For the Common Good: Water Users' Associations, Collective Action and the problem of "success" for Non-State Water Provisions

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Abstract

The Chinese water commons are currently under pressure. Along with many other water-stressed countries, China is facing a diminishing availability of irrigation and drinking water. As a way to tackle the problem, China introduced in 2002 a new framework for water management. This shift in governance produced the adoption of a set of principles – largely inspired by Elinor Ostrom's work on common pool resource management – emphasizing the need for increased participation of users in water management. One consequence of this is the introduction in the countryside of the so called Water Users' Associations (WUA), farmers-run associations supervising water management at the village level. This with the belief that devolving rights locally would avert the overconsumption of water and produce fair and sustainable practices of water management in the rural countryside.

Based on 16 months of anthropological fieldwork among members of different WUAs operating in Yancong Township – a drought-prone area located in Yunnan Province – this ethnographic study suggests that the way in which collective action is imagined in rural China affects the extent to which "WUAs in the book" could be replicated in "action". In particular this paper discusses how alternative and culturally specific benchmarks for evaluating organizational success as well as a local culture informing style and content of farmers participation conspire to reshape these organizations from within. Surprisingly however, the adaptation of WUA to local notions of power and efficacy does not end up undermining the fair and endurable management of water in Yancong. Rather, its is thanks to local practices of water sharing and stewardship that pre-dates the implementation of WUAs, if water is managed fairly and endurably. This paper concludes by suggesting that the operationalization of "Ostrom-inspired" organizational solutions to the Chinese water problem might end up overlooking, when not undercutting, the important contribution that ordinary Chinese villagers have long been giving to sustainability in their country.

Keywords: China, Water Users's Association, Sustainability, Water Management, Collective Action, Common-pool Resource Management.

Introduction

This paper will be concerned with the implementation of Water Users' Associations (WUA, *nongmin yongshuizhe xiehui*) in Yancong Township, a drought-prone agricultural community of south-west China where I conducted 16 months of ethnographic fieldwork[1]. In principle, WUAs are legally constituted, farmer-run associations with an elected managerial board that supervises water management at the village level, encompassing both irrigation and domestic water use (Wang et al. 2006a). These associations entered China with the *World Bank Yangtze River Basin Water Resources Project* in the early 1990s (World Bank 2003, 2010) and are considered to be a vehicle for "empowerment" of common villagers. Associations of this kind are also thought to encourage common villagers to "participate" in the governance of water. Encouraging common villagers' participation and entrusting them with the right to gain control over their local water sources may be, according to the theory upon which WUAs are based (e.g. Merrey 1998; Baland, Platteau 1996: 373-79), the only way to pursue sustainable management in places where water is in short supply.

There is a vast anthropological literature related to the implementation of bottom-up associations for the management of common resources of which WUAs are one type (Cook, Kothari 2001; Brosius, Tsing, Zerner 2005; Mosse 2013: 229). As Part I of this paper will show, anthropologists have been largely critical of developmental projects involving the "empowering" and the "participation" of common villagers. Anthropological critiques usually maintain that WUAs fail to actually "empower" anyone, as local water bureaucracies – threatened with losing control over their traditional jurisdiction – try to undermine their implementation. WUAs are also unable to encourage any participation from the common villagers; either because villagers are suspicious — knowing that the associations are not independent but ultimately controlled by the government — or because villagers are not familiar or willing to engage with the type of democratic governance demanded by the WUA model itself.

The few studies mentioning operative WUAs also point out that when associations of this type are introduced as part of a national or international development project, their organisational structure does not take long to adapt to the local context, compromising the association's capacity to support sustainable water use. What is more, empirical research shows that WUAs are working against the clock. When project funding expires, it is common for WUAs to disband, leaving space for the older network of local institutions and practices regulating resource use to re-emerge.

In this paper, I will take a different stance in this ongoing debate. While acknowledging that the top-down implementation of grassroots associations is necessarily influenced by the particular context where the implementation is happening – the classic anthropological position – I will be much more concerned with analysing the logic behind the WUA model. That is, this paper will focus on the theoretical arguments and the normative principles that underpin the intellectual and political movement advocating for the implementation of WUAs in China. The theory upon which the WUA model is based is a strand of institutional economics pioneered by Elinor Ostrom. This body of work has been approached in various ways by anthropologists, but few failed to recognise its enormous value in terms of

1 Due to confidentiality agreements, throughout the thesis I will replace all personal names and names of places below County level with pseudonyms.

progressive environmental politics (e.g. Metha, Leach, Scoones 2001: 3; Wutich, Smith 2009).

Ostrom suggests that local communities worldwide have shown themselves able to organise and produce sustainable relations with natural resources, water included (1990). That is, they are capable of solving the collective action problem they face when dealing with limited resources.[2] This argument is one that anthropologists have not only contributed to, but also share a professional bias for, as it suggests that exploitative, hierarchical social structures are neither necessary nor conducive to sustainable ways of inhabiting the natural world. Yet, this idea is also very much appreciated by Chinese water experts supporting market environmentalism (e.g. Wang et al. 2010). Saying that people could happily live without a centralised authority externally enforcing binding rules, is an attractive position for those arguing that sustainable management is affordable without costly, time-consuming political processes, granted that the blend of market rules, fiscal incentives and property rights is correctly struck (see Tsing, Brosius, Zerner 2005: 2).

This paper aims at salvaging Ostrom's work from this kind of market environmental reading. It does so by pointing at where the WUA model – built internationally and with the participation of Chinese scholars – diverges from the most recent developments of Ostrom's theory. Advocates of WUAs in China assume an overly deterministic understanding of Ostrom's *design principles* – i.e. specific rules that tend to generate success in resource management. Ostrom's rules indicate that if local people are accorded with the power to control the resource and the possibility to discuss how they should collectively organise that power – what is known as "empowerment" and "participation" in the "WUA-supportive" rhetoric – a collective solution to overexploitation will be found. WUAs are, therefore, associations designed according to these principles and their implementation assumed to be the *solution* to the depletion of local water sources.

However, Ostrom is keen to show that "successful collective action is not the *only* possibility" (Poteete, Janssen, Ostrom 2010: 218, my emphasis). Once a WUA is established – a collective *acting* on water – one should look further to see whether the association is actually producing social relations that are conducive to sustainable management. For Ostrom, such social relations are those built around trust (245). This paper will give ethnographic evidence to support this claim, showing that, in Yancong "successful" WUAs require relations based on reliability and equity. What is relevant, however, is that successful WUAs are trusted by their members, not because they allow them to "participate" or give them more "power" in matters of water management, but rather because these associations are built around the context-specific figure of the "caring leader". The positive unfolding of the relationship between the villagers and a "leader" is an important element in making sustainable management viable in the Yunnanese countryside. WUAs proponents are thus caught in an intellectual trap where they cannot see WUAs succeeding, because their own model does not account for a type of successful collective action predicated on *rewarding human relations* and *caring leaders*.

2 This problem ensues when users harvesting a limited resource have a short-term incentive to deplete the resource base rather than to conserve it. One example is the overdrawing of groundwater via the unrestrained use of water wells. See for the general argument Olson 1965 and Hardin 1968. For its detailed interdisciplinary discussion McCay, Acheson 1987: 1-36; Wade 1988; Baland & Platteau 1996: Ch2; Agrawal 2002, 2008; Acheson 2011.

To support this claim, I will base my discussion on extensive participant observation, a thirty-household questionnaire on WUA performance, and several in-depth interviews conducted with three different WUAs located in the Yancong area. The paper is arranged into two parts. **Part I** sets out some caveats for appreciating this essay's contribution and delineates the theoretical and political debate underpinning the dissemination of WUAs as a solution to the world's water problem. In this section, I will tackle in greater detail the principles informing the deployment of WUAs in water-stressed contexts. The World Bank and the Chinese governments – the two entities most involved with experimental, participative solutions to the problem of lowering water efficiency – are very likely to assume an over-simplistic, yet strongly deterministic approach to WUAs. The introduction of WUAs, it is assumed, is *per se* an advancement towards sustainability.

