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Pockets of Participation: Bureaucratic Incentives and Participatory Irrigation Management in Thailand

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ABSTRACT: Despite a history of participatory policies, Thailand's Royal Irrigation Department (RID) has had little success in developing water user organisations (WUOs) capable of facilitating cooperation between farmers and the irrigation agency. Even so, pockets of participation exist. What can explain these rare successes? What policy lessons can they provide? Comparing nine WUOs, I identify factors that contribute to the emergence of relatively successful groups. Most importantly, I show that successful WUOs are contingent on the actions of local irrigation officials. These findings emphasise the important role of street-level bureaucrats in implementing participatory policies. The incentive structures provided by the RID, though, deter most officials from sincerely collaborating and cooperating with farmers. Thus experts and policy-makers interested in promoting participatory resource management should focus more attention on shaping incentives for local officials to engage meaningfully with farmers.

KEYWORDS: Participatory resource management, irrigation, street-level bureaucrats, public participation, Thailand

INTRODUCTION

The vast majority of WUOs in Thailand are ineffective.[1] Three researchers titled their study a 'Post-Mortem Analysis', implying that Thai water user groups (WUGs) were dead (Molle et al., 2002). The Asian Development Bank, evaluating a project in which the RID was to have established WUOs, said that such groups were "fragile and will require urgent follow-up" (ADB, 2003: 12; see also United Nations, 2006: 134-135). Even officials within the RID recognise their lack of participatory results. One stated, "The RID has been working with water user groups for tens and tens and tens of years, but they never met with any success" (RID Official, 2012b). Thailand's track record in developing groups for participatory water management has been less than exemplary.

Thus it is surprising that the Mae Yom Operation and Maintenance Office of the RID received the 2012 United Nations Public Service Award for Fostering Participation in Policy-Making Decisions through Innovative Mechanisms for Asia and the Pacific (United Nations, 2014). The local office of the RID obtained the decoration despite competing with groups from South Korea and Australia, both of which have stronger participatory traditions. The accolade recognised the establishment of the Mae Yom Joint Management Committee, which coordinates collaboration between farmers, irrigation officials, industry and local governments across five districts in Phrae Province. The participatory organisation facilitates water-sharing, reduces conflict between upstream and downstream farmers,

[1] The literature often uses the term 'water user association' as a general appellation for these organizations, but in Thailand, 'water user association' refers to a specific category of WUO. I use WUO as a generic term; distinct types are referenced by their names in this essay.

and organises the construction of temporary weirs across the system, which has helped increase the dry season irrigated area by threefold from 2799 to 9597 hectares (ha). Mae Yom is not alone; rare pockets of participatory success are scattered throughout the Thai irrigation landscape.

What can explain these rare phenomenon? What policy lessons can be drawn from these groups? I address these questions through a comparative study of nine WUOs throughout Thailand. By investigating the processes by which some of these groups succeed while others flounder, I identify factors contributing to these pockets of participatory success. Most importantly, I demonstrate that the actions of local irrigation officials are a vital determinant of citizen participation in resource governance. The results suggest that policy experts interested in promoting community participation in resource management should focus less on projects and programmes and more on the set of incentives which shape bureaucratic behaviour.

These findings contribute to a growing body of literature on irrigation in the Southeast Asian context that emphasises the prominence of bureaucratic structures in determining participatory policy outcomes. Much of this work describes irrigation management transfer programmes in the Philippines and Indonesia, wherein responsibilities for irrigation systems are assigned to farmer groups (Korten and Siy, 1989; Oorthuizen, 2003; Araral, 2005; Inocencio and Barker, 2006; Bruns, 2013; Suhardiman, 2015).[2] Thailand's highly-centralised irrigation agency, though, has been slower than its neighbours to adopt and implement participatory policies, both in terms of law and execution (Molle, 2005a). The resulting policy framework focuses more on 'ceremonial' than actual participation and the vast majority of WUOs exist merely on paper rather than in practice (Ounvichit, 2005; Neef, 2008: 105; Wachiraporn and Sinclair, 2011).

Thus pockets of participation in the Thai context present a puzzle. Their sporadic success stories provide an excellent opportunity to study the circumstances under which the state can achieve good governance outcomes in participatory irrigation management (Tendler, 1997).While the focus of this study is specific to Thailand, it has broader implications for both the literature on participatory resource management (Ostrom, 1990; Agrawal, 2003; Mansuri and Rao, 2004; 2013) and the growing literature seeking to understand irrigation bureaucracies, both in and out of Southeast Asia (Ostrom, 1992; Mollinga and Bolding, 2004; Suhardiman et al., 2014).

The remainder of the essay proceeds as follows. In the next section I explain the importance of bureaucratic incentives in participatory policy implementation. Here I also present some initial propositions pertaining to the activities of irrigation agents. The ensuing section gives a background of the Thai policy context, including a short history of the RID. I then turn to my comparative cases and finally summarise the findings of the essay and briefly discuss their implications.

PARTICIPATORY SYSTEMS AND BUREAUCRATIC INCENTIVES

Increasingly, international donors as well as developing country governments are seeking to promote participation in natural resource management and development (Agrawal and Benson, 2011; Mansuri and Rao, 2013; Barr et al., 2015). This is not new. Irrigation experts have long recognised that state management alone would be too costly and cumbersome to implement (Wade, 1988). The participation of service recipients should reduce state costs and improve service provision (Vermillion,

[2] It should be noted that both the Philippines and Indonesia still face considerable challenges in their efforts to encourage farmer participation in irrigation management. Even so, based on my reading of the literature as well as field visits, I would argue that the two countries are further advanced than Thailand in their participatory policies (see Bruns, 1993).

1997). Such logic has led international donors to place participatory conditions on irrigation aid packages since the 1980s.[3]

Unfortunately, despite decades of policy implementation, these efforts generally have not resulted in improved farmer participation (Mukherji et al., 2011). Indeed, many irrigation agencies, including Thailand's, adopted participatory policies to please international donors only to fall short of their promises during implementation (e.g. Bruns, 2004; Abonyi, 2005; Molle, 2005a; Suhardiman, 2013).

While experts often bemoan the lack of 'political will' in implementing these programmes, analysis of the political challenges to irrigation reform is relatively rare (Mollinga and Bolding, 2004). Instead, scholars like Ostrom (1992) and Wade (1994) have listed a number of facilitating factors that affect the success of community organisations for common pool resource management. A focus on these factors makes building such organisations a technical act, which ignores the role of state actors (Agrawal, 2003). Indeed, when the state is considered, it is largely portrayed negatively, either in contrast to indigenous community groups or as a threat to them (Lam, 1998; Ostrom, 2005; Agrawal and Chhatre, 2007). While such research is valuable, it is limited in providing practical suggestions regarding the inevitable role of state actors in resource management.

