

Ghosts in the shell: The promises of water users' associations and the double life of Elinor Ostrom's design principles in rural China

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Abstract

Water is a matter of great concern for the PRC, especially for its agricultural sector, besieged by shortage, soil degradation, and raising production costs. Because of this, Water Users' Associations (WUA) are garnering domestic attention as a cost-effective solution for growth-compatible sustainability. These associations are inspired by Elinor Ostrom's design principles for the management of common resources. Through long-term ethnography among various stakeholders of the Yunnanese water sector, this article challenges the notion that the implementation of Ostrom-inspired WUAs in the Chinese countryside is fulfilling the associations' accompanying promises of sustainable growth. Instead, this study finds that Chinese WUAs proliferate thanks to pre-existing promises of collective prosperity. North-eastern Yunnan is rich in social arrangements for sustainable water management that predate the introduction of WUAs and make their ordinary operations possible. WUAs proponents conveniently blame the failure they see in Ostrom-inspired organisations on said arrangements while retaining faith in Ostrom's design principles. An ethnography of Ostrom-inspired associations can salvage Ostrom's intellectual project from the prescriptive readings of development planners and her critics. Yet, it also shows that alternative sustainable arrangements in human projects for the environment may become less plausible once captured by the prescriptive episteme of development planners.

Keywords: China, water, WUA, Ostrom, sustainability, development

Résumé

L'eau est un sujet de grande préoccupation pour la RPC, en particulier pour son secteur agricole, assiégé par le manque d'eau, la dégradation des sols et la hausse des coûts de production. Pour cette raison, les Associations d'Usagers de l'Eau (WUAs) reçoivent de plus en plus d'attention à niveau national en tant que solution rentable pour une durabilité compatible avec la croissance économique. Ces associations s'inspirent des principes de conception d'Elinor Ostrom pour la gestion des ressources communes. Basé sur un travail ethnographique de longue haleine auprès de différents acteurs du secteur de l'eau du Yunnan, cet article remet en question l'idée que la mise en œuvre dans la campagne chinoise de WUAs ostromiennes remplit les promesses des associations d'une croissance durable. Au lieu de cela, cette étude constate que les WUAs chinoises prolifèrent grâce aux

¹ Dr. Andrea Pia, Department of Anthropology, London School of Economics, UK. Email: [a.e.pia "at" lse.ac.uk](mailto:a.e.pia@lse.ac.uk). Acknowledgements: This paper is dedicated to Master Du, who passed away in March 2022. Fieldwork was supported by the Chiang Ching- Kuo Foundation under Grant DD018-U-13, the Chinese Scholarship Council, the Universities' China Committee in London, the Jack Wright Memorial Trust, LSE Rosemary and Raymond Firth Award, and the LSE Research Infrastructure and Investment Funds. My sincere gratitude goes to the managing editors of *JPE* Casey Walsh and Simon Batterbury for their continuous support and constructive feedback. I wish to thank six anonymous reviewers for their insightful and helpful comments on previous versions of this article. I am also indebted to Wang Yahua, Zhang Minghui, Agustin Diz, Geoffrey Hughes, Giulia Zoccatelli, Wu Di, Nick Long, Luke Heslop, Frances Dalton Cleaver, and the participants to the 'Governing the Commons in China' panel at the 16th Biennial Conference of the International Association of the Study of the Commons in Utrecht for their comments on previous versions. I am not aware of any financial interest or benefit that has arisen from the direct applications of my research.

promesses préexistantes de prospérité collective. Dans le nord-est du Yunnan il existe de nombreux arrangements sociaux antérieurs à l'introduction des WUAs, qui rendent possibles les opérations ordinaires de ces dernières. Les partisans des WUAs attribuent opportunément auxdits arrangements l'échec qu'ils constatent dans les organisations inspirées par Ostrom, tout en conservant la foi dans les principes de conception d'Ostrom. Une ethnographie des associations ostromiennes peut sauver le projet intellectuel d'Ostrom des lectures prescriptives des planificateurs du développement et de ses détracteurs. Pourtant, cela montre également que les arrangements durables alternatifs dans les projets humains pour l'environnement risquent de devenir moins crédibles une fois capturés par l'épistémè prescriptive des planificateurs du développement.

Mots Clés: Chine, eau, WUA, Ostrom, durabilité, développement

Resumen

El agua es tema de gran preocupación para la República Popular China, especialmente para el sector agrícola el cual, es asediado por la escasez del líquido, la degradación del suelo, y los crecientes costos de producción. Por ello, las Asociaciones de Usuarios de Agua (WUA) están llamando la atención nacional por una solución rentable para una sostenibilidad compatible con el crecimiento. Dichas asociaciones están inspiradas en los principios de diseño de Elinor Ostrom para el manejo de recursos comunes. A través de etnografía de largo plazo con varios actores clave en el sector hídrico de Yunnan, este artículo discute la idea de que la implementación de WUAs inspiradas en Ostrom en el medio rural chino, cumplen las promesas de acompañamiento del crecimiento sostenible que prometen las asociaciones. En cambio, este estudio revela que las WUAs chinas proliferan gracias a promesas preexistentes de prosperidad colectiva. La parte noreste de Yunnan tiene múltiples acuerdos sociales para el manejo sostenible del agua, los cuales preceden la introducción de las WUAs y hace posibles sus operaciones normales. Convenientemente, quienes proponen las WUAs, culpan a los acuerdos sociales mencionados por las fallas que detectan a las organizaciones con inspiración en Ostrom mientras conservan su confianza en los principios del diseño de Ostrom. Una etnografía de las asociaciones inspiradas en los principios de Ostrom puede salvar de sus críticos el proyecto intelectual de la autora, además de proteger estos principios de lecturas prescriptivas por parte de los proyectistas. Sin embargo, también se muestra que acuerdos alternativos sostenibles en proyectos humanos para el medio ambiente pueden tornarse menos plausibles una vez atrapados por la episteme prescriptiva de los planificadores de desarrollo.

Palabras clave: China, agua, WUA, Ostrom, Sostenibilidad, Desarrollo

摘要

由于水资源短缺、土壤退化以及生产成本上升等问题，用水是中国政府，尤其是中国的农业部门，一直以来都非常关注的问题。鉴于此，作为一种既可以通过削减成本来提高效率，又可以保证农业水资源可持续发展的解决方案，农民用水者协会 (WUAs)正在不断地吸引中国内部相关部门和群体的关注。创建和设计农民用水者协会的灵感源自于埃莉诺·奥斯特罗姆 (Elinor Ostrom) 的公共池塘资源设计原则。基于笔者对云南水务部门各利益相关者的长期田野调查，本文挑战如下观念：即，在中国农村，对奥斯特罗姆式用水者协会政策的贯彻与实施可以实现其所承诺的水资源的可持续性发展。笔者的研究表明，当地农民用水者协会数量的激增恰恰是因为这些预先存在的集体繁荣承诺。笔者发现，在引入农民用水者协会管理机制之前，在可持续水资源管理方面，云南东北部地区不但已经存在着大量的民间管理经验，而且这些丰富的民间管理经验承载着当地日常水资源的顺畅运营。当奥斯特罗姆式农民用水者协会遭受挫败时，这一组织方式的支持者往往会“很方便地”把他们失败的原因归咎于上述这些民间管理经验，依然对奥斯特罗姆的设计原则保有信心。笔者建议，对奥斯特罗姆式农民用水者协会的田野调查不仅可以揭示项目发展规划者（或批评者）在对奥斯特罗姆原旨的规范性解读过程中产生的误识；更重要的是，它也表明，发展规划者的这些误识，一旦被实施，其他的以可持续性发展为目的而确立起来的人类环境项目皆会变得不那么“可行”

关键词: 中国、水资源、用水协会、奥斯特罗姆、可持续性、经济发展

1. Introduction

For a couple of years, the man I will call Master Du led the Heimo Village Water Users' Association (*nongmin yongshuizhe xiehui* 农民用水者协会, henceforth WUA)². The association was established in 2008 to manage the village's domestic and irrigation water supply. Often described as the last heir of the local red royalty – his grandfather a survivor of the Long March – Master Du's vision and personality were of great inspiration to the association's members. This WUA counted seventy households, mostly headed by women farmers in their forties who stubbornly inhabited this underdeveloped, water-stressed, and increasingly environmentally degraded part of northeast Yunnan Province, People's Republic of China (PRC). True to his public image as a frugal party cadre, Du lived a simple life with his daughter-in-law and grandson in an old mud-brick house flanking the village's basketball court.

