. Eventually, Qolque Khoya established an exclusive agreement with just one of the other villages, Sank'ayani Bajo. The agreement favoured their own population but significantly detracted from the water resources available to the third village, Sank'ayani Alto. In objection to this, the latter began blocking and eventually diverting part of the irrigated water flow to the village of Qolque Khoya. In response, the Sindicato of Qolque Khoya appealed to local and regional government authorities for support, and the matter was eventually taken to court. Minor instances of physical violence between community members from Qolque Khoya and Sank'ayani Alto were also recorded.

The poorest households of Qolque Khoya fully approved of the efforts of the Sindicato to negotiate the best possible water-sharing arrangements for their village. This included the village subsection of Tarugani, where many of the poorest families of the community live. Households in this section of the village had arrived later in the area as migrants and therefore had inferior water rights compared to the better-off households in Qolque Khoya itself. The Tarugani subsection is furthermore drier, with a generally poorer water infrastructure, and the households in this part of the village are particularly reliant on the irrigation system as a source of water for domestic uses and small-scale livestock-keeping. It was therefore particularly critical for the poorest households of Tarugani when the water supply to the system was blocked by Sank'ayani Alto. None of these households engaged actively in the efforts of the Sindicato to oppose the blocking of the system. They did, however, invest time in attending community meetings, and – significantly – contributed along with other community members to payment of costs of the court case.

Although the court case was won, the village of Sank'ayani Alto ignored the court rulings and continued blocking parts of the irrigation system, eventually even deviating some of its water resources into a different system. Eventually, the Sindicato of Qolque Khoya was forced to abandon the case and

seek other solutions. Following pressure from influential community members represented in the Sindicato (directly or through family ties) it was decided to change the allocation principles for the irrigation system within the village of Qolque Khoya itself. As a result, the Tarugani subsection of the community was denied most of its remaining irrigation water, which was instead deviated to other sections of the village. The households of Tarugani – including many of the poorest households in the village – thereby saw a critical water resource appropriated by the very same organisation they had counted on to defend it.

Some of the more prominent members of the Tarugani village subsection initially sought to defend their cause by bringing up the issue at community meetings. However, they made little headway, and the matter was soon dropped. Likewise, the poorest households of the village subsection elected not to respond. As inhabitants of an already marginalised part of the village, they considered the risk of alienating themselves from the Sindicato too big. Given the influence of the Sindicato in village development, maintaining a good relationship with its members is crucial, not only to avoid sanctions but also to ensure support for potential future activities. Indeed, at the time a proposal was being discussed to exploit underground water resources from a certain location in Qolque Khoya village, and good relations with the Sindicato were therefore needed to ensure that this project would also benefit the poorest households of Tarugani.

Reproducing inequality in water conflict and cooperation

The case of Tiraque highlights how not only socio-economic but also political dependency on the better-off may guide and constrain the actions of the poorest in local water conflict and cooperation in water. Significantly, it also illustrates the potential hazards for poor households in such relationships. Dependency relations are by nature never fully reciprocal, and for the weaker part there is always an underlying risk that one's patrons or elected bodies decide to act contrary to one's interests. Hence while organisations such as the Sindicato will often seek to maintain a degree of legitimacy towards even the poorest community members most of the time, other concerns may be prioritised higher where the stakes are sufficiently high. This is particularly so in critical situations where the interests of the powerful actors themselves in access to water are threatened, as exemplified in Tiraque.

During our interviews, households from the poorest category often expressed a clear perception of the possible risks inherent in their dependency on more powerful actors to act on their behalf. However, often these risks were seen as the 'least bad' option, or quite simply as the only option. This is most immediately obvious in situations such as the inter-village conflict in Tiraque, where the poorest households have little chance of influencing matters other than supporting the Sindicato as their community's representative body. It is however also evident in more subtle dispositions, such as the lack of any significant resistance to the Sindicato even after it has appropriated most of the remaining water resources from the poorest section of the village. For the poorest households, such resistance was simply not a real option, as it would have closed down any future possibilities of support from the single most important organisation in the village, including access to future water development projects.