In contrast, advances in the study of irrigation bureaucracies have pushed for a greater understanding of their role in both determining and implementing policies (Molle et al., 2009). For example, Suhardiman (2013; 2015) demonstrated that the Indonesian irrigation agency has routinely intervened in the policy-making process in order to protect its vested interests and hinder participatory policies (see also Bruns, 2004). Other scholars considered irrigation bureaucracies in Taiwan (Moore, 1989; Lam, 1996), South Korea (Wade, 1982), and the Philippines (Korten and Siy, 1989; Oorthuizen, 2003). Each of these studies highlighted the role public bureaucracies play in determining the success or failure of irrigation policies.

Building on these works, I suggest that one of the keys to understanding participatory policy outcomes is a greater focus on what Lipsky has called 'street-level bureaucrats'. Street-level bureaucrats are the "public service workers who interact directly with [service recipients], and who have substantial discretion in the execution of their work" (Lipsky, 2010: 2). These government employees directly influence people's lives by choosing how and when to enforce government policies. Their opportunity for decision-making as well as relative autonomy to pursue some of their own interests allows them to become de facto policy-makers through the implementation process. Low-level irrigation officials and employees fill this role as on-the-ground policy-makers, determining their own actions in pursuing the implementation of irrigation policies (Wade, 1992). They exercise great discretion in deciding which policy elements to pursue, and they face two circumstances that discourage them from sincerely promoting WUOs.

First, when charged with developing a WUO, street-level bureaucrats confront the inherent difficulty of the task. Irrigation officials decide who to work with, how to involve them, and the degree of their involvement. Making those decisions, though, includes relatively high information and transaction costs for bureaucrats. They must first develop site-specific knowledge, requiring effort and time to become familiar with the community. This calls for frequent face-to-face interactions with farmers and community leaders, some of whom might be hostile to government interference. Officials must find a way to shape policies to fit the local context as well, which demands diplomacy and managerial talent often beyond their training. Local political situations also muddy the waters, as officials may be pulled toward or challenged by politically powerful individuals (Oorthuizen, 2003). The high information and

[3] An earlier wave of USAID-sponsored aid promoted participatory approaches in the 1950s and 1960s, but, by the end of the 1960s, these programmes had all but disappeared. Participation as a focus of international aid re-emerged in the 1980s (Mansuri and Rao, 2004).

transaction costs as well as the number of decisions necessary in building WUOs make them among the most difficult tasks for state agencies to accomplish (Pritchett and Woolcock, 2004).

Second, beyond the difficulty of the undertaking, incentive structures within irrigation agencies are frequently at odds with such practices. Centralised agencies, as are common in developing countries, tend to concentrate on tangible tasks that are highly visible and easily measured (Scott, 1998; Nelson, 1999). Promotion and pay-rise structures are conditioned on these tasks (Lam, 1998). For instance, irrigation officials are often rewarded for building infrastructure, regardless of its utility to farmers because it is easily visible and occurs within a budget cycle. On the other hand, it is difficult to measure and demonstrate operation and maintenance (O&M). The success of good maintenance may not be apparent for many years. Because of this, state officials may benefit from waiting until infrastructure needs rehabilitation rather than promoting proper maintenance (Briscoe, 2000; Araral, 2005).

Working with farmers is even less visible. Farmer groups require regular interaction, training, communication, and even friendship from irrigation officials, all of which are difficult to make legible to supervisors and bosses. Indeed, there are very few ways in which an official can demonstrate excellent participatory work with farmers with the same clarity as the former can show having built a dam or canal. Participatory work rarely appears on annual reviews or decisions about promotions and pay increases.

Thus, two forces can hinder a bureaucrat from engaging in participatory work: (1) the inherent difficulty of the task and (2) the incentive structure of centralised agencies. While little can be done to reduce the information and transaction costs intrinsic to participatory work, I posit that the largest determinants for state creation of WUOs are the incentives that drive street-level bureaucratic behaviour. In the sections that follow, relying on the rare successes of participatory management in Thailand, I demonstrate that street-level bureaucrats who are committed to working with farmers can have a strong effect on the development of WUOs, perhaps stronger than some of the facilitating conditions listed by Agrawal (2003). I also show that among RID officials these incentives are personal rather than embedded within the agency. Thus their effect is limited.

PARTICIPATORY IRRIGATION MANAGEMENT IN THE THAI CONTEXT

The Thai state has long been involved in irrigation management, and it has only rarely incorporated farmer participation as a method to enhance service provision. Farmer involvement has almost always served other goals. The state's first foray into participatory irrigation management occurred during government efforts to fight the rise of Communist sympathisers in the populace in the 1960s. A regional office of the RID in Northeast Thailand proposed that farmers gather together and form WUOs as part of a push to win the 'hearts and minds' of the people (see Sangkhamanee, 2010: chapter 5). These first groups, titled *Sahakon Phuu Chaj Naam*,[4] or water user associations (WUAs), were formed in Udon Thani in the mid-1960s (Molle et al., 2002). By 1968 they were introduced in the central plains.

The RID had little interest in promoting a fully participatory partnership with farmers, as the groups were an entirely top-down initiative. Farmers were rarely consulted regarding irrigation decisions, and despite the claim that farmers were allowed to choose their own group leadership, irrigation engineers frequently intervened to make the choice for them (Duncan, 1976). Within a decade, the RID reconsidered its commitment to expand the number of WUAs around the country. By 1979 the department deferred the creation of any new groups due to what they deemed was a lack of appropriate farmer leadership (RID, 2011).