One day in 2012, as we ambled down the winding road to the village's only Buddhist shrine, our conversations veered nostalgically to his migrant son and the prospects of his eventual return to the village:

Heimo villagers are worried that, once they have passed away, their migrant relatives will forget about them. Uncared for, they will turn into hungry ghosts (*egui* 恶鬼), forever wandering this "uninhabitable" place (*niaobulashi jibushengdan* 鸟不拉屎, 鸡不生蛋, lit. 'birds don't defecate and hens don't lay eggs'). 'How do you respond to that?', I asked. 'Well, I promise them that if we work hard enough to make our village a happy place again (*anju leye* 安居乐业), our sons may return one day.'

This article deals with the interdependent promises of future prosperity that animate water-related development projects in contemporary China. The introduction of participative associations for the management of common resources (Brosius, Tsing & Zerner 2005; Mosse 2013: 229) – of which WUAs are one type – responds to China's state of environmental crisis and embodies national promises of sustainable economic growth through citizen mobilisation. However, the promises that come to inhabit and animate these very associations in the everyday respond to a different logic, one overshadowed by images of hollowed-out communities and their residents' tormented afterlives. At stake here are not the prospects of sustainable growth but that of a differently organized future premised on the nurturing of kinship and ties to place, and foreshadowing a state of collective prosperity not entirely captured by current econometric measures.

What makes the competing promises of future prosperity invoked by the introduction of WUAs appealing to their proponents and members, and conducive to the proliferation of these associations in contemporary rural China? My discussion – part of a larger ethnographic project involving three years of fieldwork within the Yunnanese water sector (Pia 2017a, 2017b, 2017c, 2018) – moves away from evaluating the ambiguous results that many WUAs seem to be yielding in the country. Rather, I follow Abram and Weszkalnys in emphasising the "imaginative aspect of planning", asking what developmental plans "do", as they "make promises about the future" (2011: 8). This article builds on their insight to explore the work of developmental promises – what perspectives and imaginaries they contribute to conjuring or else side-lining – in contemporary Chinese institutional practices of water management.

First, I will probe into development planners' stated reasons for supporting WUAs. An environmentally concerned technocratic proposal for 'lite' water management is currently gaining turf within China's ideological struggle over the right recipe for sustainable development, a debate that today falls under the rubric of "ecological civilisation" (*shengtai wenming* 生态文明). In this context, WUAs become comparatively appealing for what they promise to achieve at a limited cost. The idea of WUAs as an institutional fix for economic growth-induced water issues derives from Elinor Ostrom's Nobel prize-winning work on cooperation and co-production in resource management. By explicitly engaging with and adopting a prescriptive approach to Ostrom's institutional economic ideas, the WUAs proponents surveyed by this article maintain faith in the efficacy of these associations despite ample evidence to the contrary, and without considering the extent to which Ostrom's theory of cooperation clashes with how it is operationalised within WUAs.

² Due to confidentiality agreements, all personal names and toponyms appearing in this text have been anonymised.

Second, in dialogue with Elinor Ostrom's commentators, I explore what else the institutionalisation of WUAs does, other than allegedly transforming the everyday administration of water. In northeast Yunnan, WUAs did not seem capable of fostering autonomous management, nor conjuring cooperation out of thin air. Rather the implementation of Ostrom-inspired WUAs mobilised or "salvaged" (Tsing 2015: 63) pre-existing political practices and epistemologies that contained differently-oriented promises of future prosperity and not growth, as I shall argue.³ Interestingly, these promises not only fail to map onto those of sustainable growth engineered by the introduction of WUAs, but at a second glance, they appear to be even more compatible with a non-prescriptive reading of Ostrom's work. As such, in this article, I do not refute Ostrom's work but show how a prescriptive reading of it negates Ostrom's insights.

What follows is neither a specifically Yunnanese, nor a uniquely Chinese story. Rather, it is the story of how development planners' ascription of ineptitude, dysfunctionality, and failure onto the subjects of development inevitably shapes the practice of the international water sector, and more importantly, the environmental futures this practice points toward (Venugopal 2018: 238). Taking on the question of what the broken promises of development 'do' in context, this article argues that, in the reforming Chinese water sector, the discourse around the institutional life of Ostrom-inspired WUAs conceals, but also inverts, the promises of future prosperity which Yunnanese rural residents keep on articulating and are mobilised by, as well as that of the intellectual legacy of Elinor Ostrom herself. Whereas WUAs' proponents attach failures to institutional actions that deviate from the prescriptive model they are intellectually invested in – one that decouples economic growth from sustainability – this article materialises the aspirations of collective "success" haunting ordinary WUAs' members in the execution of their quotidian water management tasks (Mosse 2003: 13).

My analysis is based on twenty-four months of participant observation in three WUAs between 2011 and 2018, involving: attendance at several board meetings; repeated visits to water development and agricultural project sites; semi-structured discussions with community members; thirty individual and focus group interviews with various stakeholders in the Yunnanese water sector; and a quantitative survey about WUAs members' satisfaction. I contrast the explanation given by WUAs proponents' for why WUAs fail to redress defective water management – the existence of inimical customs slowly subverting WUAs' daily operations – with WUAs members' narratives of organisational success, which they attribute to pre-existing customary practices amical to sustainable water management. In conclusion, Ostrom-inspired WUAs can be radically opposed to Elinor Ostrom's own ideals, while 'folk' water practices can closely approximate these ideals despite maintaining radically different institutional underpinnings, epistemologies, and objectives. These objectives however may eventually appear implausible or even damaging to their supporters once repackaged as part of the prescriptive model of Chinese WUAs.