The fact that the poorest households refrain from countering the actions of the Sindicato illustrates how dependency relations and inequity are produced and reproduced in local water resources governance. In this respect, the poorest themselves may end up taking part in this reproduction. By continuing, out of perceived necessity, to rely on the Sindicato rather than countering its actions, the poorest households in Tiraque are effectively consolidating the power of the Sindicato even further. As pointed out by Bourdieu (1997), structural inequities often become embodied in the perceptions of the dominated, so that their actions and strategic dispositions are guided more by accommodating themselves as best as possible within existing patterns of domination, instead of challenging such domination in the first place. During interviews with poor household members, we thus often encountered statements like 'such things are not for us' and 'we do not have the knowledge to join a borehole committee'.

At this point, it is important to avoid overly deterministic views of the agency of poor households in conflict and cooperation, or to ignore the diversity of such approaches across, and even within, specific locations. This is highlighted by the following case from Muchila in Zambia.

BOREHOLE DEVELOPMENT IN MUCHILA, ZAMBIA⁵

Muchila village is located in the southern part of Namwala District in southern Zambia. The district covers approximately 10,000 square km and has a population of 82,700. Although infrastructure in the area is now gradually developing, many parts of the district remain relatively remote and have high poverty rates. Traditionally, the population in the area has consisted of a variety of ethnic minorities as well as Ila pastoralists. The area also has a growing population of Tonga crop farmers, who cultivate maize, cotton and vegetables as cash crops.

The district is characterised by low levels of water infrastructure development, and the population relies on the limited number of all-season boreholes as well as open surface water sources and hand-dug wells. During the dry season these latter water sources frequently dry up and are insufficient to meet demands. Breakdown of boreholes is furthermore a major problem and the pressure on these and other water points in the dry season is therefore high, leading to frequent local conflicts over priority of access, although there are also collaborative efforts by community members to improve the number and management of boreholes (Mweemba et al., 2010; Funder et al., 2010b).

In response to the high pressure on water resources in Muchila, a number of new boreholes have been established in the area in recent years, intended for both domestic and productive use by community members. Funded variously by international aid agencies and NGOs, the boreholes are given over to communities for collective management and ownership. In everyday operation, the boreholes are managed by elected Village Borehole Committees. These committees are established specifically with the purpose of managing an individual borehole, as well as developing rules for its use. They are therefore in principle autonomous community-based organisations outside the government structure.

The fact that Village Borehole Committees are the everyday managers of valuable new water resources in Muchila makes them important entities for water users, including wealthy cattle owners who have a strong interest in watering their cattle at the boreholes. The borehole committees are furthermore born into an already contested political terrain: characterised by legal pluralism and (until very recently) outdated water laws, the area is subject to local institutional competition between government staff, Chiefs, Headmen and other actors over authority and influence in water resources development, who therefore have strong interests in joining or otherwise influencing the borehole committees (Chileshe et al., 2005; see also van Koppen et al., this volume).

Marginalisation and response in Muchila

In 2003, a new borehole was built in Muchila in a location known as Kumalesha. The borehole was funded by an international donor agency through a demand-driven scheme, whereby individual communities submitted proposals for boreholes to the government water department at district level. The proposal for the borehole in question was prepared by Headmen from different subsections of the village, with assistance from local government representatives, and was duly approved.

The borehole was intended to serve five sub-villages in the area. Prior to drilling the borehole, a community meeting was called by the responsible District Water Officer in order to discuss the location of the borehole. At this meeting arguments broke out between households from the different sub-villages over the siting of the borehole, each claiming that their particular area would be the most

⁵ For a more detailed description of this case, please see Funder et al., 2010a. For more information on the context of water competition and poverty in the study areas, please see the following publications by the authors: Funder et al., 2010b; Mweemba et al., 2010; Funder et al., 2010b; and Mweemba et al., 2011.

appropriate location. During the following months, Headmen from the different sub-villages sought to influence the matter by individually looking up a variety of local authorities to argue the case for their particular subsection of the community.

The matter was eventually settled when the Head of the local clinic was called in as a neutral mediator, and proposed that the borehole should be located centrally in the village near the road, where it would be easily accessible to all. While accepted by the involved Headmen and government officers as a reasonable compromise, this was not an equitable solution for the poorest households of the village. Most of the land in the proposed central location belonged to cattle-owning families from the middle- and upper-wealth categories who had been among the first to settle in the area. As a result, these households gained easy access to the borehole in terms of walking distance, and were furthermore able to lay claim to small plots of land near the borehole where they established hand-irrigated vegetable gardens. By contrast, most of the poorest households of the village lived at the fringes of the village. They were now left with walking distances of up to an hour to collect water for domestic uses at the borehole, and with no hope of irrigation opportunities.