Yet, the very theory upon which these organisations make their own predictions actually says something different. Producing the conditions for collective action does not mean producing a collective that continuously practices sustainable water management. The latter needs to be structured around specific *social relations* that, while certainly promoted by fair and equitable rules, cannot be produced by political fiat. In my field site, sound management practices are sustained by relations of trust and reliability and rest on individual commitment and leadership, that is, the ability to become an object of emulation for others. Remarkably, as **Part II** will document thanks to a detailed analysis of three different WUAs, sustainable practices, informed by valuable *social relations*, existed well before the introduction of Yancong's WUAs. Finally, the conclusion will put under harder scrutiny the very argument advanced by this paper. With the term "sustainability", we very often conflate two different aspects of sound resource management. The first is the ability to conserve the resource *stock*, the second the ability to distribute the resource *base.* In other words, the former is about making water use efficient, avoiding waste. The latter is about fairness in distribution, avoiding skewed appropriation and dispossession. My ethnography shows that Yancong WUAs are generally more "successful" with the latter component of sustainability than with the former. To assure a water-rich future for China's future generations, a more concrete and vocal environmental politics should first be constructed.

Part I

Language Disclaimer

I should warn the reader that this paper will make use of a specialised language to talk about issues of water management. The first special term is "cooperation". Cooperation occurs when individuals group together to bring about solutions to a situation that negatively affects the group or arrangements that would better the group's welfare, even though it is not necessarily defined in material terms. In this sense, cooperation is equivalent to "collective action". Defined in this way, both terms own their insightfulness to Elinor Ostrom's work on the commons (1990, 1992; Ostrom, Gardner 1993; Poteete, Janssen, Ostrom 2010), which will play an important role in this paper.

The second specialised term I will employ is that of "sustainability". With "sustainability" I refer to a specific type of human relation to water resources that, in the end, achieves two things: a) maintaining the material and immaterial infrastructure (e.g. canals and rules on their use) needed to share water across households and fields; and b) keeping up consumption

with water availability (thus averting overconsumption and shortages). One should think of this distinction as showing the problem of sustainability on two different, yet interrelated, analytical levels. Producing and maintaining the "water infrastructure" (i.e. definition a) is a first-order problem; balancing consumption with availability is a second-order problem (i.e. definition b).

The second-order problem describe the social challenge of adopting a flexible pattern of resource consumption that could be protracted to infinity. The first-order problem, instead, refers to what *surrounds* and *inflects* the sustainable consumption of a given resource. As regards irrigation and drinking water, for example, one would need a series of concerted human actions – from resource appropriation and storage, to the upkeep of the infrastructure and the production of knowledge about water and its transportation – without which collective consumption could not take place. Therefore, to consume water sustainably in the second-order sense, one should make sure that the first-order problem – making possible collective consumption of water – is solved. There is no solution to the problem of over-exploitation without first having worked out how to keep "cooperation" over water possible. Because of that, I will refer to the solution to this first-order problem using the term "sustained collective action"[3] .

I make this distinction between "sustainability", "collective action" and "sustained collective action" to underline that the objective set by water conservancy – the type of sustainability emerging from the solution to the second-order problem – is something that could not be produced by individuals alone. To restrain aggregated consumption, for example, a set of technologies, state agencies, incentives and rules should be designed to guide individual behaviour towards this particular objective. Moreover, this could be realised only if "water infrastructure" – both material and immaterial – is preserved through mutual supervision, division of labour and concerted action. This is to say that "sustained collective action" solves the first-order problem of "sustainability", de facto producing water access for individuals, but at the same time fails at solving the second-order problem, that is avoiding overconsumption.

The fourth and final specialised term employed here is that of "successful collective action", i.e. collective action that produces second-order sustainability. My fieldwork shows that "successful collective action" is not a direct consequence of the introduction of WUAs. My case studies of Sangou Township WUA and of Pitch-Black Plateau WUA will clarify this point. There, "successful collective action" ensues from the respect, trust and authority commanded by specific members of the two associations. This respect pre-dates the introduction of the WUAs and it is not derived from any set of fixed managerial principles, but instead unfolds from the relations these authoritative figures maintain with fellow villagers. Table 1 resumes the collective action framework developed in this paper.

Table 1

3 One could actually argue that not only without (a) solving the problem of maintaining the "water infrastructure" operative, could (b) a solution to over-harvesting be attained, but that actually, not solving (a) means avoiding producing the conditions for (b). That is, without human exploitation of nature, there would be no problem of sustainability at all, as humankind is the first species on earth to have the intellectual capacity to consciously undermine the very conditions of its own reproduction. This is, for instance, the position assumed by "deep ecologism" (see Naess 1989: Ch1).

Water Delivery and CA problems	Uncooperative withdrawal	Sustained Collective Action	Successful Collective Action
Open access to water sources under limited use	X		
Sustain infrastructure to collective use		X	X
Produce environmental sustainability			X

The counter-example for this claim is the Bamboo Forests Mouth WUA, the last association presented in this paper. This WUA is equipped with the clearest and most comprehensive set of rules designed for water conservancy. Nonetheless, it failed to achieve any significant contribution to sustainable water use precisely because its members did not trust its leader, thereby failing to engage in "sustained collective action". In fact, this last WUA ended up being taken over by one of its appointed board members and emptied of its original mission, later to be transformed into a vehicle for this man's own power politics. Before showing this however, I first need to spend some time on the empirical studies of WUAs, locating this paper within this important body of work.

WUAs and the Problem of Collective Action in Water Management

The in-depth study of WUAs has recently been on the rise (Bruns & Meinzen-Dick 2000; Roth, Boelens, Zwarteveen 2005). This is because the relationship between human societies and water is now understood to have slipped out of control. New social arrangements have to be designed to bring sustainable patterns of consumption back in place (Netting 1982; Brombley 1983; McCay, Acheson 1987; Bardhan, Ray 2008; Poteete, Janssen, Ostrom 2010). One way to address the problem of the global water shortage is to look for places where the scant water availability has been coped with safely through specific institutional solutions. Therefore, scholars have been concerned with studying more or less formal "water institutions" which successfully manage irrigation and drinking water, usually in small locales.

The declared aim of this first wave of scholarship has been to predict the emergence of these institutions or to describe their functioning (Hunt, Hunt 1976; Hunt 1989, 2007; Wade 1988; Mosse 1997, 1999; Ostrom 1990, 1992). This has the aim of assessing why and in what circumstances water institutions fall short of delivering what they are designed for, namely what I here term "sustained collective action" (e.g. Hunt 2007: 202-4). A key recommendation stemming from this literature is that the people closer to the water resource are those who should be entrusted with the rights to manage the resource itself. A far-away, centralised bureaucracy – lacking sufficient information and trust – usually fails to achieve first-order sustainability in small communities, leading instead to defective and unsustainable institutional practices.

As they lend themselves to the interpretation that centralised management is inadequate (i.e.

market environmentalism), the findings of this literature prompted water experts to reconsider the role of the state in the management of water. It was now time to experiment with alternatives. International organisations familiar with this debate started arguing for these "water institutions" encountered in the literature to be replicated in places where water use was considered deficient (World Bank 2003; FAO 2007). Therefore, many development projects have been set up, most prominently in regions of the global south, to pilot the institutionalisation of grassroots water management groups inspired by the literature on "successful collective action" (e.g. Meinzen-Dick 1997; Groenfeldt 1997; APO 1998; Knox, Meinzen-Dick 2001; Boelens, Zwarteveen 2005; van Koppen, Giordano, Butterworth 2008; Wutich 2009).

Within these projects, the design of WUAs has been based on some key assumptions, derived from Elinor Ostrom's works on the commons. In an early work, Ostrom identified seven key principles characterising institutions "successfully" governing the commons across cultures (1990). Because the cases compared in her book – all coming from decentralised societies – had some important institutional features in common, Ostrom claimed that these principles provided the skeleton for the *successful* government of common resources (i.e. solving both first- and second-order problems)[4].