2. The appeal of Chinese WUAs

Ostensibly favouring an autarkic approach to water governance (Nickum, Jia, Moore 2017: 80), The People's Republic of China (PRC) has nonetheless welcomed the deregulation policies that have characterised the field of international development in the last thirty years (Hu 2006; Xie, Jia 2017). In recent years, the international consensus around questions of poverty alleviation and degrading environments – as they come together in the water sector – has crystallised around notions such as the "delegation downwards of risk" to responsabilize local communities, and "the formalistic logic of new institutional economics" to set the course towards global sustainable development (Mosse 2011: 4). The critical development and political-ecological literature have highlighted the reappropriation of deregulation policies by various constituencies "as a

³ The analytical vocabulary I develop throughout this essay builds on WUAs' proponents and members' epistemologies and imaginaries. These often take on the register of the occult and the eerie. Following on recent interpretations of boom-and-bust development in Asia as a form of re-enchantment of the social imagination (Yan H. 2003; Johnson 2013), my aim here is to bring to the fore those invisible forces which, according to the actors of local development initiatives in Yunnan, come together to impinge on and reinscribe the parameters of successful developmental interventions in the country. Throughout rural China failed developmental promises are today widely seen to feed this very reversal of expectations as they unintentionally partake in the slow destitution of rural communities (Driessen 2018). This analytical move helps me delineate a Chinese imaginary of prosperity, which by recruiting the supernatural, deviates from the hegemonic narrative of sustainable growth.

smokescreen for business-as-usual strategies" (Molle 2008:150; Moose 2003: 19) and as a form of depoliticization which pursues greater commercial control over water access through technical means (Budds 2004; Budds and Sultana 2013). Yet, little has been written about the "imaginative dimensions of policy making" (Rap 2006: 1319), especially with regard to the Chinese water sector (but see Crow-Miller 2015). What appealing 'hydropolitical' vision of the future is promised by and facilitates the travel of water development policies (Rogers & Wang 2020)? How are such imaginings meant to be achieved?

Water is a matter of great concern for the PRC. While both industrial and urban uses of water have increased dramatically over the last two decades, it is the agricultural sector – the nation's largest consumer of water – that must grapple with some of the country's thorniest water issues. China has twenty per cent of the world's population but only seven per cent of its freshwater resources. Moreover, its water demand is projected to peak in 2030 (MWR 2016; Zhang C. *et al.* 2020)⁴. Today, a total of thirty-two per cent of China's surface area suffer from quality-based water scarcity (Ma *et al.* 2020). While in recent years the non-revenue water index (water loss) for urban areas has increased to around twelve per cent (Liu, Shu 2018), rural water infrastructure performs considerably worse (Yu *et al.* 2015). In response to the limited availability of running water, commercial water users have turned disproportionately to groundwater sources for irrigation, which, in some areas, is leading to an increasing rate of depletion of local aquifers (Tan, McGregor & Lam 2022). Shallow and increasingly polluted aquifers mean faster rates of soil erosion. In turn, soil loss puts ever-tightening strains on the country's food production chain (Ghose 2014: 92; Nickum 2010). This situation is a burden for China's public finances (OECD 2016: 3).

With regards to the fragilities of the country's water-food nexus, one of the most controversial development promises that is currently gaining traction in the PRC can be posed in the following way: there exists a mixture of technological, infrastructural, financial, and legal tweaks that, if accurately dosed, can conjoin agricultural productivity and economic growth with environmental sustainability (UNEP 2016). Eventually, decades of unrestrained plundering of natural resources have coaxed the PRC into playing a greater role in the global effort to rebalance the ecological footprint of advanced economies, and with it to prolong the political life of the concept of growth (Deb 2009, 165; Princen 2005, 30-47; Smith 2020). But national promises of sustainable futures do not only spare resource-intensive development from critique, they also re-inscribe assumptions about unsustainable water uses in the present while reinforcing livelihood inequalities. For decades, Chinese farmers and rural party leaders – at once the most involved in water management and the most exposed to the consequences of mismanagement – appear to have absorbed a good deal of the blame and the environmental risks linked to water scarcity (Day 2013; Ran 2017; Lord 2020).

Chinese policymakers have, at least since the early 90s, been pushing for a paradigm shift in the regulatory set-up of the country's water economy, with a view of moving it onto a more sustainable, equal, and participatory footing (Moore 2019: 163). By the late 2010s, popular but contested slogans such as 'sustainable development' (*kechixu fazhan* 可持续发展) and 'green development' (*lüse fazhan* 绿色发展) had slowly given way to the more holistic concept of 'ecological civilization', which was enshrined into the country's constitution in 2018. Ecological civilization is a principle intended to counterbalance the environmental excesses of the previous decades via resource caps and demand management (Goron 2018). It is amidst this new policy climate that a WUA coalition started gaining some ground. It did so by arguing that the supply-side policies of the Maoist period – whose spirit they saw perpetuated in the continuous overhauling of the country's hydraulic infrastructure (Magee 2006; Webber, Han 2017) – had reinforced societal and economic incentives to overdraw and pollute, pitting economic development against the environment, especially in the countryside (Lord 2020: 116; Webber *et al.* 2021: 4).

WUAs are legally constituted, farmer-run associations with elected managerial boards that supervise water management at the village level and collect irrigation fees. WUAs, their advocates claimed, are the contextually correct answer to an economic growth-induced nationwide state of scarcity (Wang *et al.* 2016: xvii). In many places around the world, WUAs have already been promoted as alternatives to government management in areas (and irrigation systems) previously managed by the state (Oorthuizen 2004; Rap, Wester

⁴ In response to the water crisis, China implemented the most stringent water resources management system in the world and established the 2020 and 2030 total water use control targets of 6700×10^8 m³ and 7000×10^8 m³ respectively.

2013; Kemerink *et al.* 2013). In these cases, international development planners saw WUAs as a positive break on water demand that could occur at minimal cost to the state, while positively impacting economic growth measures. WUAs are supposed to work by harnessing untapped human capital, relocating managerial responsibilities and capabilities away from (corruptible) local power brokers, and redirecting local funding toward the upkeep of existing water infrastructures (Baland and Platteau 1996: 373-379; Senanyake *et al.* 2015).

A little-commented-upon fact related to the emergence of a pro-WUAs coalition in China is the unexpected role played by the work of the political scientist and Nobel-prize laureate Elinor Ostrom. Over the years, the work of Elinor and Vincent Ostrom has acquired a considerable following in the reformist circles of China's public policy and environmental science community, especially among those based at the CASS and Peking University (Sleebom-Faulkner 2007: 299-301). The Ostroms visited Beijing in 2007 and again in 2011, at the invitation of Mao Shoulong – now Professor of Public Administration at Renmin University – who successfully introduced to national policymakers many of Ostroms' ideas – polycentricity, co-production, cooperation and common-pool resources among the many – and translated Ostrom's seminal book *Governing the Commons* into Chinese.

As Robert Bish noted (2014), Elinor Ostrom's project tried to respond to two kinds of 'pessimisms' in the field of sustainable development. First, the fear that human collectives may be destined to outgrow the life-supporting capacities of the environments they depend on – the so-called 'Tragedy of the Commons'. And second, the fatalism of development actors and social engineers who ascribe failures to the gradual loss of commitment and civic virtues on part of resource users – a tragedy of civic virtues. In a country long swept by national moral panics over generalised cynicism and egoism (e.g. Yan Y. 2021), Chinese scholars of WUAs welcomed the political optimism of the Ostroms. They noted how longstanding folk institutions could be made to fit the self-governing model proposed by the Ostroms, even in an authoritarian country (Wang, Zhang, Kang 2018: 685), and cherished the individualising, cost-benefit formulas of institutional economics which, typically in high-demand amongst policymakers and entrepreneurs worldwide (Veldwisch and Mollinga 2013: 769-770; Goodwin 2019), are capable of concealing grassroots dissent from development initiatives and reinforcing inequalities (Cleaver and Whaley 2018; Metha *et al.* 2001; Mustafa 2002).

In her major publication, Elinor Ostrom identified eight key principles characterising institutions 'successfully' governing natural resources (e.g. an irrigation system) across cultures (1990: 90). Because the cases compared in her book had some important institutional features in common, Ostrom argued that these principles may provide the skeleton for the sustainable governance of natural resources everywhere. Here, two key concepts are co-production and common-pool resources. With the first Ostrom highlighted how for services such as the provision of freshwater, consumers are invariably involved in the production process (1996) – farmers who irrigate their fields often take on irrigation maintenance duties at a cost to users. The second emphasises how the physical attributes of a resource facilitate or impede consumption. Freshwater is both subtractable and difficult to capture, requiring forms of governance that straddle between private and public divides (2010).