This marginalisation of the poorest households was further institutionalised when a Village Borehole Committee was set up and charged with maintaining the borehole and developing rules for its use. The District Water Officer advised the community of the importance in ensuring that the so-called 'vulnerable' groups (women and the poorest) were included on the committee. However, not wanting to impose a top-down rule-set, he left it to the committees to interpret and define what this entailed in practice.

While democratically elected, the Committee soon became dominated by wealthy and middle-strata households, whose emphasis was on cattle production. No members from the poorest segment ran for election. The effects of this became evident when cattle owners of the village began claiming that cattle had particular priority of access to the borehole, and that other users should seek alternative options or minimise their water use. While never formally decided upon, the claims met with silent consent from the Village Borehole Committee and soon became routine practice. This development was highly problematic for the poorest households in the village. The cattle owners were all from the wealthy or middle-strata households, whereas none of the poorest households had cattle of their own. Their main personal use of the borehole was thus for drinking water and other domestic uses. When seeking to collect borehole water for these purposes, they were now daily forced to wait several hours for their turn at the borehole while the better-off watered their cattle.

The responses of the poorest households to this process of marginalisation took on a variety of forms. Some households in the poorest category found themselves in a paradox similar to that experienced by their Vietnamese counterparts discussed above. Working as cattle herders for better-off households, they were, on the one hand, interested in using the borehole to water the cattle of the wealthy families they served. On the other hand, they fully realised that by doing so they were helping to undermine the access of poor households such as themselves to the borehole. In practice, these households inevitably prioritised the welfare of the cattle they tended, and thus avoided any efforts to oppose the better-off households in terms of the borehole. This partly reflected the degree of dependency on such work among poor families, and partly reflected the extent to which male household members prioritised livestock over domestic uses, even when this cattle was not their own. Significantly, this strategy furthermore provided an opportunity to draw water for personal domestic use while watering the cattle of wealthy households.

However, other households from the poorest category did actively seek to counter the efforts of better-off households to capture the borehole. They never did so openly or explicitly, but sought instead to influence matters through discrete private lobbying with community members of higher status that they considered 'safe' – i.e. people they knew or felt were on their side. During the siting of the borehole, some poor households thus individually approached their Headman, urging him not to engage in compromises with the competing parties. Seeking to oppose the domination of cattle-owning households at the borehole, some poor households asked a local teacher to speak their case with the

borehole committee. Likewise, when an outspoken group of better-off women began to oppose the principle that cattle had priority of access, several poor women individually sought them out at their homes or at water points to express their support and to urge them to continue.

A third and final approach applied by some households from the poorest category was to disengage entirely from the borehole. Staying away from all community meetings related to the issue, they continued instead to rely on other existing sources of water, including communal dug wells and the limited number of natural water sources such as *dambos* (shallow wetland areas, in this case of very limited size). These alternative options often involved considerable walking distances and investments of time that equalled or superseded the distance to the borehole, and which in all cases provided water of a much poorer quality. When asked why they preferred this, they explained that these water sources provided reliable outcomes at a known cost (e.g. walking time). The borehole, by contrast, required interactions with a dominating elite and thereby a high probability that they would lose out. It also entailed time-consuming meetings, risks of fines, affiliation fees, etc.

Despite their obvious logic, these various efforts did little to reduce the overall control of the borehole by better-off households. The various efforts by some poor households to work through more influential parties appeared promising at first, as the borehole committee eventually agreed to reserve different times of the day for cattle watering, irrigation and domestic water uses respectively. After a while, however, cattle users began transgressing the rules whenever households of a low social status were drawing water at the borehole. The situation worsened when women from the wealthy and middle-strata households began to apply similar tactics, such as requiring poorer women to wait for extended periods of time while drawing water for their vegetable plots. A number of the poorest borehole users thus eventually joined those households that had entirely abandoned the borehole in favour of more easily accessible water points. In so doing they received more freedom of access, but also lost an opportunity for improved water quality and all-year access to water. Hence, only those poor households who exploited their role as cattle herders made any immediate gains from the situation, although always within a dependency relation to the better-off households whose access to water they benefitted from.