The theory behind the creation of WUAs draws on Ostrom's considerations. The scaffolding of WUAs is thus composed of a number of "principles" deemed to be essential to their success. Among others, the most relevant for our present discussion are: 1) WUAs must be owned by farmers and be democratically organised, with a stress on members' active participation in decision making; 2) farmers should collect fees autonomously and be fiscally independent; 3) they should craft their own rules and enforce them; and 4) they should resolve disputes among their users. If these requirements are met, WUAs are predicated to rationalise distribution, to ensure equity and to allow for the institutions' perpetuation (World Bank 2010: 6-7). As with many other countries, China has been keen to follow to the letter the above-mentioned guidelines proposed by the World Bank for the introduction of WUAs in their own country (Wang et al. 2010; Su 2010; Guo et al. 2010, Xu 2010; Aarnoudse et al. 2012a; Zhang et al. 2013).

It should be immediately noted that even if inspired by Ostrom, these four points do not exhaust nor completely coincide with the principles discovered by Ostrom (see table 2). Similarly, the WUAs operating in the countryside of many developing countries are run in ways that do not respect the model advanced by national governments and international organisations. In fact, the empirical literature on WUAs has consistently shown how the assumptions expressed "on paper" by project planners have hardly been replicated in reality (Hunt 1989; Bruns 1992; Mosse 1997, 2003: Ch. 9, 2008; Mollinga et al. 2005; Ou et al 2004; Huang et al. 2009: 220-1). In relation to China, the WUA literature also suggests that "actually existing" WUAs do not only differ from the model, but are also more likely to have an impact on the performance of local irrigated agriculture, as opposed to diminishing the amount of water used (e.g. Ou et al. 2004; Mollinga et al. 2005; Wang et al. 2010; Huang et al. 2010)[5]. Regarding the latter claim, there are two analyses that should concern us.

4 See the discussion in Agrawal 2002; Ostrom 2005 and Poteete, Janssen, Ostrom 2010 for successive refinements of these design principles.

5 There is at least one study demonstrating that Chinese WUAs have a significant impact on water efficiency (e.g. crop yields per drop of water), thus implying the possibility for progressive reduction of water use (but

Table 2

Chinese WUA principles (based on World Bank 2010 and Wang et al. 2010)	Ostrom's design principles (based on Poteete, Janssen, Ostrom 2010: 99-101)
Legal status and participation	Legal status, participation and *rights recognition*
Fees collection and full cost recovery (management and delivery)	Fees collection (monitoring) has to be *accountable* to users. There is no explicit reference to full cost recovery.
Rules crafting and enforcement	Rules crafting and enforcement
Disputes resolution	Disputes resolution

The first critique comes from those who sympathise with the goal of sustainability but oppose the way in which this goal is pursued. These scholars claim that it is difficult to understand whether WUAs do what they are designed for. First, there is an intrinsic problem of measurability. Assessing WUA performance, within or outside China, has already proved to be controversial. Proxy measures are often needed to measure water efficiency, causing uncertainty as to the magnitude or quality of the effects measured (Araral 2009: 688). Second, what has to be considered the immediate mission WUAs – against what benchmark WUA performance has to be put – is also subject to debate (Stern et al. 2002: 457). For some, it is the fiscal gain that the institutionalisation of WUAs can generate (Shivakoti et al 2005: 28). For others, water conservancy and productivity have priority (Wang et al. 2007a, 2007b). In China, measuring the effects that WUAs have on water use show that these are most likely trade-offs: when they produce positive effects on water productivity, they also impact on water fees, de facto eroding the resources of poorer households (Huang et al. 2010: 367; Liu et al. 2008: 478). Therefore, in this intellectual camp, the notion of "successful" implementation remains hotly debated.

Another kind of critique comes from those who do not agree with the hegemonic narrative of sustainability (e.g. Li 2005: 447; 1996). Actually, these scholars claim, sustainable relationships with water were ubiquitous prior to the advent of global capitalism. One has only to look at places spared from the global flow of capital as Ostrom, Geertz (1980) or Lansing (2006) did, to find "customary" solutions to the problem of governing the commons. Market Environmentalism-inspired solutions to a problem that directly stems from market relations could never solve the problem for good, but just temporarily "fix" it (Bakker 2003: 35; also Waller 1994). By and large, humanities scholars – anthropologists included – have joined this critical camp, criticising the kind of simplifications set forth by international agencies supporting the introduction of WUAs (see Mosse 1997, 1999, 2003; Nickum 2003; Bakker 2008; Mansfield 2008). In this critique, there is one key idea. Market environmentalism, by treating water institutions as a mere mechanism for water efficiency, has largely misjudged the greater significance that "customary" institutions have for their members (Mosse 1997; Lam 2006; Trawick 2003a, 2003b; Wutich 2011).

Local communities are indeed able to solve either first- or second-order problems with water management, only the developmental policies advanced by market environmentalists are

not for absolute reduction), Wang et al 2005a.

making their job more strenuous. By "rendering society technical" as Tania Li has recently put it (2011), that is by repackaging historically-rooted mutualistic arrangements to sustain water provisions into an econometrics incentive structure hinging on and exacerbating the significance of members' individual calculus and interests, WUAs are de facto undermining local people's efforts to solve their collective action problems. Rather, institutions like WUAs appear, to those positioned on this side of the debate, as disingenuous attempts at covering the real effects that market environmentalism has on the poor, namely discharging on them the social costs of market environmentalism itself. As Julia Elychar as remarked in her famous studies of neoliberal developmental policies in Egypt, members of underprivileged communities are now asked "to save themselves (and the common water, I should add) by their effort alone" (2002: 500), only to then be blamed if they fail to do so.

This paper's argument largely follows the anthropologists quoted above, but assumes a more sympathetic approach to the cause of sustainability. For many families living in Yancong Township, water management has long been, and still is a source of real preoccupation. The history of water management here has long been punctuated with conflicts between upstream users and downstream ones – that is people living closer to the water source vs people living downhill (see Liu 2005: 264-66). According to my informants, the opening-reforms (described simply as "capitalism") have not represented a break with a conflict-less past. That is, during the Mao era, conflicts over water actually abounded. What is more, unquestionable physical constraints played a role. Fluctuating rainfalls meant reduced access for agriculture during the sowing season and greater pressure being put on communal water sources such as groundwater wells. Stories of villages and households taking arms against one another because of irrigation water were part of the vernacular knowledge of resource politics. To "cooperate" (*hezuo*) or to "fight" (*zhengduo*) over water access had become a recurring question for many rural households I met during fieldwork.

This does not mean that Yancong people did not ever find ways to autonomously organise and solve their communal water problems. Actually, they succeeded many times. Before 2008, the year when the first WUA appeared in the Yancong area, many villages already had in place solidarity networks that would collect and redistribute water to households lacking access to the resource. Moreover, norms over resource access had already been identified and locally enforced. Similarly, rules as to how many days a farmer could water her allocated rice paddy were widespread and consistently adopted[6]. These "sustainable" practices however did not come in the form of a formal institution such as a WUA, but emerged, as I will show, from the micro-politics of village life. Organising to solve collective problems (i.e. collective action), is here elicited by inspiring individuals, who are able to persuade people of the advantages that would come from acting together. Furthermore, it is never the immediate material benefits arising from acting together (i.e. water conservancy) that convince people to correct their behaviour and cooperate. Admittedly, they do actually renounce something when cooperating with others, namely the short-term benefits they would gain from free-riding on the resource. Rather, local people undertake "sustained collective action" and produce "successful collective action" only when the company with which they take "action", and the

6 In Yancong Township, irrigation water was distributed between March and June. The water from the Great Leap Forward Reservoir arrived first in Bamboo Forest Mouth Village. There, villagers would have fifteen days to water their paddies, before being required to close the sluice gate operating on their plots, allowing water to flow to the next village for another fifteen days. In this way, six different villages get their water for irrigated plots.

principles upon which this company is predicated, matter to them. In other words, the *social relations* formed by acting together are, to them, more important than the aim itself.