By the early 2000s, these concepts, and the way they could inform water management practices on the ground, acquired a certain appeal among Chinese public policy practitioners. Coming to grips with the fragmented regulatory landscape of the post-socialist period, members of the WUA coalition took it upon themselves to repurpose from Maoism a political tradition that glorified direct involvement in common affairs and endeavoured to articulate it through legal categories at odds with traditional western demarcations of state and private ownership (Tsai 2007). In the dirigiste context of China, WUAs began to be conceptualised as experimental types of semi-autonomous, self-regulating collectives which, in productive dialogue with central state agencies, promised to redress unequal, costly, and unsustainable forms of access to water through the dissemination of associational practices targeting water savings and productivity (Wang *et al.* 2010; Wang *et al.* 2016; Pietz 2015: 287-290; Su 2010; Xu 2010; Zhang L. *et al.* 2013). In this same period, pro-poor, pro-WUAs policy articles (World Bank 2010, 2011) started shifting the blame away from backward farming communities, instead framing smallholders as the harbinger of a new ecological civilization (Lord 2021: 1691).

Longitudinal studies of WUAs' performances across various pilot projects in China highlighted how these associations, in virtue of their collaborative design, can have a significant positive impact on household income, agricultural yield, and drought alleviation (Wang *et al.* 2005, 2006, 2010), irrigation system operations

(Huang *et al.* 2010), and water savings and productivity (Zhang L. *et al.* 2013). Testament to the seriousness with which the national government lent an ear to this line of argument was its substantial contribution in 2001 of US\$259 million to introduce participatory water management practices in Gansu Province (MWR 2001) and the subsequent inclusion of WUAs in the country's 2002 Water Law reform. Since then, WUAs have been mushrooming in record-breaking numbers across China. Over the period 2006–2014 around 83,400 new WUAs were registered; about 10% of all existing villages in the country (Wang & Wu 2018).

Thus, the careful ideological rebalancing that these Ostrom-inspired associations are seemingly facilitating in China today is one between a concrete-heavy, costly, and highly centralised supply-side vision of expansionary water services⁵, and an almost cost-free, demand-curbing, distributed structure of incentives and rules – water management 'lite' (Liu and Speed 2009: 204–206; Pietz 2015: 305). By granting local users the legal capacity to supervise their local water delivery systems and to lawfully accrue a budget by charging irrigation and domestic water fees according to actual consumption, these associations promised to supply self-governing, water-savvy farmers with the economic and social incentives they needed to better regulate demand, invest in maintenance, maximise water productivity and redistribute water in times of shortage. In other words, WUAs held the promise to balance baseline environmental sustainability with long-term and inclusive economic growth.

3. One too many promises

Yancong Township, where I conducted participant observation in local water state agencies for three years between 2011 and 2017, covers a total of 470 km² of mountainous terrain and hosts 96,000 people living in twenty-seven different villages (*xingzhengcun* 行政村). At the time of fieldwork, eleven of these twenty-seven villages had established a WUA or were in the process of doing so. These eleven associations were going through different stages of their institutional life. Some were in their infancy while others had just passed away. Most of them were stillborn. All of them, however, were supposed to collect irrigation fees and keep an eye on water waste and infrastructure. Yancong WUAs had to report quarterly to local state agencies, which assessed WUAs' performance and produced plans for their growth and consolidation. One such plan involved taking over the collection of drinking water fees from relevant government agencies. Among those that had already done so – Master Du's is one example – a few were doing just fine, while others instead were shot through with complaints. Of the many accusations levelled against Qingkou's WUA, the first association studied during fieldwork, the most frequent was that its meetings were full of 'ghost speak' (*guihua* 鬼话); that is, full of lies.

Like many other WUAs around Yancong, Qingkou's WUA was established in 2008 through a World Bank grant. The WUA presided over the irrigation supply of its 7,267 residents, who farmed smallholdings and utilized 62 km² of tortuous delivery channels. Its eighty founding members belonged to forty-five farming households that managed around 20 ha of irrigated flat land. An elected board of five members – a treasurer, two fee collectors, a dispute manager, and a chairperson – reported to the local Water Service Office (*shuiwusuo* 水务所) an office under the Ministry of Water Resources. While the water delivery system was mainly gravitational and low-tech, the association itself benefitted from the insights of a local WUA expert, who had published extensively in Chinese sector journals on Ostrom's principles, and spent several months of work on the first draft of its constitution (*yongshui xiehui zhangcheng* 用水协会章程). On paper, the Qingkou WUA had everything in place to succeed in its mission of supporting sustainable water management. Off paper, it had also received the endorsement of local state officials, which for the first two years after its foundation mused about the water savings contributions that the association was seemingly making.

Qingkou WUA's members took great pride in their progressive water constitutions, which regulated associational roles, canal surveillance rota, and the timeframe for the distribution of irrigation water. During focus group interviews with members and the board in 2011–2013, conversations revolved around the association's design principles and whether these had helped members to achieve their water sustainability goals. While some of my interviewees responded in the affirmative, presenting situations in which design principles

⁵ The Three Gorges Dam (Webber 2012) and the South-North Transfer Project (Webber, Crow-Miller, Rogers 2017) are two obvious examples here.

enabled the solution of conflict and efficient planning, those in state-facing roles were far less supportive. "Collecting fees, saving water, investing in agriculture, repairing infrastructures. Sometimes it feels like we are asked to keep one too many promises (*xinshou ai' shou ai' jiao de chengnuo* 信守碍手碍脚的承诺)" Delegate Yu, the appointed water fees collector (*chuna* 出纳) and member of the local Village Committee (VC), grumbled during one interview.

As Gisa Weszkalnys (2016) has recently argued, one aspect of the promises of development planning is that they endlessly fend off criticism by alluding to futures their proponents do little to bring about. Similarly, Delegate Yu's words demonstrate the importance of understanding what invoking development promises contributes to delaying, distorting, and making less plausible the very development they are advocating. One way that WUA proponents and members did this was by passing the buck when promises didn't materialize. Buck-passing explains failures in terms of a predictable inability of local contexts and customs to adhere to project design.

As Table 1 shows, the Qingkou WUA's constitution is heavily inspired by Ostrom's work. Among others, the following four points are those most relevant for my discussion: 1) WUAs must be owned by farmers and be democratically organised, with stress on members' active participation in decision-making and democratic appointment and recall of board members; 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 four rules were met, the Qingkou WUA promised their members that they would save more water while reducing the cost of the water service.

Ostrom's design principles (based on Poteete, Janssen, Ostrom 2010: 99-101)	Chinese WUA principles (based on World Bank 2010 and Wang <i>et al.</i> 2010)	Qingkou WUA Constitution
Legal status, participation and <i>rights recognition</i>	Legal status and participation	Legal status (Art. 3) and participation (Art.13)
Fees collection (monitoring) <i>accountable</i> to users. There is <i>no explicit reference</i> to full cost recovery	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 (including <i>recall</i> of appointed individuals)	Rules crafting and enforcement	Rules crafting (Art. 20) and enforcement, including the right to recall (Art. 23)
Dispute resolution	Dispute resolution	Dispute resolution (Art. 41)

Table 1: The selective implementation of Ostrom's design principles within Chinese WUAs.