Seeking escape: Work-arounds and evasion

The case of the Muchila borehole illustrates the important point that poor households may respond differently when faced with powerful adversaries in water conflicts, even within the same community. In Muchila, some of the poorest households thus replicated the 'hands-off' approach also employed by the poorest community members in Yen Khe. However, other households from the poorest category took a more active approach and sought to circumvent their adversaries by approaching trusted and more influential actors who may speak their case or who have similar interests. As previously mentioned, such strategic 'work-arounds' and more or less skilful navigation of one's networks and the local institutional landscapes are by now fairly well documented in other aspects of local land and natural resources management (Juul and Lund, 2002). The case of Muchila shows how they may also be employed in the context of water conflict and cooperation specifically, and by even very poor households with limited social networks. Finally, the complete withdrawal from the borehole by yet other poor community members can be seen as a means of seeking escape from the domination of powerful actors around the borehole, although at a high price.

Such different approaches by the poorest community members may be explained by different livelihood strategies and the specific social and economic contexts. In the case of Muchila, for instance, those households who did chose to act in defence of their access rights to the boreholes typically employed livelihood strategies oriented towards crop production. They were therefore not part of the cattle economy to the same extent as other poor households, and as such less dependent on ties to wealthy pastoralist households. A further factor here was the specific nature of borehole politics in Muchila, in which different village sections and associated factions struggle over control of boreholes

and water development more generally. Such situations may open a certain space for manoeuvring by less influential actors. Local political, economic and cultural contexts thus play a significant role in shaping the strategies and options available to the poorest households in water conflict and cooperation, leading to variety both between and within specific settings.

The case of the Muchila borehole also shows how the pragmatic assessment of one's limited resources and influences can lead to withdrawal not only from conflictive but also from cooperative events: based on past experiences, the poorest households in Muchila saw no prospects for investing time in trying to join or influence a borehole committee that was already dominated by wealthy households, and where involvement in the cooperative activities implicitly required assets such as schooling, organisational experience and speaking skills that many poor households felt they did not have.

In extension of this, poor households often emphasised the importance of making independent water investment dispositions with predictable outcomes, as opposed to collaborative processes with unsure results. This included deciding to allocate a certain amount of time and labour to collect water, based on a relatively secure knowledge that this investment would generate the expected results (i.e. that the water point has water, and that there are no unforeseen hassles, problems, expenses, time-losses, etc). While reliable and unhindered access to water points was a key priority for all water users in Muchila, predictability of outcome was thus clearly a critical point for households with very limited resources for household reproduction. This was also evident in the actions of many of the poorest households, who would frequently prefer walking longer distances and obtaining a poorer quality of water in order to be sure of reliable, hassle-free access.

CONCLUSION

The three cases discussed in this paper show how poor households may respond in various ways to the domination of better-off households in local water conflict and cooperation – but also how a number of common traits appear to be cutting across their actions. In all three cases the poorest households do not engage directly and explicitly in countering more powerful actors. To do so requires assets that poor households rarely have, and introduces a risk of sanctions from better-off households. The cases thus show how poor households emphasise risk avoidance in both conflictive and cooperative situations, to the extent where they prefer shifting to alternative, less-desirable sources of water rather than engaging in any direct confrontation with more powerful actors.

Rather than passive resignation, such an approach is based on pragmatic assessments by poor households of their situation, their adversaries and their available options. Nor is there any failure by the poor to act as such – only more *discrete* patterns of agency that may seek to secure one's interests through less-visible and less-risky approaches. In this respect, the cases show in particular how poor households tend to rely on other, more influential actors to argue their case when confronted with better-off adversaries. In the Vietnamese case, the poorest thus hope for the households from the middle strata to confront the dominant elites. In Bolivia, they rely on a powerful local community organisation to engage in negotiations with competing villages; and, in Zambia, some poor community members discretely seek support through their limited social networks.