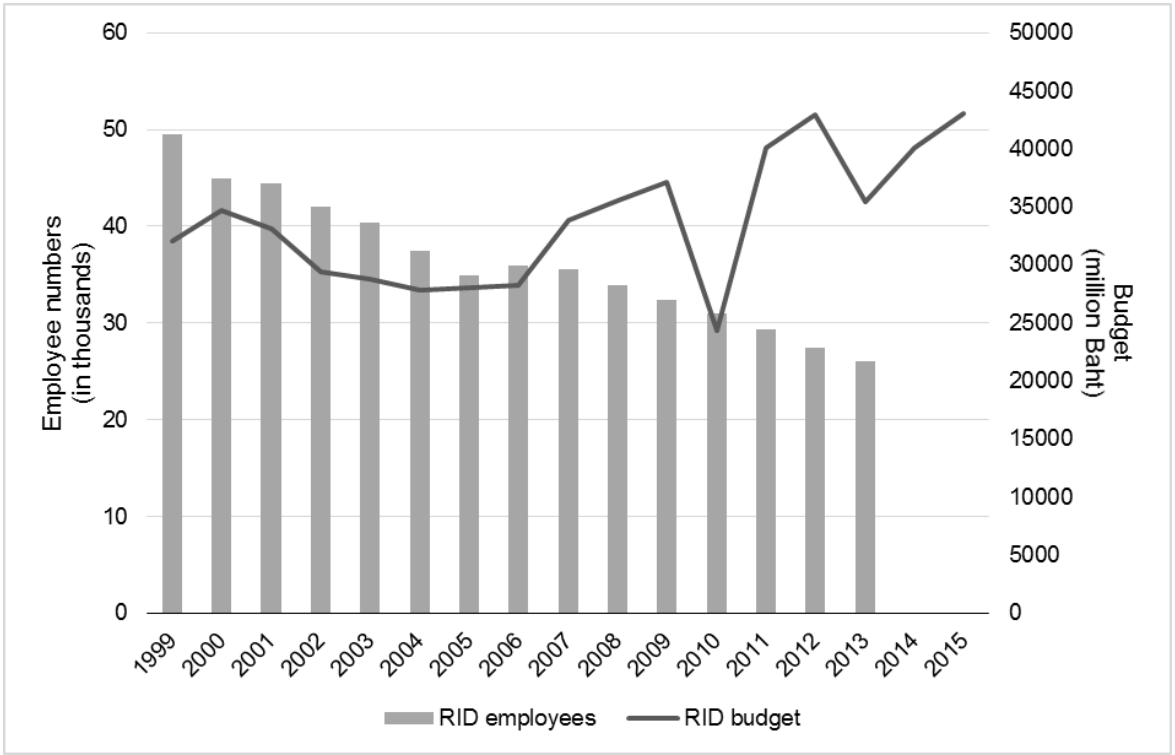
[4] All Thai terms, except proper names, are transliterated using the Haas system without tone markings. Proper names follow the generally accepted spellings.

In the late 1980s, the RID reintroduced WUOs, but this time they focused on smaller organisations called water user groups (WUGs). These encouraged farmer participation only at the on-farm portion of irrigation, or the point where irrigation water is turned from canals to the farmers' fields. The WUGs were very limited in scope; they covered 160 ha of ground at the most with membership rolls of only about ten farmers. These groups suffered from the same problems that plagued the earlier attempts to develop WUAs (TDRI, 2002). The top-down programmes failed to actually develop organisational structures that fostered a working relationship between farmers and irrigation agency officials (Hoynck and Rieser, 2002).

This policy approach lasted until the wake of the 1997 financial crisis when Thailand turned to the ADB for an agriculture sector loan that carried conditions for greater farmer participation in irrigation management. The Thai government signed the loan agreement in 1999 and began implementing a series of reforms necessary for the disbursement of the loan, including some pilot efforts at participatory irrigation management. RID officials, though exhibiting their long-held proclivities for construction rather than for O&M, by and large failed to implement the participatory sections of the project. When the government cancelled the remainder of the loan in 2001, little reform toward participation had taken place (Abonyi, 2005; Molle, 2005a).

Agency officials, though, did begin to feel a pinch as their ranks shrank. Beginning in the late 1990s, the Thai government sought for ways to decrease the number of state employees. In the RID this meant that despite budget increases, the number of boots on the ground fell. From a highpoint of over 50,000 employees in the 1990s, employee numbers dropped dramatically after 1999. The RID was forced to do the same job with fewer than 30,000 employees by 2011, as evidenced in Figure 1.

Figure 1. RID employee numbers and budgets, 1999-2015.



Note: Employee numbers include officials (*khaaraadchakaan*), permanent staff (*luugcaang pracam*), and government employees (*phanakngaan raadchakan*). Data Sources: RID Annual Report, multiple years; Bureau of the Budget, multiple years.

The decrease in employee numbers led some within the agency to turn to farmers as a new source of labour, especially in the distasteful realm of O&M. If the agency could encourage farmers to conduct the tasks necessary for local system management, officials could continue to focus on the engineering aspects of their mission. Such promotion of farmer participation also put the agency more in line with recent constitutional requirements for citizen participation in natural resource management.

The central office in Bangkok called on its 17 regional offices to increase the participation of farmers, which it measured by the number of water user groups established. As the 2004 Strategic Plan was formulated and then released, the number of registered water user groups in medium- and large-scale irrigation systems across the country jumped from about 10,000 in 2002 to almost 15,000 by the end of 2004. Many of these new groups existed only on paper, though. By 2011, approximately 3,000 of them had disappeared from RID records.

Government neglect of participatory policies was even evident in the 2008 establishment of the Office of Public Participation Promotion (OPPP) within the RID. A few enterprising officials with personal commitments to farmer participation had convinced the RID administration to organise the office as part of an effort to abide by constitutional requirements for participation as well as reduce O&M costs within the agency (OPPP Head, 2012). The office, though, is often considered an afterthought, and, despite its relatively modest size, its budget is subject to seizure in the pursuit of infrastructure projects.[5] Even in 2014, six years after its establishment, the government had yet to officially sanction its existence (RID Official, 2014).

This brief history demonstrates that the motivations determining Thai state actions toward participatory irrigation management have little to do with efficiency or improved service provision. Instead goals have ranged from preventing Communist insurgency to appeasing international donors to cutting government costs. This has created a policy context in which attention is paid to quantity of groups rather than quality. Indeed, as seen below, few internal incentives exist to encourage street-level bureaucrats to engage in building effective WUOs.

VARIATION AMONG WUOS

Research design

In 2012, I conducted a series of case studies of WUOs throughout Thailand in order to better understand rare successes in participatory management. The RID recognises a variety of different groups. At the most local level are the basic water user groups (WUGs). These organisations operate at the tertiary canal level and include only a few members. They are meant to operate and maintain on-farm irrigation. As of 2011, the RID has recorded 12,003 of these groups existing in the agency's medium- and large-size systems.[6] A number of WUGs can join together to form an integrated water user group (IWUG), which can operate at either the secondary or primary canal level and are meant to coordinate water sharing by farmers across a broader area. RID data catalogues 1,695 IWUGs. Beyond these organisations, the agency also documents 35 water user associations (WUAs), remnants of the pre-1979 policy environment. More recently the RID has promoted joint management committees (JMCs), which operate at the system level and focus on coordinating efforts between farmer leaders of IWUGs, irrigation officials, local governments, representatives from water-using industries, and

[5] Disbursements to the OPPP for 2013 and 2014 were 41.45 and 37.15 million baht, respectively (approximately 1.35 and 1.15 million USD). This accounted for 1.79 and 1.46% of the total disbursements for the RID central offices and 0.11 and 0.092%, respectively, of the total RID budget.

[6] Wachiraporn and Sinclair (2011) reported 38,106 WUGs across the country, which included the small-scale systems. Other numbers they report do not differ substantially from those here.

agriculture officials. As of 2011, there were 170 JMCs on record, but most of these were newly established due to their recent adoption by the RID. In 2009 there were only 18.[7]

Despite the large number of WUOs across the country, RID officials consider only a small handful successful. By and large, the groups exist primarily on paper, reflecting the agency's history of devaluing farmer participation in irrigation management. A few organisations, though, do function. After consultation with the RID's Office of Public Participation Promotion as well as local experts, I selected a few of these 'successful' groups, one in each region. I then made a series of field visits to personally evaluate the groups. The criteria for evaluation are found in Table 1. If a group scored a positive mark on most of the categories, I considered it successful. If it scored as successful on only a few, then I ranked it as moderate.