Ostrom has been keen to emphasise that the users of a common resource can successfully organise in "sustained collective action" by positing goals that go "beyond immediate material benefit" (Poteete, Janssen, Ostrom 2010: 222). This is the point that the supporters of WUAs in China miss when they analyse the performance and durability of WUAs. The institutionalisation of principles that have been shown in the literature to be conducive to "sustained collective action" (Ostrom 1990) does not ensure that any of these associations, once created, will be populated by *social relations* capable of producing "successful collective action" — that is practices that afford both a sustainable rapport with the resource and the survival of these very practices through time (Poteete, Janssen, Ostrom 2010: 245). Part II will provide evidence for this claim.

Part II

The Sangou Township WUA

Let me start my ethnographic section on Yancong's WUAs from the last association I studied during fieldwork. This was established in Sangou (SG), a township-level (*xiang*) community with fewer than 30,000 inhabitants located in a windy gorge north of Huize, 50 km south-west of Yancong. My encounter with this particular WUA was arranged through a previous meeting with Tim Zachernuk, an important figure in the China-Canada Agricultural Development Program, with specific experience of establishing WUAs in China. Tim met me in his Qujing office in early February 2012, and discussed with me some of the problems experienced in introducing the WUA framework in rural China. Apparently, many of the projects supported by either the World Bank (Aarnoudse 2010; Aarnoudse et al. 2012b; Lu 2008) or by other players, the Chinese state included (see Plummer 2004: 4-5), disbanded once the money tap was turned off. The reasons for this were historical: the local political history deeply infiltrated the design of the associations, making WUAs a whole different beast than what was intended.

Many of the things Tim was describing to me, resonated with what Wang Jinxia, the leading Chinese scholar working on WUAs, had the patience to explain to me back at the Chinese Academy of Social Sciences, Beijing, the previous October. "The Gansu Province experience, which involved the World Bank and the DFID, was successful in that it offered huge monetary incentives to the participants. When funding recedes, so also does cooperation. WUAs and water rights are failing everywhere, not just in China, exactly for these reasons"[7]. To that, Tim added a slightly more problematic statement: "Participatory practices are often intended to give greater voice to farmers even though they don't take naturally to the approach. There's disillusionment and alienation from the local government. There's also a history of grudges towards cooperation in agriculture which stems from the communist past".

These two water experts working on Chinese WUAs were very consciously warning me that I might be on very shaky ground. WUAs were unstable, gold-digging beasts. The great

7 Interview with Dr Wang Jinxia, 20/10/2011, CASS, Beijing.

majority of Chinese WUAs were actually seen as failing in producing water efficiency, or achieving results which were not durable. The only thing one could do about them was "to compare large data and discover where the implementation process is going astray" as Wang Jinxia advised me. The quite explicit notion maintained by both experts was that, because the implementation process did not usually succeed in crafting the type of institution prescribed by the WUA model, the resulting "abnormal" associations were most likely to fall short of helping members save water. Even more so because Chinese farmers did not know how to cooperate, nor were they willing to do so unless they could profit from it. When I visited SG for the first time in March 2012, I was expecting the worst.

The Chair of the SG WUA board, Mr. Hong, introduced me briefly to the specificities of his association. Established through a large grant from the Sino-German Cooperative Program in 2009, the association was composed of 67 group leaders (*xiaozuzhang*) and a board of 11. All members came from two separate administrative villages located in SG's area, Stone Dragon and Black Soil Village and the WUA supervised irrigation and drinking water for a population of roughly six thousand people. Within the board, five people, who also made up the Stone Dragon Village Committee, were considered to be the collective CEO. As for salary and bonuses, the CEO revenues were not linked to the performance of the association, being rather "fixed" as in a government position. General meetings, attended by all the members but not by all the household heads, were organised twice a year, at the beginning of each sowing season. That is to say, none of the *design principles* of the Chinese WUA model I reviewed in Part I was consistently implemented. There was little autonomy; few incentives for key managerial positions and for saving water[8]; and participation was low.

However, the water delivery technology employed was state of the art. As water was relatively abundant throughout the year[9], the technicians cooperating with the project substituted the overground irrigation web of concrete channels – the most common delivery system in Huize County – with an underground network of pipes which, being controlled by an automated station adjoining the WUA building, allowed for on-demand delivery. Water for irrigation was thus accessed from the surfacing pressurised water pillars (*guanzhuang*): technology which, I was told, created incentives for establishing farmers' co-ops entrusted with several *mu*[10] of land (the smallest plot being of 50 *mu*), thus averting the pattern of sparse smallholding and stagnant productivity people in SG attributed to Yancong's agriculture. Another source of water was the communal groundwater pump installed by the program's engineers which pumped water from 80 metres underground and which provided a maximum of 400 m^3 of water per day.

One truly interesting aspect of the local water management practices was the sub-partition of water allocation based on resource use (*liang kuair de zuzhi*): household needs and agricultural production. Formally, the SG's WUA supervised the latter – which, given the on-demand scheme, was pretty much self-regulating – while the former was dealt with independently by the various hamlets located across SG. For Mr Hong this was due to the "traditional" (*chuantong*) method each community (*xiaozu*) used to allocate drinking water

8 Irrigation fees, amounting to 12 RMB x mu were collected once a year by all group leaders. There was no mechanism linking the amount of water used to the amount of fees paid.

9 This should strike the reader as a distinguishing feature of Sangou Township, as compared to the water-poor environment of Yancong. Many factors produced this situation: closer proximity to the Huize Dam, more efficient farming in the community, less terracing, plenty of untapped natural springs.

10 Chinese area unit. 1 mu = 0.0666 ha.

from communal water taps (*longtou*). This autonomous political practice (*zifa qilai de*) revolved around particular persons who decided to bear responsibility for regulating the communal use of water sources in small hamlets. When the Sino-German project first arrived in SG, these "traditional" management practices were integrated in the WUA scheme, replacing compulsory "participation" with the principal of democratic "representation". The 67 group-leaders members of the SG WUA were all elected by a *xiaozu* or by a portion of it, and were asked to "represent" the interests of those who elected them during the WUA's meetings. Replacing "participation" with "representation", I was told by Mr Hong, "contributed to build face with the local communities and assured that villagers accepted the new association".

From my first visit, I returned several times to SG, spending weeks interviewing its members and attending its meetings. I will pause here on a series of interviews I conducted with one SG WUA group leader – whom I will call Group Leader Zhang – to show in detail the traditional water management as practised by local villagers. This, as Zhang will show, is thought to be able to achieve both "sustained" and "successful" collective action. The first interview was registered at Group's Leader Zhang house, while seated by its porch:

> During the 80s, there was no tap water. People had to carry water from distant wells with poles (*tiaoshui*). When families had enough money, they would dig a well, and soon the water table fell too deep, nobody was able to get any more water this way. At the time, we were too poor for electric pumps. Many felt compelled to start building water tanks (*shuichi*) to collect creek and rainwater. […] The problems arose at particular moments. For instance, our geography here is one of striking contrasts: from February to May, water is in shortage as you have dry weather coupled with the needs of agriculture. Every year is a drought year, so to speak. These are "particular moments" where it is not possible for families alone to solve the problem. Everyone is far more concerned with saving himself (*zijiu*). There's the need for an institution (*zhidu*) or specific persons who can mediate among competing interests. […] I think that in certain situations it is not wise to get away from the state (*zhengfu shi libukai de*). These are those moments when you have thirty or more households fighting among one other, or experiencing particular problems. These are also the cases when associations beget a solution (*yi xiehui wei chengguo*). Why did I volunteer for this kind of work? If not me, who else? In this situation, I usually go to the "haves", take water, and bring it to the "have-nots". Of course, I do it for free. Here drinking water is free, and it should be the same for water services.

On another occasion, Group Leader Zhang recounted to me how people like him are selected as group leader and what this position entails:

> How are people selected for stewarding water (*guanshui*)? Mainly it comes with gathering and consulting. Through consultation, we think of how a particular problem could be solved, we imagine methods to get out of it. One such is to select a representative of the people (*renmin daibiao*). Usually in my small hamlet, ten, thirteen families get together and chose among them somebody that could represent the families in front of the village's leaders[11]. In this way, an association of representatives is formed and the cadres (*ganbu*) can relate directly with its members to speak to the wider community. These persons have to personally step forward and propose themselves as representatives. If they are up to the job, they are picked, if they later prove not to be so, they can be discharged. […] I'm not sure whether this system was something that we started doing with the commune (*gongshefa*), or if it was something that we were doing

11 For a similar, ethnographically documented elective procedure in the local government of water, see Zhu Xiaoyang's Yunnanese ethnography (2011: 46).