The cases discussed here thus confirm the importance of seeing even the most marginalised parties in water conflicts as able actors, who attempt to exploit what little opportunities they have, *à la* Scott (1990). However, this does not imply that all is well and that the poorest are best left to fend for themselves. In all of the cases discussed here, dependency relations between poor and better-off households play a key role in constraining the available options for poor community members in water conflict situations. In many respects, the poorest contribute themselves to the reproduction of these relations and the associated inequality when they avoid direct confrontation and seek alternative water resources. Effectively, they rarely have any other choice.

From an analytical point of view, this suggests two things: firstly, that we should take care not to overestimate the ability of marginalised groups to achieve their interests in the face of unequal power relations within water conflicts. This may seem a simple point but is important to keep in mind at a time when there is much emphasis on agency and negotiation in natural resource management studies (see also Nygren, 2009). Secondly, it points to the importance of understanding the 'everyday politics' (Kerkvliet, 2009) of such conflicts: while it may not be surprising that better-off households tend to prevail in water conflicts, it is critical for both research and practice to understand *how* such outcomes come about. This includes examining how the outcomes of apparently straightforward water conflicts may be influenced by relations that are not immediately visible, such as dependency relations between the conflicting parties.

This, in turn, poses challenges for governments, NGOs and development agencies that wish to address the interests of the poorest in local water conflicts. Frequently in water – related interventions, the establishment of 'grassroots' community-level organisations is seen as a key means of accommodating community interests, and a main forum for community members to debate, plan and resolve disputes. Indeed, in all of the cases discussed here, community-level organisations are afforded such a role – whether they are tied in with the state structure (Vietnam), are autonomous peasant organisations (Bolivia) or are project-initiated 'community-based organisations' (Zambia). As evident from the cases, these community organisations sometimes act in the broader interests of the community, and may thereby also benefit the poorest community members. And yet, it is also clear from the cases examined here that such organisations can easily become partial to the interests of the better-off in water conflicts, thereby reflecting how elite-capture (Funder, 2010; Labonne and Chase, 2009) influences local water competition.

Improved inclusion of marginalised groups in community water organisations and water project planning is an important first step in strengthening the position of the poorest in local water conflicts (see van Koppen et al., this volume). However, relying on community-level organisations as the *only* space for representing and addressing the interests of the poorest in water conflicts is not enough in itself. A broad approach is needed, that focuses on expanding the range of options available to the poorest in water conflict and cooperation in both institutional and socio-economic terms. This may include support towards ensuring that alternative organisational spaces exist where poor households can express their grievances when other fora are 'blocked' by better-off opposing parties in water conflicts. In practice, this would entail providing a palette of options for expressing grievances in water conflicts, including both customary conflict-resolution mechanisms, other community organisations, local government structures and NGOs. Targeted efforts are then needed to ensure that poor households are, in fact, able to access such alternative spaces. This would entail dedicated outreach efforts oriented specifically at the poorest, and building on the existing strategies of poor community members. An example would be enhancing the opportunities for informal trusted parties (e.g. teachers and health workers as per the Zambian case) to assist the poorest community members in accessing the right fora.

Developing and maintaining firm and specific access rights and water-sharing agreements is a further critical area to address. While collectively owned water sources can be highly beneficial to poor households (who may not be able to afford private wells, boreholes, etc) they also present problems for those who do not possess the means to defend their access rights against other members of the collective. In all of the cases described here, poor households were in principle among the target beneficiaries of the contested water sources, and yet their access was continuously violated or overridden. Rather than just principles, firm agreements on rights and use therefore need to be stipulated, with specific reference to which users are afforded what use rights at what time. Crucially, however, such agreements need to be maintained and monitored. In this respect, new ideas are needed, such as a district-level 'monitor' or even 'ombudsman', charged with the specific task of monitoring and addressing the concerns of marginalised groups. Emerging experiences from other areas of natural resources management may also be relevant, such as the community governance

monitoring schemes currently being piloted in the context of wildlife management in southern Africa (Child, 2006; Cundill and Fabricius, 2010).

Finally, expanding the options available to poor households in water conflicts also involves recognising that institutional solutions are not enough in themselves. Equitable solutions to water conflict and cooperation thus also require parallel efforts to improve the basic livelihoods of the poor (e.g. supporting their production systems, providing multiple livelihood options, enhancing access to small-scale loans, etc). While such efforts may, at first, appear to have little to do with water governance, they are fundamental in reducing the inequalities and structural dependencies that limit the scope of action for the poorest in water competition.

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