Unfortunately, it is not at all clear whether before I arrived in 2011 the association worked the way prescribed by its constitution. The constitution mentioned a board of five elected members, but for the entirety of my fieldwork, Delegate Yu seemed to be running a solo show. No meetings or elections were ever called. There was no direct involvement of the community, no supervision of canals, and not even during the sowing

season. Ultimately, no vigilance on the levelling of rice paddies was carried out. And yet, not all of its Ostrom-inspired principles were neglected. A cost-free water dispute resolution service was indeed provided to members, who eagerly took part in mediation sessions. Notably, Yu was rarely seen attending such sessions.

What Delegate Yu was keen to spend much more effort on was enforcing a subset of rules – the collection of water fees – about which the Ostroms had indeed written extensively (1977, 1998), but which the WUA constitution did not regulate in detail. Compared to other villages, the collection of fees in Qingkou was unpredictable, the amount extolled was unfair, and associational benefits were ambiguous – qualities departing considerably from Ostrom's 'fairness principle', i.e. "proportionality between the benefit and the costs" to WUAs' members (Tarko 2017: 46). While some members had secretly been pushing for a tax strike (*bashui* 罢税) in the village, many others kept on paying fearing retaliation from Yu, who was also sitting on the local VC. It is no wonder that almost 85% of all Qingkou WUA members I surveyed in 2012, and 90% in 2016, were "extraordinarily unsatisfied" (*feichang bu manyi* 非常不满意) with the governance of the irrigation network. The Qingkou community spoke of the local association as a "cosmetic project" (*mianzi gongcheng* 面子工程), its meetings a "waste of time" (*baifei shijian* 白费时间) and its only delegate as a "morally bankrupt" individual (*daodelunsang* 道德沦丧). Tellingly though, no one cared enough to mention that their association's principles were being neglected or infringed upon. Nor were there any proposals for recalling Yu from office, despite members having a 'constitutional' right to demand so.

Now, differently from how it may seem, I do not wish to reinstate here the by now well-established point of WUAs studies, and more largely of political ecology, that the optimistic targets expressed by project planners on paper are hardly if ever, achieved in reality (e.g. Mosse 2008; Mollinga, Hong, Bathia 2005; Ou, Zachernuk, Han 2004; West 2016). Surely, the malfunctioning of local associations was indeed pushing WUAs advocates to adopt a gloomier outlook. But rather, following François Molle's work on the importance of the imaginative dimension of water policy design (2008), my interest is in moving a critique to the perspective prevalent in international development planning which reads Ostrom's principles prescriptively and explains away the failures of WUAs such as Qingkou as a mere matter of deviance from the ideal type.

While Deputy Yu often blamed the checkered performance of the Qingkou WUA on its constitution's crossed-wired promises, most of the association's nominal members never seemed to be upset about the breaching or the lack of enforceability of their water constitution. While members largely considered the WUA a 'face' project, some of its rules were indeed enforced, and others, such as participative meetings, only discontinued because of the glaring lack of attendance. What bothered members the most were, in fact, extra-constitutional circumstances. Above all, the "thick-skinned-ness" (*houlianpi* 厚脸皮) with which Yu led the whole association by the nose. "All he says is a fraud, empty promises (*kouhui* 口惠)" as one villager put it. The coupling of members' morally charged comments on Delegate Yu's misconduct with their incongruent passivity and inaction on the possibility of taking back control of their own association seemed to be rather suggestive of alternative reasons for why the Qingkou WUA ended up breaking its own promises other than them not sticking to the Ostromian ideal type. One such reason, as I shall argue below, has to do with how Ostrom-inspired WUAs cultivated mistrust and facilitated the subversion of villagers' deep-rooted expectations of duty-bound, caring leadership.

4. The Chinese afterlife of Ostrom

To fully elaborate on this point, I need to go back a few months in time and relate what two prominent experts of Chinese WUAs – one scholar, and one prefectural planner – told me when I interviewed them about failed implementation. They met me in early February 2012, and again in 2014 to discuss some of the problems experienced in introducing the WUA framework in northeast Yunnan. Apparently, many of the projects supported by either the World Bank or the Chinese state disbanded once the money tap was turned off. This analysis resonated with what another leading Chinese scholar working on Ostrom-inspired WUAs had the patience to explain to me at the Chinese Academy of Social Sciences in 2013:

The Gansu Province experience was successful in that it offered huge monetary incentives to the participants. When funding recedes, so also does cooperation. When WUAs fail, and not just in China, it is exactly for these reasons. (Author's Interview, 1/11/2013, Beijing, PRC)

To that, the first expert added a slightly more sinister statement:

Participatory practices are often intended to give greater voice to farmers even though farmers don't take naturally to the approach. There's disenchantment and alienation from the local government. There's also a history of grudges towards cooperation in agriculture, which is haunted by the spectres of the Maoist past [...] WUAs are often transplanted on tainted soil which makes them fester away. (Author's Interview, 1/07/2014, Kunming, PRC)

In both experts' analyses, project failure could not be reduced to the poor performance that these associations produced with regard to the technical execution of any specific Ostrom's principles.⁶ Something else had to be at play.

The quite explicit notion articulated by WUA experts was that because the implementation process did not usually succeed in crafting the type of institution prescribed by the Ostrom-inspired WUA model, the resulting abnormal associations were most likely to fall short of helping members save water. Moreover, creeping into the language of development planners were allusions to invisible forces impinging on and mutating the progressive aspirations of development initiatives. Almost portraying them as roaming ghosts, planners described Chinese farmers as idle, haunted by the past to the point of inaction, or unwilling to do so unless their otherworldly hunger for wealth was appeased through ritualised (monetary) offerings. During semi-structured interviews conducted between 2016 and 2017 with foreign practitioners of the WUA development community in Kunming, "failed" associations were often described as "chimeric", "aborted", "zombie-like" or enjoying a "life of their own." In this account, WUAs did not fail *per se* but kept being failed by the underlying, predatory, often dysfunctional morals of their members. According to WUAs planners, local customs had to be responsible for the internal "decay" of these associations (Mosse 2003: 2).

It may be useful at this point to unknot the tangle of metaphors that frames WUAs' inadequate institutional life after implementation considering the implications that this may have for a more constructive understanding of Ostrom's work (see Pia 2018). After all, Elinor Ostrom herself had more than once noted how complex institutions for the management of common resources evolve and adapt, and that deviation from project design should not be interpreted only through the narrow framing of failed implementation (2010, 2014). Here, instead, the rather sinister notion of an institutional 'after-life' seemed to work as a placeholder helping planners leap-frog time-consuming questions about WUAs' deviation from their Ostrom-inspired model. As with Yu's complaints about WUAs containing "too many promises", what explanatory placeholders in fact did was pass the buck for failed implementation while retaining control over the yardstick by which institutional success was measured.

Following Rajesh Venugopal once more, one could ask: what are the consequences of WUAs planners' pessimism for the larger enterprise and project of water development? Can this pessimism be said to have productive effects (2018: 240)? Curiously echoing Master Du, the WUAs proponents I interviewed for this article were quick to tap the supernatural to account for the upending of their promises. Such invisible forces were then taken as the negative evidence that conveniently corroborated model-validating predictions of failed implementation attempts based on a prescriptive reading of Ostrom. That is, the notion of an "after-life" that purported to explain the detrimental acquisition of unplanned institutional behaviours from a malignant cultural backdrop, enabled planners to provide reasons for why members would not conform to the prescribed behaviour – for why they cannot change the "right" way. In turn, this move seemed to motivate planners to retain

⁶ One could be tempted here to re-read Ostrom's original examples (1990). Arguably, the most important principles Ostrom highlights are the constitutional ones – participants get to make the rules (the laws) and to change the way they make the rules (the constitution). From this perspective, imposed rules and norms are bound to violate these first two principles.

confidence in their interpretation of Ostrom's work. The only problem was that, when asked about principles and implementation, the members of the Yunnanese WUAs I conducted ethnographic fieldwork in, did go to great lengths to explain why their supposedly inimical customs should not be changed at all.