Table 1. WUO evaluation criteria.

	Successful	Less successful
Irrigation agency evaluation	RID categorises the group as strong	RID categorises the group as underdeveloped
Farmer leader evaluation	Farmers feel the group is strong	Farmers feel the group is ineffective
Water user group funding	Farmers have found ways to fund their group outside of RID grants	Group relies almost entirely on RID funding
Conflict management	Group is able to diffuse conflict over water	Conflicts must be referred to the irrigation agency or local government
Water distribution	Carried out by farmer volunteers	Managed by irrigation agents or local government
Effective leadership	Leaders knew and could relate the basic information about the group	Leaders were unable to provide basic information about their group

In doing so, I apply a minimalist definition of farmer participation. Citizen participation has a variety of meanings among both researchers and practitioners, ranging from those who would define it as full empowerment of stakeholders in exercising control over an irrigation system to others who might consider participation as merely holding public announcements of policies (Arnstein, 1969; Neef, 2008). In the Thai context, farmer participation in state irrigation schemes has overwhelmingly been of the later, more superficial, nature. At best, central state agencies regarded farmer participation as a method to inform the public of government decisions and gain legitimacy for their projects (Molle et al., 2009). At worst, participation was seen as an opportunity for state agencies to manipulate and control farmers (Atthayodhin, 1968; Duncan, 1976; Sangkhamanee, 2010). Within such a context of weak approaches to participation, my evaluations focused not on an ideal of farmer control of the entire system, as might be envisioned by proponents of Irrigation Management Transfer (Garces-Restrepo et al., 2007). Instead I concentrated on a minimalist measure of participation in which farmers would be engaged in system O&M in consultation with the irrigation agency. This sets a much lower hurdle for farmer organisations in Thailand.

[7] One RID official expressed concern about the speed with which the agency was establishing JMCs. He argued that such organisations could only succeed if there were already functioning WUGs in the area. During the interview, he expressed resignation, "it is now a policy of the RID, and they'll do it anyway, whether or not strong WUGs are available" (RID Official, 2009).

I sought to pair each of the successful groups with a comparable less-successful group in the same region. I chose to focus on regional pairings, as Thailand's four main regions exhibit different geography, climate, and traditions regarding agriculture. This was the result of my efforts to make a controlled comparison based on a number of criteria that are considered important contextual factors in group performance. These included water availability, group size, cropping patterns, and farmer characteristics (Agrawal, 2003). By holding these factors constant across comparisons, I could eliminate a number of possible explanations for group success based on these controls.

Seeking to capture a variety of contexts, I chose two contrasting IWUGs in Northeast Thailand and two contrasting IWUGs in Southern Thailand. I also investigated three JMC groups, one successful group in the central plains, one successful group in the North, and one less-successful group in the Northeast. Because of the paucity of JMC groups in the country, I could not find neighbouring groups to compare them with. Instead I found two attempts to establish JMCs in the same regions and sharing some of the same characteristics as those found in the successful groups. Because these two attempts resulted in paper organisations rather than effective groups, I relied on interviews with officials knowledgeable about the attempts as well as RID records about them. While the organisations were not perfectly commensurate, they capture a broader degree of variation found in the implementation of participatory irrigation management. They also provide an opportunity to see how different approaches have allowed for success in specific cases.

During my research, I conducted over 50 semi-structured interviews with farmer leaders, irrigation officials, and local political leaders. I also attended farmer meetings, observed RID training exercises for both RID officials and farmer leaders, accompanied irrigation officials in their daily routines, accessed organisation records, and gathered data from the central RID offices. I paid special attention to identifying conditions which allowed certain groups to become more successful than others.

The characteristics of each of these cases are recorded in Table 2 below. As discussed above, these case choices were made to allow for controlling variables of interest across cases. The two failed JMC groups are not included on this table, as they existed only on paper.

Here we can see that I found three relatively successful cases: the P4 Water Management Committee in Ubol Ratchathani Province, the Krasiew JMC in Suphan Buri Province, and the Mae Yom JMC in Phrae Province. All three groups exhibited strong farmer-agency cooperation and collaboration in the management of irrigation water, and the groups are active in eliciting involvement from farmer members to engage in O&M. Members pay water user fees and/or contribute voluntary labour to the organisation. Each has won awards on the national or international level for farmer participation in resource management.

I also observed two groups that I would categorise as somewhere between successful and not successful. These groups, the P2 Water Management Committee in Ubon Ratchathani Province and the Khao Sai Weir Committee in Nakhorn Sri Thammarat, demonstrated some farmer participation in water management, but they also had a number of characteristics which limited their effectiveness. For instance, the P2 Water Management Committee has developed a close relationship with the local district government, and is able to mobilise farmers to accomplish many maintenance tasks. The group, though, is still largely dependent on the RID for monetary assistance, especially in regard to maintaining infrastructure. The Khao Sai Weir Committee is recognised as the best performing IWUG in Nakhorn Sri Thammarat, but the group still relies heavily on RID intervention and support. Because of their dependence on the irrigation agency despite having made some progress in encouraging participation, I rank these both as middling success.

Table 2. WUO characteristics.

	Region	Water source	Size	Crop pattern	Water availability	Farmer occupation	Level of success
Water Management Committee P4 (IWUG)	Northeast	Pumping from river	827 farmers 2195 ha 115 WUGs	Rice (2 crops)	Scarce during 2nd season	Farming combined with outside work	High
Water Management Committee P2 (IWUG)	Northeast	Pumping from river	851 farmers 5077 ha 153 WUGs	Rice (2 crops)	Scarce during 2nd season	Farming combined with outside work	Medium
Khao Sai Weir Committee	South	Mountain reservoir	163 farmers 180 ha 5 WUGs	Rubber, Fruit, Vegetables	Abundant	Farming	Medium
Baan Yang Weir Committee*	South	Mountain reservoir	174 farmers 164 ha	Rubber, Fruit, Vegetables	Abundant	Farming	Low
Krasiew JMC	Central	Reservoir	6740 farmers 17,700 ha 9 IWUGs 278 WUGs	Rice (2-3 crops)	Abundant	Farming	High
Mae Yom JMC	North	River	35,830 ha 62 IWUGs 528 WUGs	Rice (1 crop) Vegetables	Scarce during 2nd season	Farming combined with outside work	High
Baan Khiaw JMC*	Northeast	Reservoir	500 farmers 36 WUGs	Rice (1 crop) Vegetables	Scarce during 2nd season	Farming combined with outside work	Low

* Names altered to protect respondent anonymity.