> before that and have kept doing all along (*xiguanfa*). What I know is that here we think the most capable (*you nengli*) should be the one who takes responsibility [...] Through consultation we also control people's behaviour (*xingwei*): we collectively single out and criticise (*piping*) the person who has done something wrong. This usually happens because of misunderstandings, people generally do not speak clearly (*shuobuding*) with each other. Bad communication often leads to resentment (*fenqi*). The key is to let them blow off, and then try to reach a compromise (*rangbu*). How do we reach [compromise]? The human heart is full of these resentments, full of grudges. You have to put your trust in the capacity of a "civilising culture" (*wenming wenhua*) to transform big issues into small issues, and small ones into none. If you think about the problem of local shortage (*xiaodifang de queshui*), it is crucial that people maintain good relationships with others (*renqinghao*). If I care about others, if others care about me (*huxiangguanxin*), I won't have any reason to excavate a well on my own or to steal water from the communal tap.

The SG case shows four things pertaining to the likelihood that "collective action" could be undertaken in a community affected by cyclical water shortage. First, in Group Leader Zhang's description of ground-up arrangements for water management, the experience of cyclical shortage is at the base of villagers' decision to organise around the water problem. It is by virtue of having lived through periodic droughts, that villagers realise how their own behaviour could have an impact on their community's welfare. In fact, enough water will be available to everyone only if they collectively adapt to the now lower availability of water.

Second, villagers autonomously organise to enact neither a "participatory" nor an "empowering" association. Group leaders, to whom authority over water use is accorded, are in fact primarily middle-aged men, who will exert authority over farming households mainly composed by women. These individuals are required to exert a certain amount of "competence" (*nengli*), that is the ability to "get things done" smoothly and with the approval of one's own community (Feuchtwang, Wang 2001: 122). Remarkably, Zhang is unaware of where this particular political habit came from, and yet he is adamant that this type of arrangement pre-dates the arrival of the SG WUA. That is to say, regardless of the presence of a WUA, SG villagers have been capable of "sustained collective action".

A third point is the following. The "sustained collective action" practices by the SG villagers is primarily concerned with evening up gaps in distribution. In other words, the collective effort is towards achieving fair distribution in time of crisis. Group Leader Zhang is entrusted with the power to take water from those who have more, usually families living upstream, to those living downstream, who lack a steady source of drinking and irrigation water. However, punishment for violators is pursued collectively, with the greater community of users taking part into the "critique sessions", thereby acknowledging that water access needs to be monitored and regulated.

This brings me directly to the last point. Villagers living in Zhang's hamlets confirmed in subsequent conversations that Zhang's work was crucial to living through "critical times" (*chijin*), and contested that in places where leaders are not "trustworthy" (*bukekaode*), it is difficult to have "human feelings" (*haorenqing*) for others, not to speak of getting water. These remarks, when coupled with Zhang's own analysis, shows that "sustained collective action" is "sustained" not only by rules, nor by the prospects of coping with the dramatic effects of a shortage. People involved in taking collective action against the predicaments of shortage explicitly mention that good relationships with fellow villagers are the most

important requirements. However, there is more. Zhang goes a step further by claiming "mutual care" (*huxiangguanxin*) to be the basis for "successful collective action". That is, good social relations when coupled with a caring leader – who is "capable" of restoring good relations by transforming "big problems into small problems" – might not just engender fairer distribution but also avoid the depletion of the resource altogether. "I won't have any reason to excavate my own well or to steal water for the communal tap" if everyone cares about others. These four points are also observed in the following case.

The Pitch-Black Plateau WUA

I arrived for the first time in Pitch-Black Plateau Village (PBP) in November 2011, thanks to the help provided by the staff of the Huize County Water Bureau. In this village, a successful WUA had been established in 2008 and I was highly recommended to pay a visit to its leader, Master Du. PBP is a very remote agricultural village with no more than one hundred years of history. The local population amounts to 238 divided among 70 households (*hu*). Mud-brick houses are clustered around the top of Mohei Mountain, which lies at an altitude of 2,349 m to the North of Yancong. Seasonality is marked by a succession of wet and dry months, with mild temperatures and fair weather. In the period 2008-2012, rainfall in the area swung between 486 and 843 mm[12]. Further, as in many other hilltop villages in Huize County, arboreal vegetation was rarely seen in PBP, as most of the mountains slopes had been terraced and turned into rice paddies first, and more recently to drought-resistant crops, such as maize, tobacco and special breeds of wheat. Agriculture here lacks support from irrigation infrastructure, and water came mainly from the sparse rainfalls (*kaotian nongye*). During the 1980s, the intensification of agriculture brought diminishing marginal returns, which forced the majority of male farmers to diversify occupations, migrating towards Sangou or Huize in search of temporary work in the construction or manufacturing sector. Thus, women have been left raising pigs and caring for the few cultivated plots left.

Drawing water for agriculture here is hugely problematic: families had to invest heavily in the construction of autonomous water cellars (*shuijiao*)[13] which are now connected to the unpredictable household water supply network, completed in 1987 and never fully operational since then. Furthermore, without vegetation cover, the scant rainfall flows readily down the terraced slopes, often creating flash landslides, which deprive farmers of precious land plots. Even more worryingly, water shortage is forecast to worsen in the near future. By 2014, more than twenty households will be displaced to bordering villages, as 700 *mu* of land will be reallocated for the construction of a bigger, much more capacious water reservoir, which is supposed to provide fresh water to the community and resolve the scarcity, if not for good, at least temporarily. Water is literally, in PBP, a commodity for which people lose their houses and livelihood.

How did the community confront the increasing scarcity? In the late 1970s, under the pressure of already diminishing water availability, farmers in PBP organised autonomously to build six underground water tanks, made of mud and concrete, around the village's collective fields, so that farmers could collect rainwater and use it for irrigation. Following the loss of fertility caused by deforestation and inadequate agricultural practices, farmers abandoned the water tanks, now seldom providing enough water for paddies, and turned to short-term

12 Pluviometric data were collected at the Huize Weather Station.
13 A water cellar is an underground container used to store rainwater.

vegetable gardens, profiting from governmental campaigns supporting mulching (*dimo fugai*) or, as a substitute, the use of plastic-film (*bomosu*) to control water evaporation. Much of the village land thus changed to "dry land" (*gandi*), where the labour involved in adding water became secondary, and farmers started becoming less preoccupied about irrigation water than about drinking water. This is when Master Du and his outstanding dedication to the village water facility enters the picture.

When Mr Pu introduced me to Master Du, the leader of the PBP WUA, the preliminary remark about him was, "This man has been tremendously successful in his quest for improving his fellow villagers' livelihood and the amount of water they can make use of. Indeed, there's only one village in the area which has an operative Buddhist shrine, and this is it. Master Du's decision to reopen the shrine has been rewarded: the gods are watching upon his association". Only later on I discovered that the local WUA, as such, officially lasted only a couple of years, and that the entire effort of sustaining water access to the village was accomplished well before the government decided to put its own hat on Du's accomplishments, recasting his enterprise as part of the government-sponsored introduction of WUAs started in 2008. By then, Master Du and PBP villagers' water management practices had already been considered exemplary (*mofan*) for quite some time. Unsurprisingly, it was not villagers 'participation' which secure their water supply. Rather it was Du who used his position and connections to divert into PBP a scheme for drinking water, which was then under way.

Being informed by the older management practices, PBP's WUA was chiefly preoccupied with delivering water to households, where it would later be used either for domestic use or to water the households' private plots. With the construction of the water supply network in the 1990s, one portion of the Plateau, facing eastwards, was cut off from the delivery, thereby creating many "have-not" families demanding, sometimes violently, their fair share of water. The PBP's association – at the time still not a WUA – was a response to this problem.