According to Qingkou WUA's members, for instance, WUAs diverted from their institutional goals by introducing social dynamics that messed with normative expectations relative to the redistributive obligations of local officeholders; what Yancong community members called the 'old ways' of water management (*laoguiju* 老规矩). Take the case of Delegate Yu. Already in his fifties, Yu was too old to make a career away from Yancong. All his hopes rested on local politics. Qingkou's WUA was a privileged arena precisely for jump-starting a career, in that collecting water fees as a means of generating funds to reinvest locally allowed him to profit from a stream of revenues invisible to the state. Several members suggested Yu had been using the allegedly embezzled water fees to acquire supporters for the upcoming 2013 Yancong's People Congress elections. For them, Delegate Yu had seized the money, originally meant to be re-invested in the maintenance of local waterworks, with the intent of purchasing villagers' votes so that he could be elected to a better-paid position within the local government. In a way, Yu's behaviour violated *both* imposed Ostromite norms and local political norms of moral economy.

Another example of malpractice was the way in which Yu subcontracted maintenance works to comparatively cheaper outsiders when locals expected themselves to be the most natural recipients of these contracts. Subcontracting to outsiders saved the WUA money, but also meant that locals would not receive the related investments. Adding to that, bespoke water infrastructures would not receive the attention locals would give them as stakeholders depending on their upkeep. While Yu's actions would comply with the WUA's constitutional mandate of co-producing its services in a fiscally efficient way, they were morally condemned for being detrimental to the community who appointed him in his WUA role. Having lost Yu to a different political role, the Qingkou WUA ceased to function after the 2013 elections.

Following WUAs members' emphasis on the relevance of pre-existing expectations of duty fulfilment for their association's everyday life, I should rename this structure of expectations and practices "beforelife." This term signals a stage in the institutional biography of WUAs that precedes the advent of formal rules, principles, and the question of their failed or successful actualisation; a stage where political relationships – the values, aspirations, imaginaries and promises that are folded into them – gain precedence. In contrast to WUAs' ghostly 'afterlives', here the focus is not on the invisible forces condemning WUA's members to violate prescriptions, but on how developmental prescriptions unsettle pre-existing political relations and aspirations. That is, before Qingkou WUAs members could organise around the principles supported by their Ostromian constitution, they needed first to be able to trust in members' commitments to political projects of collective flourishing; something that prescriptive WUAs seemed to be making more difficult for them.⁷

5. The ghosts in the shell

In more recent publications – far less commented upon than the one where her more famous principles are proposed for the first time – Ostrom was keen to show that the type of cooperative behaviour her design principles are meant to foster is not the only possible outcome of their institutionalisation (Poteete, Janssen and Ostrom 2010: 218). Once a WUA is established one should look further to see whether the association is grounded on, and produces, social relations that would enable people to have confidence in rules and commit to sustainable management.

For Ostrom, such social relations are those built around trust (2010: 245). Trust, Ostrom warns us, is a diachronic variable that is usually formalised into customs, which in turn specify to co-operators the social and cultural conditions that make someone trustworthy (2005: 62-64). Through her analysis of trust, Ostrom re-approached the question of the efficacy of her design principles interpretatively (as opposed to prescriptively), as a historically-inflected function of the degree to which these principles may appear enforcement-worthy to their crafters. *Contra* to the interpretation advanced by the development planners I interviewed, Ostrom looks

⁷ I am very thankful to Stevan Harrell for pointing out that it might have been partly the trope of peasant backwardness and/or that of the Cultural Revolution's disaster that kept WUAs planners from realizing this fundamental truth.

at WUAs' members not simply as responding to monetary offerings or the grudge-bearing minions of a defunct political dystopia. Rather, Ostrom's work supports an interpretation of water-concerned collectives as shaped by living moral subjects. These subjects actively seek and cement social relations that motivate them to adopt binding institutional principles in relation to how congruent these may be to their structure of expectations and projects of collective flourishing (Ostrom 2010: 661-2).

The reasons for Qingkou WUA's failure are therefore consistent with Ostrom's interpretation of collective *inaction*. That is, the idea that questions of trust precede questions of institutional normativity – but inconsistent with the interpretation of failure that WUAs' proponents make in accordance with their prescriptive understanding of Ostrom's principles. That is, scapegoating allegedly inimical customs for whatever monstrous form institutional deviance may take. My reference above to the eerie language used by my interlocutors to frame the reasons for failure in sustainability interventions is meant to capture the theoretical stakes of thinking prescriptively about Ostrom's work. In both Du and development planners' accounts of arrested development, the figure of the "ghost" thematizes a process of inversion of the normative ideals of progress. It is indeed counter-ideal that development should mean that migrant kin are more inclined to break the obligations they have towards their communities of origin. Nor is it ideal that supposedly development-enhancing institutions end up silencing those undergirding moral values (i.e. trust, mutuality) that make the goals of development desirable in the first place. This says something important about the work of self-defeating promises in contemporary Chinese institutional practices of rural development. When broken, they do not simply leave their intended recipients as is, but rather, they destabilise pre-existing moral values and political arrangements, making sustainability a community-breaking (as opposed to community-building) project.

A related reversal occurs when Ostrom's key insights about design principles, fairness and co-production go selectively unnoticed by the developmental literature and the practitioners of WUAs in Yunnan. Ostrom's work "lives on" in development planning and its promises of sustainability, but only in the formulaic and prescriptive mode of "one-size fits all" principles and in the resulting blame for their misapplication. In so doing, Ostrom's theoretical insights are employed by local planners to depoliticise, absorb, and co-opt critique into calls for further developmental interventions (Walsh 2022). Recuperating Ostrom's original insights about trust enable us to get a better sense of what goes on across the institutional life of WUAs – how institutions evolve in Ostrom's parlance. What's more, it uncovers the presence of another invisible force, arguably unnoticed by development planners, that is seemingly haunting the shell of Yunnanese WUAs today: members' differently-oriented promises of collective prosperity.

6. The before-life of trust

In later works, Ostrom questioned the enthusiasm for sustainability that is usually expressed by proponents of "over-simplistic panaceas" to local environmental issues (Van Laerhoven and Ostrom 2007: 19). Paying attention to the language used to talk about the broken promises of WUAs – as hinted at in my analysis of the Qingkou WUA above – may harbour a more cogent explanation than that advanced by WUAs planners for why these associations are ambivalently seen as either thriving or failing in contemporary China.

Indeed, despite the clamour surrounding the environmentally redemptive powers of WUAs, literature critical of their results is slowly coming to the fore. Reasons to be sceptical about WUAs' successes are manifold. To begin, there is an intrinsic problem of measurability. First, proxy measures for water efficiency cause uncertainty as to the magnitude or quality of the effects measured (Araral 2009: 688). Second, 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 often raise water fees, *de facto* eroding the resources of poorer households (Huang *et al.* 2010: 367). Third, the implementation of WUAs is often mediated by self-preserving state bureaucracies (Suhardiman 2013) and these are appropriated by local elites, who exert influence over them (Mustafa, Altz-Stamm, Scott 2016). In China, the centralised, authoritarian character of the government further affects the shape and functioning of these associations (Wang, Zhang & Kang 2019).