On the other hand, I have included four less-successful groups. Each of these organisations exists primarily on paper rather than in reality. Identifying these groups was much more difficult, as the RID preferred to direct me toward successful groups. For instance, when I requested to visit the Baan Yang Weir Committee, RID employees tried to convince me otherwise, as they were not on good terms with the organisation. When I spoke to the group's leader and asked about his contact with the RID, he responded (Farmer Leader, 2012f):

> We don't see them much. We don't deal with them much. There is not much cooperation between us. The officials that I know have all retired now. The new ones are different. They are all in the office in the city. If I need to contact them I have to go to them.

The farmer went on to explain that irrigation pipes in his area had been broken for months, but no one from the area had informed the RID. Nor had officials visited to check the pipes. Such groups exhibit little communication between the RID and farmers and exist only on paper. They also manifest very little farmer effort to become involved in water management. These groups could be said to represent the vast majority of WUOs in Thailand.

Research results

As there is insufficient space here to detail each of the nine cases studied, instead I present my findings in two ways: (1) A data summary in Table 3 and (2) Two illustrative cases.

As Table 3 indicates, I evaluated these cases across a number of factors that might hypothetically have some effect on the success of these organisations. First, I looked for whether or not the group success may have been driven by local government involvement. Here I gauged whether or not local governments (1) felt pressure regarding irrigation service provision and (2) responded by supporting the groups. This was evidenced through discussions with local leaders. For instance, in the P2 Water Management Committee area, the local sub-district (*tambon*) head became heavily involved in promoting the group after making campaign promises about water provision. He had promised "water to the fields, electricity to the homes (*naam thyng naa, faj thyng thii*)", and he found the WUO a useful vehicle to accomplish the irrigation portion of his efforts (Local Politician, 2012). Only a few of the groups, though, experienced these local political pressures.

Second, I looked for support from irrigation officials (Lam, 1996; Tendler, 1997; Oorthuizen, 2003; Ricks and Arif, 2012). Most RID officials do not put a high priority on farmer participation, as they view working with farmers as beyond their job duties. More than a few officials described investing in farmers as a 'waste of time (*sia weelaa*)' because they would receive no recognition in the agency for that work. In a few cases, though, RID employees exhibited individual commitment to the participatory cause. For instance, in Ubon Ratchathani an official assigned to promote WUOs in his area had developed such a personal interest in farmer participation that he was writing an MA thesis on the farmer groups he helped cultivate. Bureaucratic incentives are discussed in more detail below.

Third, as much of the pressure for participatory management is driven by the international funding agencies (Vermillion, 1997; Mansuri and Rao, 2013), I sought evidence as to whether external pressures were present in my cases. Only three cases exhibited this international influence, as they were all part of the ADB's Agriculture Sector Program Loan (ASPL) projects. In two cases, though, local irrigation officials charged with implementation easily found ways to avoid promoting farmer participation by using funds earmarked for participation to buy computers, delaying implementation until the end of the project, or just ignoring the requirement (RID, 2004a, b; see also Abonyi, 2005; RID Official, 2012d).

Table 3. Possible explanatory factors for successful WUOs.

	Local political pressure	Supportive local politician	Supportive local RID official	Pressure from external donors	Obvious benefit to farmers	Water resource shortages	Farmers organise independently	Level of success
P4 Water Management Committee			X		X	X	X	High
P2 Water Management Committee	X	X	X		X	X	X	Medium
Khao Sai Weir Committee					X			Medium
Baan Yang Weir Committee								Low
Krasiew JMC			X	X	X			High
Mae Yom JMC	X	X	X		X	X	X	High
Lower Ping Basin	X			X				Low
Mae Lao River Basin				X		X	X	Low
Baan Khiaw JMC						X		Low

Fourth, I turned to the farmer side of the equation. Here I questioned farmers as to whether or not they perceived any obvious benefit from participating in a water user group (Hoynck and Rieser, 2002). In many cases, especially those in which some farmer participation occurred, farmers did feel that such an organisation would be beneficial. Indeed, in all the successful cases farmers received tangible benefits from their group membership. One farmer explained that the group provided better access to water. He continued, "If we have water, we can make money" (Farmer Leader, 2012a).

I also paid attention to the issue of water availability, as the literature suggests that resource scarcity may be linked with group success (Agrawal, 2003; Araral, 2009). As resources become scarce, we should see greater collective action among farmers (Bardhan, 1993). This claim found support, as independent farmer organisations functioned in almost all the cases where water availability was limited. Unfortunately, though, these organisations do not necessarily collaborate well with the irrigation agency. Instead they coordinate farmer behaviour outside of the state. In fact, in the case of the Mae Lao River Basin, the existence of active farmer groups was almost completely ignored by the local RID officials (RID Official, 2012d). Even so, having active and independent farmer groups could facilitate state efforts to develop WUOs, as long as state officials were interested in working with farmers.

Drawing on the information presented in Table 3, there appears to be no single combination of factors that emerges as determinant in explaining the level of success of a WUO. Two factors, though, do appear consistently among all of the highly successful groups as well as in one of the moderately successful groups.

First, having a supportive local RID official appears necessary to the emergence of a successful organisation. Such officials, though, are rare. Not all agency employees in Thailand believe that farmers should be involved in irrigation management, which affects how they interact with the farmers. One official from the Office of Public Participation Promotion explained that "[most] officials don't see [participatory work] as a duty; it is a burden" (RID Official, 2012g). Another official argued that working with farmers was not really part of his job. Instead it could be seen as a "waste of time (*sia weelaa*)" (RID Official, 2012f).

This attitude is embedded in the training and education of irrigation officials. Civil servants within the irrigation agency are drawn from the graduates of the RID's Irrigation College as well as engineering programmes such as those at Kasetsart University. One official commented on the education these graduates receive: "Training focuses on engineering. At most we do a visit to the field. There is no real training [in social aspects of irrigation]. There aren't people who are really interested in it. Most are interested in building things. Working with people is too difficult" (RID Official, 2012b). Sangkhamanee (2010), conducting participant observation in one of the hydrology training programmes frequented by RID officials, similarly found that instruction focused on technical knowledge and avoided the social aspects of irrigation. At another interview, a group of RID officials explained that they were trained as engineers, and they preferred to work on projects and spend time at their desks rather than interact with farmers (RID Official, 2012a). The professionalisation environment prioritises constructing irrigation infrastructure and almost completely ignores the social challenges posed by participatory work (Lam, 1998).

These proclivities are enhanced by the agency's incentive structure. The RID's employee monitoring mechanisms focus on easily identified indicators in limited time measurements, which curb the success of attempts at participation. The development of WUOs is time-intensive and difficult to measure. Successful organisations are often the product of years of effort by both farmers and civil servants. Budgets, though, are decided according to projects which can be completed in a few months to a year (RID Official, 2012d). If results are not clear after that period of time, it is unlikely that further funds will be allocated. In response, regional offices measure their participatory work by the number of organisations established rather than qualitative evaluations of the groups. This results in a large

number of paper organisations, wherein farmers' names are on membership rolls, but they are not truly involved in irrigation system management.