How did the association arise? Master Du, a 57-year-old Han man, living a frugal life with his daughter-in-law and grandson in an old mud-brick house flanking the village's basketball court, was its architect, as well as an important figure in the area. With vast political experience behind him, Master Du had a long history of "leading the masses". Many talked about him as a self-made man, capable of "great deeds" (*nenggou dashi de ren*) and as a confident leader (*zishi*), sprung from a social context plagued by theft and bereft of capable men. I met with Du many times during my stay, and I was hosted in his house several other times. One day, sitting in the main room of his first son's abandoned house in the village, we discussed extensively the history of the local WUA and his part in creating it:

> It's been 25 years since I started managing water in this area. I did it on my own, for free, and I was pretty good at it. Then, one day, the government gives a delegation from the people (*qunzhongdui*) the right to collect water fees in the village. This was during the '90s. To collect fees was a paid position, 100 *renminbi* per month, 1300 per year. This group of people came from the eastern side of the Plateau, but they didn't have enough 'face' (*mianzi*) to do the job properly. Every time they had problems collecting money, I was the one they turned to: "Master Du, could you please help us with this particular case here...Master Du would you mind helping us collecting the loan that we gave to..." and so forth. Eventually I ended up doing "officially" what I already did for free […]. At the beginning of the 2000s water-shortage started biting, and the idea of establishing a "people's organisation" (*minjian zifa zuzhi*) for managing the shortage

> locally came to my mind. Having gathered around 60 household managers (*dangjia*), most of them young men but also two female, we decided to write up the association's constitution (*zhangcheng*). […] The WUA (*nongmin yongshui xiehui*) proved to be difficult to organise at first, and later on, to keep it operational has been even more challenging. Resolving the issues arising from the local reform of water management was key. Prior to the county-level introduction of WUAs into small hamlets (*xiaozu*) in 2008, there was no comprehensive regulation in place, but instead an array of different objectives pointing towards providing drinking water to every single household, which had at its centre the role of the community leader (*weihu lingdao hexin*). This is a practice where everybody takes care of the everyday management of water [...] by keeping with the standard set by the leader (*mofang daitou de zuoyong*). […] Once the WUA was established, we just kept things going on as previously, making sure that everyone received their share of drinking water. The WUA was just another name for our association. The government came in, attracted by how we managed demand (*yaoqiu*) and supply (*gongying*) here, and since all these water-related governmental projects were being implemented, they thought "why don't we grasp the white cat (*zhua baimao*)?"[14].

As Master Du told me, his "organisation" was a political response from the community to an acute problem of access to fresh water. As with the SG case, its structure is not devised to encourage farmers' participation, but revolves around household "representatives". In PBP, every household manager, representing the family economic activities[15], was summoned to draw up the organisation's constitution, a contract between households making the mutual responsibilities between families (*duiying zeren*) public. The organisation's meeting are ad hoc, being announced only when members experience a particular problem with water supply, or in order to coordinate works related to the construction of water cellars and the like. Again, in PBP, local political habits have been reworked from within the local WUA, making of it something akin to a legal fiction.

In terms of the *design principles* we considered in Part I, it should be noted here that the PBP WUA hardly fulfils all of them. Having a pyramidal structure, with an electoral base far from village-inclusive, Du's association resembles more a traditional village level organisation then a democratic forum. Moreover, it was not clear whether Master Du's monthly salary as fees-collector came directly from the association's budget. Since Master Du was also the village Party Secretary, how could one know whether the money collected this way was used to finance the local WUA or otherwise? Likewise the resolution of disputes over access: of the many conflicts Master Du said he had negotiated, many did not involve enforcing punishment. Particular violations, for example intentional damage to the supply network or its diversion for individual gains, where punished with eight years of "denied access" (*jinzhi jietong*) under the "constitution" drawn up by Du and the other household managers. According to Du, however, this sanction was never applied, on the ground that violations were often done out of necessity (*xuyao de*) rather than with malicious intentions (*huaixin*). Instead, something similar to Group Leader Zhang's moral suasion, was carried out by Du:

> In a particular point in the village, there once stood a communal tap (*longtou*) set up with

14 In relation to policy implementation, Deng Xiaoping famously stated that "no matter whether it is white or black/ It is a good cat so long as it catches mice (*guan baimao heimao huizhua shu jiushi haomao*)", meaning that, in politics, it is not the ideological conviction foregrounding policies that is important, but rather their effects. The party officials in Master Du's story clearly refer to Deng's motto, opting to support Master Du's association as long as it conforms to the Party's political objectives.

15 A household manager (*dangjia*) in the traditional Chinese household is a different figure from the household's head, that is, its senior member (see Cohen 2005: 146-47).

> funding from the state. We had specific usage rules for its correct use: for instance, you could not let the tap run for more than three hours a day. There was one particular household taking more water than allowed, for its own domestic use and for the fields. They took three days of water out of the tap. The day I discovered they were doing so, I got really upset. "You got this completely wrong", I told them, "You snatched (*wangqu*) water from the tap and seriously harmed the whole community. Do you realise that everyone's problem is anyone's problem (*zhongren de wenti daodi shi geren de wenti*)?" They were served with a curt reprimand, suggesting they publicly apologise to the village. Three days later, they came to me, admitting they were wrong.

This point confirms my previous reading of the SG data. PBP villagers proved able to organise in "sustained collective action" to produce drinking water access for the whole community. They managed to do so also thanks to the active, organisational role played by Master Du, a man known for his moral standing and commanding wide respect. Many commented upon their own involvement in redistributing water by referring to the moral example set by Master Du. "We want to live up to his example," one of the few young men in the community said to me. Moreover, the relationship villagers had built with Du, allowed him to regulate household behaviours in ways potentially conducive to saving the resource stock, as in the case of the communal water tap. That is, in PBP, one finds evidence of "successful collective action" achieved not through the implementation of a WUA but based on local ways of managing water and on a local concept of authority.

In fact, despite its many problems, PBP's water supply was far from exhausted. Participant observation confirmed to me that water in the village was available and that villagers individually took care of interruption in the delivery by redistributing water between households or by organising time-constrained rotation in accessing the communal tap. Villages as remote as PBP do usually face severe limitation in the availability of water. Unlike many other rural communities in Yancong, however, here a "caring leader" had relentlessly fought for the well-being of his own community, to the point of bringing the mighty South-North Water Transfer Project to its village.

Master Du once told me his objectives as the leader of PBP's original water sharing network:

> In 1991, I became the superintendent of the Plateau: my aim was to rectify the condition of extreme poverty which affected my home township. I said: "Fortune does not fall from the sky: a comfortable life can't be achieved, unless one tries to" (*xingfu bu hui cong tian jiang, xiaokang shenghuo zhengbulai, yaogan*). While I was in office, we wished some of our needs and desires could be realised: we wished we could get water, get electricity, get a road; we wished to be better off. In the community everybody aspired to a good society, to an environment where one could live a good life and enjoy it (*lianghao de shehui fengshang, renmin you ge anju leye de huanjing*). Over the years, I made all these wishes come true: water, electricity, road, eventually, with blood and sweat, even money.

In this last interview, Master Du brings home one final point of the argument presented in this paper. PBP's villagers engage in "successful collective action" not with the sole intent of averting water shortage. Organising and taking action together is the mean to achieve a "good society", or as SG's villagers put it, achieve "good human relations". Water for all is here conceptualised as one of the component of a life one "could enjoy". In the next and final section of Part II, I will oppose the cases of SG and PBP to another village association I studied during fieldwork. This has the aim of showing that *rewarding human relations* and

caring leaders are important factors in the production of both "sustained" and "successful collective action". Getting a WUA design right, in the sense of writing the perfect set of regulations and training its members accordingly, is not enough. It is the enactment of the association by its members according to locally valued ideas of leadership and of mutual support, that fuels the collective capacity of sustainably managing a common resource.

The Bamboo Forest Mouth WUA

Bamboo Forest Mouth (BMF) is an administrative village (*xingzhengcun*) located on the partially paved road that goes from Yancong Township southwards to Felicity Township. As an administrative village, BFM gathers together a series of natural villages (*zirancun*) and village sections (*xiaozu*) which were once clustered in two different production brigades (*shengchan dadui*) under the people's commune system. Today, BFM oversees 23 smaller villages and 7,276 people. Its economy is based mainly on smallholding farming and migrant work: almost 99% of the households depend on less than 10 *mu* of land[16], while 42.6% of the workforce are employed in non-agricultural occupations outside the community. The main crops are maize, rice, *houttuynia cordata* (*yuxingcao*), red pepper, lima bean (*candou*) and potatoes[17].