This latter strand of criticism offers a qualitatively different take on the question of why WUAs may be seen as constantly oscillating between failure and success; one that is independent of their actual performance. Following Verzijl and Dominguez's work on the durability of Peruvian WUAs, I argue that WUAs' appeal in

northeast Yunnan rests in the way these associations are used by some of their members as vehicles to cultivate and reinforce local aspirations of collective flourishing, thus determining these associations' relevance at the grassroots and their persistence over time (2015: 124).

The Wuxing WUA illustrates this dynamic. It was established in Sangou Township, a community with fewer than 30,000 inhabitants located 50 km southwest of Yancong. At our first meeting in 2012, Chair Hong introduced me to the specificities of his association. Established through a large grant from the Sino-German Cooperative Program in 2009, the association was composed of 6,000 members, 67 elected group leaders (*xiaozuzhang* 小组长) and an unelected board of eleven officials. Within the board, five people who held double positions as VC members were considered to be the association's collective CEO. The CEOs received a salary rather than compensation based on revenues. General meetings, attended by all the group leaders but not by all the members, were organised twice a year, at the beginning of each sowing season. Disputes were not handled by the WUA and the associations' rules and structure were not subject to revision. In brief, none of Ostrom's principles was even part of the association's design.

To work, this WUA hinged on its own 'beforelife', the customary arrangements in place before the introduction of the association in 2009. Water allocation was partitioned according to resource use: household needs and agricultural production. Formally, the Wuxing WUA supervised the latter, while the former was dealt with independently by the various hamlets located across the township. For Chair Hong this was due to the 'traditional' (*chuantong* 传统) method each community used to allocate domestic water from communal water taps (*longtou* 龙头). This 'autonomous political practice' (*zifa qilai de* 自发起来的) revolved around specific individuals who freely decided to bear responsibility for regulating the communal use of freshwater sources in small hamlets. When the Sino-German project first arrived in Wuxing, these management practices were integrated into the WUA scheme, replacing compulsory participation with the principle of democratic representation. Replacing participation with representation, I was told by Chair Hong, "contributed to building trust (*weixin* 威信)" with the local communities and assured that "villagers accepted the new association."

These customary practices had been very successful in distributing water and in securing continuous access to water for a very long time. Group Leader Zhang, one of the association's group leaders, went to the trouble to explain how this was so over several meetings between 2013 and 2016. Over the past decades, Wuxing went through repeated periods of low or no rainfall. People started carrying water (*tiaoshui* 挑水) from distant wells with poles and households pooled labor and resources together to excavate water tanks (*shuichi* 水池) to collect creek water and the little rainwater that did come. The experience of shortage was compounded by the mismatch between agricultural activities and environmental rhythms. In this area, between February to May, water had traditionally been in shortage as the cyclical dry spells of monsoon climate conflict with the needs of rice paddies.

But according to Zhang, such moments of rupture between the flow of human needs and the ebbs of environmental plenty were precisely when cooperation offered a solution. During these times, villagers encouraged and supervised by group leaders, would take on "water control" (*guanshui* 管水) obligations, such as saving domestic water; anticipated or postponed the transplantation of rice seedlings onto irrigated paddies (*bayang* 拔秧), de facto lowering harvest output; and volunteered to act as mediators between households to organise solidarity networks of water redistribution. Villagers living in Zhang's hamlets confirmed that group leaders' work was crucial to living through 'food stress' (*chijin* 吃尽). They maintained that in places where leaders are not "trustworthy" (*bukekaode* 不可靠的), it is difficult to organize water duty rotas. One villager explained the reasons for taking part in water control duties the following way: "A good harvest and longevity (*renshounianfeng* 人寿年丰) is achievable only as part of a community."

Enlivened by pre-existing political practices of mutual care and their associated promises of communal prosperity and sensibility for place-specific environmental rhythms, the Wuxing WUA was thriving. By 2017, its board members had accrued enough resources to invest in drip irrigation technologies. Wuxing was achieving at least one of the goals the proponents of Chinese WUAs had long been campaigning for – decreasing water waste – minus their prescriptive bent on Ostrom's design principles. In the eyes of its members, the daily life of the Wuxing WUA was a simple re-instantiation of the mutual support villagers had always given one another in times of shortage. Importantly though, this WUA did not take the further step of balancing up the needs of environmental sustainability with the imperative of economic growth. Villagers engaged in practices

of redistribution and deescalated the impact of rice production on local water availability as temporary coping mechanisms to prosper in the long-term as a community. This is a metric for institutional success that does not seem to completely match that of Chinese WUAs' proponents.

7. The land of unlaidd eggs

Contrary to what WUAs supporters argue about the benefits of introducing these associations in rural China – that WUAs would provide members with the missing incentives they need to change their environmentally unsavvy behaviours and practices – Ostrom-inspired WUAs in Yunnan often seem to rather survive "without controlling the conditions under which" their services are produced and reproduced (Tsing 2015: 63). Far from upending the association's 'beforelife', Yancong WUAs somewhat thrived because of it.

In Heimo, a mountain village not too far from Qing'ou, a WUA had been established a few years before my arrival. Its momentary success was all due to Master Du. Heimo village is a remote agricultural community comprising 70 households. Like many other hilltop villages in Huize County, Heimo had few trees, as most of the mountain 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. During the 1980s, the intensification of agriculture brought diminishing marginal returns, which forced many male farmers to diversify occupations, migrating towards Wuxing or Huize in search of temporary work in construction or manufacturing. Thus, women were left raising pigs and caring for the few cultivated plots left.

In the late 1970s, under the pressure of already diminishing water availability, farmers in Heimo organised autonomously to build six underground water tanks (*shuijiao* 水窖) so that farmers could collect rainwater and use it for irrigation. Following the loss of fertility caused by deforestation and state-sponsored inadequate agricultural practices, farmers abandoned the water tanks, now seldom providing enough water for paddies, and turned to short-term vegetable gardens, profiting from governmental campaigns supporting mulching (*dimo fugai* 地膜覆盖) or, as a substitute, the use of plastic-film (*bomosu* 薄膜苏) to control water evaporation. When the labor of adding water became secondary, farmers started becoming less preoccupied with irrigation than with domestic water. This is when Master Du and his outstanding dedication to the village water facility entered the picture.

With vast political experience behind him, Master Du had a long history of "leading the masses." Many talked about him as a man capable of "great deeds." Before he and a few other villagers decided to write up a water constitution in an elaborate attempt to draw governmental attention and hopefully investments into their crumbling water infrastructures, Du had been leading the management of irrigation and drinking water in Heimo for almost twenty-five years. State attempts at managing local water sources in the locale had consistently failed during the 90s. This led to the co-optation of Du's autonomous association. The state saw in Heimo's success an opportunity to recast decades of self-governance as preparatory work for the advent of a state-backed WUA. Now conveniently relabelled a group leader, Du led the association for a couple of years, until its final demise. In his official role, he kept advocating and receiving wide support for local practices of diffused responsibility: system maintenance, water-saving measures and enforcing rotating access to the communal tap.