Also, flowing from poor internal monitoring and enforcement of participatory policies, the RID's promotion and pay rise structure lacks incentives for the empowerment and development of WUOs. The agency was established primarily for construction of infrastructure, and its engineering emphasis pervades all levels of the organisation. Officials tasked with promoting participation argue that working with farmers is not rewarded. It diminishes the amount of time which they could spend on projects and construction proposals that provide opportunities to obtain a pay rise or promotion. Indeed, reflecting agency priorities, the funding for the Office of Public Participation Promotion's budget was cut in 2012 to funnel money elsewhere (RID Official, 2012a). These incentive structures prevent officials from dedicating much time to participatory work.

Thus having a supportive local official is the exception rather than the norm in Thailand's irrigation environment. Even so, the effect of these officials is substantial.

The second factor that appears in all successful cases is that farmers benefit from being a member of the group. It is only when farmers saw a clear and obvious value to group membership that they would pay the costs of engagement with the RID. Convincing farmers of the benefits of cooperating with the RID creates a high hurdle emerging from a long history of distrust between farmers and the agency. Farmers often felt that RID officials manipulated them to accomplish government goals while never giving anything back to the communities. In the successful cases, though, benefits became obvious. For example, in the P4 Water Management Committee, the benefits of group membership are clear as are the penalties for defection. In the region, 85% of the rainfall falls during a few months of the rainy season. The rest of the year is dry. This makes it impossible to plant a second crop of rice without access to irrigation water. The organisation is able to provide enough water for farmers to plant a dry season crop. Farmers also know that defection from the organisation means a loss of access to water. Thus the group provides a selective benefit.

The impact of these two factors can be clearly seen in the case studies presented below. While space limits the opportunity to treat all cases in detail, here I discuss two of the more successful JMC organisations: Krasiew and Mae Yom. Both of these organisations were created by irrigation officials in order to facilitate better coordination between the agency and farmers to improve service provision.

Illustrative case 1: Krasiew JMC, Suphan Buri Province

Located approximately 170 km north of Bangkok on the western edge of the central plains, the Krasiew Reservoir serves approximately 17,700 ha spread across three districts, eleven sub-districts, and fifty villages. The area is part of Thailand's breadbasket that produces most of the country's rice exports. While the land irrigated by the reservoir is outside of the Chao Phraya flood plain, the topography and climate is similar. Abundant rain, averaging 975 mm per year, falls primarily from May through October, while the dry season (November through April) sees only occasional showers. Thus irrigation is necessary during this season. Broad flat plains encourage rice production, which covers 60% of the land in the irrigation system. The remainder is used for sugar cane (39%) and fruit orchards (1%). Historically, water was relatively abundant with most farmers being able to enjoy a second or even a third crop of rice, but increasing demand from the nearby town of Dan Chang has placed some stress on the irrigation water supply in recent years (see also Molle, 2005b).

Farmer participation in the system nominally began after the dam's construction in 1981 when the RID established basic water user groups for the area. At that time, though, the groups were merely paper organisations. Farmers were often unaware that they were members of an organisation, and the local RID office had complete responsibility for the system. Relationships between farmers and the irrigation agency were often antagonistic, as farmers' main interaction with officials occurred when the latter ordered them to follow RID-mandated cropping patterns and water schedules (Wachiraporn,

2010). One local RID employee explained that prior to 2001 the farmers and the RID were 'enemies' (RID Employee, 2012).

This adversarial relationship continued for almost 20 years until 2001 when the Krasiew Dam became one of the five projects for participation promotion under the ADB's ASPL programme. The RID office for Krasiew received a grant of 237.9 million baht (approximately USD 5.3 million) to increase irrigation efficiency and promote farmer participation, which was implemented from 2001 through 2003. One official familiar with the Krasiew project explained (RID Official, 2012c):

> The ADB forced us to be more involved in institution-building. They said we needed more 'software' because before our operations were different. Usually in the past when we had World Bank funding, we would just focus on building dams or canals. We would build something, then it would be abandoned because there was no one prepared to operate and maintain it. This time it was different. We had to create a human side as well.

Officials in the O&M office at the Krasiew Dam were now charged with encouraging farmer involvement in their work. The head of the local office was favourable to the ADB recommendations; he tasked the employees in his office to do what was necessary to encourage farmer participation, designating one employee to head the effort.[8] This was in sharp contrast to officials in the other ADB project sites who avoided implementing the participatory sections of the project.

However, encouraging RID employees to engage in participatory measures was difficult. The officials "didn't want to feel like they were losing power to the farmers; they felt they were losing the capacity to run things and were worried that they would no longer have a job if they implemented the programme" (RID Official, 2012c).

Farmers also resisted the process. They had a long history of mistrust with the irrigation agency, and it was difficult to convince them that the RID was genuine in its efforts. One irrigation employee explained, "[the RID] had to learn to humble ourselves. We had to get out of our cars and be the first to *waaj*[9] farmers instead of waiting for them to *waaj* us" (RID Employee, 2012). The process took an extended period of time. RID employees spent approximately three years building trust with the community before they were able to count on farmer participation.

This trust-building process took place while the mechanisms of participation were being developed. Beginning in 2001, RID employees began to visit the previously abandoned water user groups throughout the system. They held training meetings with the farmers and encouraged them to be more involved in water management. In 2002, agency officials and farmers began to establish integrated water user groups. In 2003 the JMC was established. Unfortunately, official recognition for the new organisation, a legal requirement, had to wait until 2007. Despite this delay, the RID employees and farmers moved forward.

Beyond trust-building, measurable changes in water management occurred. Through farmer participation in planning and voluntary labour, the RID and the farmers enhanced the dam, increasing capacity of the reservoir by almost 10 million cubic metres. This project was proposed by farmers, and it involved collaborative planning with irrigation engineers to place a temporary weir on top of the pre-existing dam structure. This extra water is now available for irrigation during the dry season.

Farmers also coordinate more regularly with the RID for water management. They manage and monitor water distribution at the local level within their groups, which did not happen previously. They

[8] Despite being agreeable to the ADB recommendations, most RID employees I spoke with referred to themselves as being forced (*thuug bangkhab*) to implement farmer participation.

[9] *Waaj* is a traditional Thai greeting denoting respect. Younger people or those of a lower social station are supposed to initiate the *waaj*.

also regularly call officials to coordinate water releases, informing officials if too much water has been released or if sufficient rain has fallen, so that they can close water gates to conserve resources for a later time.

Farmers and irrigation officials in the area both report that the effort to develop participatory management has been successful. One farmer leader said that through the WUOs, they feel like they are respected by government (Farmer Leader, 2012b). They also feel a sense of ownership over the system and the water in it. The change has been drastic.