What matters in the context of our present discussion is the village irrigation infrastructure: more than 62 km of concrete channels (*guandao*), ditches (*qudao*) and small drainage gullies (*shuigou*), which cross the 1890 *mu* of flat and hilly land in the community[18]. Water mainly comes from the Great Leap Forward Reservoir. The infrastructure, during the time of fieldwork, was a system in constant mutation. New branches were under construction, while others were falling into disuse at such a pace that even the experienced staff at the local Water Bureau found it difficult to cope with the changing practices.

Along with PBP, BFM's farmers were coming to terms with three long years of drought. The crisis was such that Yancong's Water Bureau very often had to intercede with the reservoir authority, claiming ad-hoc distribution of irrigation water for the village or augmenting the distribution network and its carrying capacity. The official statistics for the whole area report 15,000 persons hit severely by water shortage in 2012, and 16,000 cattle deaths. Since 2010, 39,225 *mu* of land have become unsuitable for agriculture[19]. Of the many geographical features, one in particular heightens the effect of scarcity on the BFM community: plots and households are very scattered. A series of channels built in the past few years to overcome this particular problem, however, was left dry most of the year, increasing the perception of widespread shortage and instilling distrust towards the government. Water shortage for BFM villagers was an event intertwined with the self-evident reality of government failure.

In what ways did the perceived bad governance affect the community? Agriculture here (and everywhere) is a time-specific activity, with the major sowing season occurring between

16 Note that the official data do not allow for reporting less than 10 *mu* of land. In a survey carried out by the author among 30 BFM households in November 2012, the mean amount of land belonging to the household was 3.02 *mu*. Only one family reported owning 10 *mu* of land.

17 BFM Village Committee data.

18 WB data. The main ditches are: *dongzhigou* (water flow: 0.5 m^3/s; lenght: 21 km); *nanzhigou* (0.5 m^3/s; 17.32 km); *dianwei dongzhigou* (0.5 m^3/s; 8 km); *dianwei nanzhigou* (0.5 m^3/s; 7.5 km); *xiaopo dougou* (0.2 m^3/s 1.5 km); *huchanggou* (0.3 m^3/s; 7 km).

19 Data from Yancong Water Bureau Internal Documents.

March and June – a period called Great Spring (*dachun*) – and between September and November, the Small Spring (*xiaochun*). It was the concomitant lack of water with its scheduled allocation that convinced many that what was affecting BFM was not solely drought but bad governance (*mei you ren guan*). "It is not just that water is in shortage, it is that there's none when we need it (*xuyao jiu meiyou*)!" many remarked on the eve of the upcoming rice-planting season. Another related problem, this time with drinking water, sprang from how electricity was brought to the community in the 1980s. For my informants in BMF, before the construction of the local hydroelectric station, drinking water abounded. Then half of the village was cut off from the scheme, as water coming from a local spring was diverted and channelled through the electricity station. The demands for a better use of water became urgent, and many in the government felt compelled to address the mounting requests for fairer allocation.

In 2008, BFM's Village Committee came up with a constitution for a new association, the BMF Irrigation Water Users' Association (*nongguai yongshui xiehui*). The association's constitution was written by the former head of the Huize Water Bureau, an expert on WUAs who had also published in the relevant Chinese academic journals on this very topic. In Table 3, I compare the BMF WUA constitution with the World Bank and Chinese expert's indications as to how to craft a functioning WUA.

Table 3

Chinese WUA principles (based on World Bank 2010 and Wang et al. 2010)	Constitution of Bamboo Forest Mouth Village WUA
Legal status and participation	Legal status (Art. 3) and participation (Art.13)
Fees collection and full cost recovery (management and delivery)	Fees collection (Art. 32) and full cost recovery (Art. 33 and 34)
Rules crafting and enforcement	Rules crafting (Art. 20) and enforcement (Art. 23)
Dispute resolution	Dispute resolution (subcontracted to the VC)

Unfortunately, it is not at all clear whether the association worked the way prescribed by its constitution prior to my arrival. In fact, during my stay, the whole association was little more than a plaster plate hanging from a wall in the VC Building, where its office was supposedly located. No meetings were ever called. There was no direct involvement of the community whatsoever, no supervision of canals, not even during sowing season. Ultimately, no vigilance on the levelling of rice paddies was carried out. The entire institutional design boiled down to one main figure operating in some capacity under the WUA framework: Deputy Director Yu, the WUA's alleged tax collector (*chuna*) and a member of BMF's VC. We should consider the Deputy's work briefly to understand how the BMF WUA came to be understood as a fraud (*pianzi*) in the community.

A few times during fieldwork, I managed to assist Deputy Director Yu and some of his associates in dealing with complications ensuing from the delivery of water. Yu, an elusive man working also as a water expert in the local VC, was at best unresponsive to villagers'

complaints: when arguing got serious among contenders, or between him and the locals, he usually stepped back, letting others with more persuasive powers reduce the acrimony. While many of his VC colleagues were forthcoming in addressing the need for local officials to "step in", setting examples (*daitou*) for the people and confront issues of accountability in an overt manner, he often refused to admit there were such things as disagreements between officials and the locals: "problems are among the people, not with us".

Once, when commenting on how the VC's chairman risked getting himself beaten up just to calm down a violent fight between a young married couple, he added humorously: "It is a shame you did not get killed, boss, I'd be chairman now, and – you bet – I wouldn't get myself involved in such nonsense (*chepi*), you rest assured!". Deputy Yu was obsessed with climbing his way up within the Party, many muttered, with little care for what the job actually entailed.

Already in his fifties, Yu was too old to make a career away from Yancong, all his hopes resting on local politics. The "water sector" was a privileged arena precisely for jump-starting a career, in that collecting water fees in a context of loose administrative control allowed him to gain control over state funds. As I discovered later on, the Deputy was still collecting irrigation fees based on land-extension (15 *renminbi* x *mu* x year), rather than by actual water use. This was contrary to many state and provincial regulations[20].

While BMF lacked the technology for measuring irrigation water use, Deputy Yu – according to many BMF villagers – seized the opportunity to put his hand in the tax till, embezzling more money than he would have embezzled had he levied water tax based on actual consumption. The community was using less water according to its farmers, but Deputy Yu was forbidding them to gain from their water saving strategies. Moreover, little money was spent on salaries, as Yu was apparently the WUA's only active member. Because of that, his WUA should have been thriving, awash with money. Did he then proceed to invest that surplus in the maintenance of BMF's water infrastructure? His constant requests to the Yancong's Water Bureau for external help with the maintenance of the BMF irrigation network revealed, despite fees collection, that not so much of the budget was spent on this task either.

What did Deputy Yu do with the money instead? It is difficult to say, even if some clues suggest he used the allegedly embezzled funds to acquire supporters for the upcoming 2013 Village Committee and Yancong's People Congress elections[21]. Coming from a hugely influential family in Pu Family Village, Yu was acquiring prestige in spite of malpractice, a fact that many BMF natives were aware of and spoke of bitterly. For them, Deputy Yu had seized the money with the intent of purchasing villagers' votes so that he could be elected to a better-paid position within the local government.[22]

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20 See the 2002 "Water Law of the People's Republic of China" (Order of the President No.74), Art. 49 (online at: http://english.gov.cn/laws/2005-10/09/content_75313.htm), and the 2005 Yunnan Province Implementation Protocol, Art. 18 (online at: http://baike.baidu.com/view/4309097.htm).

21 *Zhen Renmin Daibiao Dahui*. The Township People Congress is a elective legislative body of the PRC. Within the limits of their authority as prescribed by law, they adopt and issue resolutions and examine and decide on plans for local economic and cultural development and for the development of public services. Also, the Congress elects and has the power to recall governors and deputy governors, or mayors and deputy mayors, or heads and deputy heads of counties, districts, townships and towns.