In my discussion of Wuxing WUA, I noted how WUAs may recruit organizational practices that run against a prescriptive understanding of Ostrom's design principles. Here, instead, the goals that members strive to achieve through grassroots practices of resource management diverge from those that WUAs' design principles promise to achieve, i.e. sustainability-cum-growth. What would villagers gain by following Master Du's examples? Consider Du's answer to this question:

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. 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, and be better off. In the community, everybody aspired to a good society, to an environment where one could "live and work in peace and contentment" (*anjuleye* 安居乐业). Over the years, I made all these wishes come true: water, electricity, and a road. Today, living in such an environment is hard to come by. So many of us leave, including members of my own family! However, life can also be enjoyable in small places like Heimo, if one strives for it. (Authors' Interview, 4/12/2013, undisclosed location)

Heimo WUA members would speak bitterly of "development" or "growth" (*fazhan* 发展) which they equated, as did Qingkou villagers, to "ghost speak." Instead, they were moved by Du's ideal of peaceful living, one where, as one female villager explained: "if you cannot rely on rainfall, you can on people (*weiminkaomin bukaoyu* 为民靠民不靠雨)." As argued by the political ecology of participatory development programs, villagers do not engage in cooperative water management with the sole intent of enhancing water efficiency (Goodwin 2019: 503; Mosse 1999, 2008). An interpretative optics on Ostrom also brings into view the power that local promises of self-driven collective flourishing have for aligning people's actions on environmental sustainability. In Yancong, organizing and ultimately relying on and trusting one another in matters of managing common resources is above all predicated upon the political promise of a peaceful and content communal life.

As with the Wuxing case, villagers in Heimo effectively decouple their notion of prosperity from that of economic growth. For one, villagers did not aspire to produce more crops per water drop, a staple concern of the development literature on WUAs. They seldom referred to sustainable growth as a motivation for their action. They collectively organized the equal and sustainable use of local water sources to continue inhabiting their communities and make them resilient, long-lived, and prosperous. Thus, WUAs' promises of sustainable development masked an action on the environment that was rather geared towards keeping rural villages flourishing (where chickens could keep on "laying eggs") and social relations stable and predictable; the "old way".⁸

Why would Heimo WUA cease to exist if it was so effective in keeping access to water in the village? As explained above, WUAs acquired popularity in the contested arena of Chinese water politics because of their relative "lightness" on local state budgets, and therefore as a growth-supportive cut to state expenditures. By co-opting forms of cooperative labor that may be alternatively voluntary or coerced but always dependent on members' skills, dedication, ingenuity, and resourcefulness, WUAs could easily breeze through the first few bumpy years of implementation. However, once issues of maintenance became more complex, WUAs appeared to offer only limited solutions. In Heimo, the local party branch had begun promoting a common fund to finance the installation of individual hot water cisterns (*shuitong* 水桶) on every rooftop in the village. When some of these cisterns malfunctioned, WUA members were held responsible to fix them, which they couldn't. By 2015, villagers had started redirecting their time and money towards private projects, installing solar panels, or opening retail shops downhill with the prospect of one day taking their families away from the village. That is, without external support, the appeal of Master Du's promises had started to slowly dry out, chipping away at his vision of finding exclusive contentment in rural village life.

8. Conclusions

Moving away from an evaluation of development interventions that target rural users in the Chinese water sector, this article has asked why these interventions keep on happening despite their uncertain outcomes. The policy debate around sustainability and ecological civilization has brought to the fore the opportunity for Ostromite-inspired solutions to national-level water problems. Ostromite WUAs offer an optimistic outlook for transitioning the Chinese economy toward a green growth model. However, a focus on the optative and promissory language used by some enthusiastic proponents of WUAs on one side, and the gloomier imaginaries tainting planners and members' assessment of three WUAs of northeast Yunnan on the other, allowed me to formulate a two-pronged critique of current debates about environmental sustainability in China (and elsewhere). On the one hand, the prescriptive approach to WUAs appears to close down space for other understandings of collective prosperity not grounded on continuous economic growth. On the other, this approach invalidates the original insights about sustainability enshrined by Ostrom's design principles.

While some WUA advocates believe that the crux of successful management rests with members' adherence to the set of portable rules identified by Ostrom, an alternative reading of Ostrom indicates that the

⁸ I do not mean to suggest that Heimo villagers were still satisfied with a premodern lifestyle or livelihood, as clearly indicated by Master Du. Rather, it is imposed development, its pace and blindness to locally treasured values that were overtly rejected.

activation of forms of sustainable environmental management is rather the outcome of interplaying dynamics of trust-building, mutuality, and the imaginaries and promises that underpin them. Noticing how Ostrom's analytical voice – now rendered phantasmal by the institutionalization of WUAs – can be read as belonging to a different interpretative agenda, enabled this article to explore the generative potential of historically-infllected relations of trust. These relations may orient collective action on the environment along lines not conterminous with the goal of economic growth (Wall 2014: 117-118; 188-190) and more congruous with principles of equity and personal accountability (Ostrom & Ostrom 2004). Arguably, this is something which could happen with certain forms, but not all forms, of economic growth. This is where Chinese imaginaries of 'prosperity-otherwise' start cropping up: good harvests and peaceful, stable lives rooted in communal support and attuned to environmental rhythms.

Chinese WUAs mobilize the growth-independent promises that animate mutualistic arrangements in northeast Yunnan for the sake of their proliferation. Indeed, this process of institutional and discursive entrapment may provide fertile ground for the temporary blossoming of new types of environmental leadership – caring, hierarchical, or even exploitative, as they were (Mosse 2008: 98; Cleaver and de Koning 2015: 5). However, WUAs, as a single note in a score of fine-tuned pro-growth policies for the national economy (Lord 2021), inevitably devitalize local understandings of collective prosperity, leading these associations to betray their own principles. Indeed, as Elinor Ostrom puts it for the Californian WUAs she studied in her PhD thesis, a too-prescriptive approach to grassroots resource management may prevent the formation of "conceptual unanimity" in establishing the nature of, and allocating the blame for, developmental failures (1998: 106). When institutions and communities are hollowed-out, and blame is misallocated, ghosts take their place.

On the contrary, the promises of growth-compatible sustainability encapsulated by the institutional architecture of WUAs live on unscathed by the appraisal of these associations' often ambiguous results. Arguably, what keeps WUAs' promises appealing to their proponents, despite their unlikely fruition, is their ability to successfully elide the gap between the non-falsifiability of their premises – i.e. a prescriptive belief in design principles – and the obduracy of the practices and values they aspire to transform – i.e. the desperate need that development initiatives have for latching onto time-proven social formations to assure the survival of these very initiatives. For this reason, Ostrom's critics in critical development and political ecology usually comment that participative projects on the environment, no matter how motivated and ambitious, could never escape the cooptative logic of capitalist growth and accumulation that is hard-wired into their design (Forsyth and Johnson 2014: 1100; Goodwin 2019: 503; Saunders 2014). This position however disables any elaboration of alternatives to that very logic, and does not leave us in a better place to assess the degree to which counter-paradigmatic visions of environmental futures may temporarily thrive at the frontier of green capitalism and mobilise people's ingenuity and dedication in the present (cf. Singleton 2017).

Institutional supporters of Ostrom-inspired development interventions seem to ignore the fact that without self-organizing collectives, including their competing promises of prosperity, the planning forecasts would never be obtained. Because of that, Ostrom's theory of cooperation can indeed be said to enjoy a "double" life in China. While WUAs often fail as conscious, deliberate institutional prescriptions because their everyday operations may contradict their basic nature, they also succeed, often unconsciously, as cooperative associations organically emerge in designs for collective prosperity rather than principle-dictated constitutions. But beyond failure and success, Ostrom's work lives on in those still-existing yet selectively unnoticed spaces where promises of environmentally sensible prosperity remain untouched by the imperative of growth.

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