Reflecting these changes, the local RID officials achieved a number of awards recognizing the success of the JMC. In 2010, the Krasiew office received an award from the Office of Public Sector Development Commission. The following year, 2011, the office was nominated for a United Nations Public Service Award. While it did not win, it was shortlisted for the award.

The shifts in the relationship between farmers and irrigation officials in Krasiew began with the ASPL programme, but they were implemented by irrigation agency employees who had personal commitments to farmer participation. This contrasts with other JMC attempts emerging from the ASPL programme. Krasiew alone succeeded, thanks to the dedication and hard work of local irrigation officials.

Unfortunately, though, RID officials within the Office of Public Participation Promotion reported that by the end of 2014, Krasiew's JMC had lost some of its earlier dynamism. They blamed the change on bureaucratic reshuffles within the RID, which moved the earlier head of the Krasiew office to another position. His replacement decided not to carry forward the same emphasis on farmer participation. Without this RID support, the cooperative relationship with farmers was slowly disintegrating (RID Official, 2014). Although the JMC still exists, its effectiveness has diminished due to change in local RID staff. Despite the fact that farmers recognised benefits from belonging to the organisation, these were insufficient to maintain it without active RID engagement. This again highlights the important role of individual commitments of local bureaucrats to the participatory cause and the lack of a set of institutional mechanisms to preserve and promote such undertakings in the RID.

Illustrative case 2: Mae Yom JMC, Phrae Province

The second illustrative case is located in the Mae Yom irrigation system in Phrae Province in Northern Thailand, geographically a vast departure from the flatlands of the central plains. The Mae Yom River flows through a valley nestled in the Phi Pan Nam Mountains before reaching the plains and joining the Nan River. Despite the area receiving greater rainfall on average than Suphan Buri (approximately 1114 mm per year), access to the water is more uneven. From May through October the valley suffers from frequent flooding while November through April the river almost runs dry. During the rainy season, water flows through the river at 1042 cubic metres per second while the dry season flow can drop to only 3 cubic meters per second.

Farmers in this area plant one crop of rice during the wet season, but they must turn to other crops for the dry season. Most farmers rely on tobacco, corn, or soybean. However, many have no access to gravity-fed water from the irrigation system during the dry season, forcing them to turn to using pumps and accessing minor rivers and streams flowing from the mountains.

The RID has expanded less in Northern Thailand than in other areas due to a long history of indigenous *muang fai* communities in the area (Ounvichit, 2005; Surarerks, 2006: Neef, 2008).[10] Even so, the RID has a number of major projects in the region, including the 350-metre concrete Mae Yom Weir located at the upstream end of the irrigation system. Construction on the weir began in 1947. RID management of the system started in 1962 and construction was completed in 1973. Water from the

[10] *Muang fai* are local organisations which develop temporary weirs (*fai*) and canals (*lam-muang*) for water management.

weir supplies two primary canals, one 64 km and the other almost 77 km. When the local RID office opened, the agency established a number of WUOs, but by the mid-1980s they were completely inactive. Most farmers preferred their *muang fai* groups which operated independently, tying together traditional irrigation practices with access to government-built systems.

In 1999, the local RID office began to suffer from labour shortages brought on by retirements. Officials from the agency made initial overtures to the *muang fai* organisations in hopes of turning over some O&M responsibilities to farmers. The farmer groups slowly began to respond (RID Official, 2012e).

Despite these incremental changes, RID officials and farmer groups still did not have a strong cooperative relationship. During the rainy season, this was not a problem, as water is abundant and the entire system is able to access irrigation (approximately 35,830 ha). The dry season, though, poses extensive coordination problems. Limited water supplies cut access to water to the point that only 2799 ha had access to irrigation.

In 2005-2006, a drought led to even more constrained water resources. Farmer conflicts over water became heated, leading to violence. Farmers and officials interviewed stated that the violence included shootings, and the upstream district blocked water flow from reaching farmers in the downstream districts. The conflicts encouraged farmers to recognise that they needed outside help to coordinate between different sections of the irrigation system. In the past, farmers were naturally grouped according to their location on the canal: upstream, middle, and downstream farmers. The farmers at the top of the system tended to take all the water during the dry season, leaving downstream farmers to rely on small rivers and streams that flowed out of the mountains into the valley (Farmer Leader, 2012d). Problems between farmers and among the different parts of the system were not being reported to the RID, and the agency was often unaware of underlying issues.

In 2006, though, things began to change. The RID transferred a native of Phrae from offices near Bangkok to head the subsection of the O&M office charged with encouraging farmer participation. After his transfer, farmers recognised a difference with the newly arrived native son in the RID. They felt as though he respected them and supported their efforts.[11] They began to petition the O&M office for assistance in coordinating water resources. They also appealed to the governor's office for help, which in turn put more pressure on the local RID office.

In response, and under direction of the new official, the RID office sought ways to coordinate the current water user groups in the canal system. Officials began to work through the 62 integrated WUGs and 528 basic WUGs spread across five districts.

As officials began their efforts, they realised that a number of other issues required coordination. During the dry season farmers had begun to take advantage of water pumps to access the canals and rivers in the area at a level too low for gravity-based irrigation. These pumps were built by the RID, but fuel for their operation was provided by the office of the Ministry of Agriculture nearby. Unfortunately, there was little coordination between the two government agencies for monitoring and operating the pumps. Also, the Monsanto Corporation had contracted farmers in downstream Den Chai District to plant corn during the dry season. The contracts were impossible to fulfil due to water limitations. These organisations needed better information-sharing in order to optimise the limited water resources for the area.

In 2010, the RID office, in coordination with the farmer groups, decided to establish a JMC after learning about the Krasiew system from the RID central offices. The goal of the organisation was slightly different from that in Krasiew where water resources were relatively abundant. In the Mae Yom JMC,

[11] One farmer commented, "Before it wasn't like this. The old RID people didn't really want to help farmers. [Official's name] had made it much better. When he came here seven years ago, the farmers got much more support. He's not like the older generation of the RID" (Farmer Leader, 2012c).

farmers are aware that they will not have the water necessary for a dry season rice crop. Instead, the goal of the organisation is to coordinate water efficiently enough for a maximum number of farmers to be able to harvest their crops. In many cases, the dry-season harvest will be limited or poor, but at least it will happen (RID Official, 2012e). Thanks to the efforts of the JMC, including coordinated farmer efforts to construct temporary weirs in the river and canals, dry-season cultivation expanded from 2799 to 9597 ha, an approximately threefold increase. Not all of this land receives much water, but it receives enough to guarantee a crop.