22 As I later discovered when I witnessed the 2013 elections during supplementary fieldwork, Deputy Yu was

The level of trust Deputy Yu commanded in his community was appalling. A survey carried out by me and two assistants among thirty households in two different sections of BMF Village reported that 96.6% of the respondents believed that governance over the irrigation network was "not at all satisfactory" (*feichang bu manyi*). Moreover, almost nobody actually knew about the BMF WUA, or when it was founded: "They come only when there's money to collect, how am I supposed to know if there's an association for that?" argued one of the respondents. In Pu Family Village, discontent towards Yu was also present because he was seen as an "uncaring" (*buyuguanzhu de*) group leader, as somebody who did not use his powers and authority for the sake of the community. When he was to select the construction team to which a particular maintenance job in the village had to be given, he usually subcontracted it to outsiders, when everyone else expected it to be given out to people belonging to the village community. This generated a lot of resentment among Pu Family villagers, as infrastructure contracts (e.g. repairing water channels) meant a huge sum of money being poured into the village.

During my stay, many referred to a 40,000 *renminbi* contract Deputy Yu had the "insolence" (*houlian*) to give to his own circle of friends, regardless of the fact that the community had expected otherwise. Neither were his monitoring activities immune from recriminations: during sowing seasons, farmers were asked for up to 100 *renminbi* per paddy, if they wanted water to be delivered to the fields. While Yu did not actually have the power to stop water from flowing, many feared his retaliation had they not complied by paying the undue exaction. In sharp contrast with what happened with Master Du and Group Leader Zhang, few trusted Deputy Yu and most felt that the local WUA could hardly give them anything good.

The story of this last association shows that collective action on water does not come easily. In the Yunnanese countryside, villagers show that they are able to tackle the problem of scarcity by devising local ways to even up gaps in water distribution. They also engage in water conservancy on the basis that the "good society" – where living is enjoyable – is one where water needs to be available to all. This notion implies that one ought to refrain from wasting water, so that future generations of local villagers may live in an equally enjoyable community, where people "mutually care" for others. To sustain and make possible this type of community, SG and PBP's villagers organise themselves in solidarity networks and give themselves rules to maintain the communal source of water. "Sustained" and "successful" collective action are achieved here, but no thanks to the top-down introduction of allegedly emancipatory associations. This is because my informants prefer local ways of organising, including the notion that cooperation is elicited by "exemplary" (*mofan*) and "caring" (*guanxin*) leaders. Because Deputy Yu was widely seen as the negative mirror image of such a leader, no one trusted him or participated in his association. This was regardless of the fact that the association's constitution enshrine all the institutional principles a well-functioning (i.e. conducive to "successful collective action") WUA should be based upon.

In the conclusion, I will address the further issue of promoting "successful collective action" on the Chinese water problem. In particular, I will point at where both Chinese WUA supporters and my own interpretation of successful management fall short of what is actually

elected as a People's Representative of the Yancong People's Congress. Party Secretary L., also running for the same position, only ranked second, failing to seize a congress seat.

needed for this endeavour.

Conclusions

In this paper, I have considered the introduction of three WUAs in an agricultural community in south-west China. The ethnographic data presented suggests that WUAs are being imposed upon a context rich in "customary" solutions to the management of fluctuating water availability. These are informed by expectations of what people's representatives should do and according to what principle they should relate to others. My informants show themselves to value specific forms of cooperation – based on trust and mutual care – which are ultimately not considered sufficiently by the proponents of the WUA model in China. While those arguing in favour of WUAs and I both move our analysis of "successful collective action" on water from Elinor Ostrom' work, the former seem to neglect the central role that Ostrom gives to issues of trust (e.g. Ostrom 2010: 21). Rather, WUA supporters seem to think that water efficiency is engendered by the consistent application of a reproducible institutional blueprint, even though the evidence is not entirely supportive of their position.

In a recent collaborative work (Wang et al. 2010), Wang Jinxia demonstrates statistically that the type of WUAs introduced by a World Bank project in Gansu Province, north-west China, is more successful in saving water than the "Non-World Bank" WUAs in her dataset. This claim is problematic on many accounts. For one, it relies on proxy measures of "sustainability" (e.g. water use per *mu* of land against crops yields) that, by the authors' own admission, "requires caution" (2010: 677). Moreover, some of the data they present actually suggest that villages where WUAs operate according to the "dogmatic" Ostrom model use more water to produce greater yields. This figure would rather suggest that the WUA model introduced in China is actually boosting agricultural production rather than saving water, as at least one other study confirms (Liu J. et al. 2008). This proposition could lead to over-harvesting the resource, and thus to squandering Ostrom's own decades-long effort to understand the issue of how to govern common resources sustainably.

In Part I of this paper I have already mentioned issues relevant to measuring "sustainability", and therefore the position taken by Wang and collaborators (i.e. supporting the introduction of WUAs with ambivalent data) should not be taken as a factual error. The problem is that WUA advocates tend to produce circular arguments to support the introduction of WUAs. This happens not only with Wang's paper (2010: 675), but whenever advocates of "participated" and "empowering" grassroots institutions demonstrate that these institutions are successful by measuring achievements not in terms of water conservancy, but of members' participation turnouts (see Mosse 2008: 94). My findings suggests that "successful collective action" is not achieved through engineered participation but via context-specific ways of attributing responsibility and building trust.

As has been noted elsewhere (Plummer, Taylor 2004: 68), the issue of participation is not salient in many Chinese villages. Representatives are rather asked to live up to villagers' expectations, reciprocating trust with good leadership. In doing so, my analysis follows recent works in the analysis of how welfare provisions are distributed in local Chinese communities (Tsai 2007) and how valued human relations sustain the management of the commons (e.g. Theesfeld 2004).

Yet, both social engineers of the type promoting WUAs and "trust-huggers" such as myself, might fall short of what is actually needed to achieve a progressive water politics of the type required to save Chinese and global common waters.

In developing the argument of this essay, I followed David Mosse's point that collective action also has symbolic meanings (1997). Mosse proposes an approach to collective action that is not premised on the idea that these have to serve merely material ends. In my field site, the stewardship of the common water is often realised within a "traditional" political system which stresses individual responsibility, but also trust in the power of hierarchical structures[23]. Trust, good leadership and rewarding human relations is key to the people who populate the WUAs of Yancong.

However, this type of "sustained collective action", capable of reproducing the conditions for the fair distribution of water within the network of people who engage in it, does not amount to "successful collective action" for the sake of the shared world. In the paper, I argued that both SG and PBP WUAs prove able to fight against overexploitation. However, my data should be taken to show that such an outcome is most likely the unintended consequence of collective contributions to the well-being of the people one cares for the most. In other words, the sustainable use of water here is not part of an explicit political project to save humanity from self-annihilation due to the mismanagement of nature – only think of the level of water pollution in China.

I submit this position to the reader bluntly so that she may be salvaged from the view that water politics lies in the realm of individual commitment and good-heartedness (see Baland, Paltteau 1996: Ch10). I should also warn that, when it comes to "empowering" marginalised individuals within traditional water networks themselves, trust and leadership do not suffice. Lu Caizhen has widely shown for China that, irrespective of whether a WUA is present, women's right to water tends to be neglected, as rural dwellers still see women as undeserving individuals whose needs are incorporated with those of the household head, usually a man (Lu 2008; see also Metha 2001 and Mosse 2003).

Rather, the challenge of producing progressive water politics should not be put on marginal communities nor individuals, who most likely do not possess either the capacity or the willingness to produce global changes in the management of common waters. This is even more true in light of what I shall describe in the next chapter, where what has hitherto appeared as a minor problem in the daily circulation of water becomes an insurmountable obstacle: trusting someone to help you when in need.

23 Note that in David Mosse's study of WUAs in Tamil Nadu, collective action was not "dependent upon trust generated through interactions and associations but is found upon relations of caste power, graded authority, personal patronage and the redistribution of resources (as bribes and payoffs)"(2008: 98). I believe that Mosse's qualifications would suit my own study of WUAs, though do not suggest, as he does, that these sets of relationships are ultimately exploitative.

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