The organisation accomplishes this by giving downstream farmers a voice. Previously the farmers were organised primarily by their locations on the canals into three main groupings, upstream, midstream, and downstream. The JMC brings representatives of these groups together on a semi-annual basis to determine water needs along the length of the canal. Farmer leaders then take the water plans back to their respective groups for implementation (Farmer leader, 2012c, e). Upstream farmer groups have agreed to forgo their access to water for a short period during the dry season.[12] This allows downstream farmers access to three or four days of water during the dry season. Such a short window of opportunity requires strong coordination among famers so that they are prepared to receive the water when it is available. It is not enough for a rice crop, but the additional water is sufficient to provide a harvest for off-season crops such as corn, tobacco, or soybean.

While episodic collective action has long been part of the local farmers' lives (see Bruns, 1992), the JMC has also assisted in coordinating that collective action across the system. Farmers have contributed to building temporary weirs with RID assistance to create reservoirs of water for the dry season as well as direct the water toward pumps that they use during the dry season to deliver water to their fields.

Beyond managing water distribution, the JMC serves as a forum where farmers can learn about which crops are more resilient to water shortage and which crops have an expected high market value. Including industry groups like Monsanto also provides a coordinating mechanism between industry representatives and the RID to determine which areas are more likely to produce the crops they need.

The success of the irrigation system led to the Mae Yom Operation and Maintenance Office receiving the 2012 United Nations Public Service Award for Fostering Participation in Policy-Making Decisions through Innovative Mechanisms for Asia and the Pacific (United Nations, 2014). The RID officials in the local office were especially proud of this achievement, as they had been chosen for the award over groups from Australia and South Korea.

Mae Yom demonstrates the importance of both a favourable irrigation official and benefits to farmers. Initially, farmers were willing to become involved in the WUO because they recognised the negative consequences arising from their lack of collective action. The arrival of a new irrigation official in 2006 who was a native of the area also facilitated the push for participation, as he spoke the local dialect and had a personal commitment to helping the farmers. His continued presence has ensured that the success of the organisation endured into 2014 (RID Official, 2014).

CONCLUSIONS

The findings presented in this essay provide a number of contributions regarding the development of participatory irrigation management. First, much as Tendler (1997) found, the role of favourable local officials is vital to the positive relationships between state officials and farmers (see also Ricks and Arif,

[12] This required a difficult adjustment for upstream farmers, but thanks to the lines of communication opened through the JMC, social pressure became an important consideration. One upstream farmer explained, "For the first year it was pretty hard. But after that we were able to adjust to it… We know that other farmers need [the water], and we would feel bad or ashamed if we didn't behave and sent them some water. When many people are cooperating, but just one person is misbehaving, he'll turn around and cooperate because he'll be embarrassed" (Farmer leader, 2012c).

2012). Local officials are the main implementers of policies, and they are able to make important and substantive decisions on the ground about how their orders to develop water user groups should look. Thus their incentives are central to policy outcomes.

The successful groups studied here drew on the personal commitments of individual RID officials willing to bear the added information and transaction costs necessary to sustain cooperation between farmers and public officials. But, as the example of Krasiew shows, such emphasis has not been institutionalised in the agency. When these street-level bureaucrats are promoted, move, or retire, their capacity for working with farmers goes with them. If their replacements receive no reward for working closely with farmer groups and such work is routinely ignored by irrigation agency superiors, then it is highly unlikely that we will see anything more than sporadic and temporary successes.

Second, in order for farmers to become involved in these state-sponsored groups, they need to perceive some obvious benefit from their participation. This is especially challenging in environments where farmers have had a history of mistrust with state officials. When farmers feel that cooperating with the irrigation agency will not assist them in their own lives, they will avoid participation.[13] Thus the implementing agencies must build trust with farmers as well as emphasise clear benefits which they can obtain from group membership. This presents high information and transaction costs for bureaucrats, underscoring again their incentive structure.

Third, the findings highlight obstacles within the RID which inhibit the success of participatory policies. The agency's employee monitoring mechanisms, its focus on engineering, and its centralised, hierarchical nature all combine to hinder its ability to encourage farmer participation in water management. Street-level officials have few institutional incentives to actually engage with farmers, as doing so will not enhance their career prospects. Indeed, working with farmers may impede career advancement. Likewise, the short-time horizons of construction projects and budgetary cycles are largely incompatible with building WUOs. Social links among farmers and between farmers and state officials must be fostered over extended periods. Beyond this, most officials have received no instruction or training in communication skills, social organisations, or managerial techniques enhancing their capacity to facilitate farmer participation. Also, the centralised decision-making structure of the agency reduces the ability and incentives of local officials to innovate in their interaction with farmers and incorporate farmer feedback in their activities. Unless the RID seriously implements bureaucratic reforms, the best we can expect are pockets of participation contingent on personal commitments from individual irrigation officials.

Such reforms, though, present a number of political challenges (Abonyi, 2005; Molle, 2005a; Suhardiman, 2013; Suhardiman, et al., 2014). Nevertheless, the fieldwork presented above suggests a few pragmatic possibilities. First, incorporating a mandatory training module on working with farmers for all irrigation officials would be a step in the right direction. Currently, the Office of Public Participation Promotion offers a number of training workshops to help irrigation officials better encourage farmer participation. Unfortunately, regional offices do not value these workshops. Offices often send either temporary employees or officials who are on the cusp of retirement to partake in the workshops, mooting their long-term efficacy. Making such training modules mandatory for all irrigation officials would go a long way to both change mindsets and skill levels of local officials.

[13] Admittedly, the above analysis is somewhat lopsided in its focus on bureaucrats. Farmer incentives, though, are absolutely essential to the equation, as others have demonstrated (Bruns, 1992; Hoynck and Rieser, 2002; Sangkhamanee, 2010; Wachiraporn and Sinclair, 2011). Thailand's rural communities experienced extensive developments in recent decades that have changed the way they engage with the state (Walker, 2012). They have become more reliant on state provision of projects and subsidies, which has altered, and in some ways diminished, their incentives for collective action. While not explicitly addressing these issues, the above discussion underscores the fact that local bureaucrats can respond to the changing context in a locality and find methods to encourage farmer participation despite this increased reliance on the state.

Second, acknowledging participatory work in employee reviews would remove the stigma that such efforts are a waste of time. Measurement presents a challenge, but initially simplistic benchmarks might be effective, such as counting the number of farmer meetings an irrigation official attends each month. Other possibilities include obtaining positive feedback from farmers, recognising innovative efforts to incorporate farmer participation, or submitting cropping and water management plans made in collaboration with farmer groups.

Beyond Thailand, these lessons are also instructive for both policy-makers and international donors seeking to encourage more public participation in natural resource management. Greater attention must be paid to street-level bureaucrats and the internal incentive structure they face in bureaucratic agencies. Otherwise, officials will create predominately paper organisations which fulfil donor requirements while avoiding true public participation. Incentive structures should be altered from a pure focus on time-sensitive and easily visible projects to greater emphasis on service-recipient satisfaction. In so doing, the agencies would motivate local officials to better engage with communities.

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