

Water Governance for Climate Resilience: Findings from Subnational and Local Levels

Background

In response to the call for a better understanding of how communities need to act to improve adaptive capacity, the integration of local and scientific knowledge into informed decision making, and adaptive governance that serves local priorities, CDRI in 2013 embarked on a three-year participatory research program (Sam and Pech 2015). The subsequent series of linked mini-studies considered water governance and social-ecological resilience in three of the most vulnerable catchments in the Tonle Sap Basin: Stung Chinit, Stung Chrey Bak and Stung Pursat (Sam et al. 2015).

Water management in Cambodia is characterised by high spatial and temporal variations of abundant water resources. Too much or too little water is the common problem besetting rural communities and farmers in many parts of the country, especially in the Tonle Sap Basin. Finding a solution is stymied by a number of governance-related problems stemming from inequitable distribution of irrigation water, barriers to local people's participation in water management, overlapping roles and responsibilities among government institutions and under-resourced and under-developed institutional capacity. The situation is further complicated by the ability of human and natural systems to adapt quickly enough to climate change, making the need for robust, credible and dynamic local governance more vital than ever.

This article summarises the main findings of our water governance assessment in the three study catchments in the context of anticipated climate change risks at subnational and local levels (Sam et al. 2015). It concludes with a set of recommendations for enhanced water governance that can achieve water security and build climate resilience.

Site selection and data collection

The study was carried out in 2015 in three catchments—Pursat, Chinit and Chrey Bak—

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within the Tonle Sap Basin. These catchments were selected because they are especially vulnerable to climate-related risks due to both climate change and development. Primary data was collected from six farmer water user communities (FWUCs) (two in each catchment), chosen because they face water shortages, seasonal floods and water conflicts. Key informant interviews were conducted with members and the head of each FWUC. Secondary data was obtained from policy documents, reports and existing publications.

The preliminary findings were validated at provincial and national workshops participated in by local people, local authorities and FWUC members, as well as provincial and national authorities and agencies.

Key findings

The research adopted the framework used by the Earth System Governance Project for analysing the resilience of social-ecological systems, which organises the debate around five themes: architecture, accountability, allocation/access, adaptiveness and agency (Biermann et al. 2010). Likewise, the study findings are grouped under these themes.

Architecture

Governance architecture is explored from an institutional perspective including the sets of rules and procedures articulated in law and policy, or social norms, with a focus on the arrangements for state and non-state actors, and informal organisations. At subnational level, the most relevant state institutions with a water governance mandate are the Provincial Departments of Water Resources and Meteorology (PDOWRAM), Provincial Departments of Agriculture (PDA) and Provincial Committees for Disaster Management (PCDM). In the context of climate change, Provincial Departments of Environment (PDE) also play a very important role. These provincial departments are under the jurisdiction of their respective ministries and national-level committees.

At local level, the creation of farmer water user communities (FWUCs) went hand-in-hand with decentralisation and deconcentration (D&D)

reform, aiming at sustainable local management of smallholder irrigation. FWUCs are mandated to share responsibility for irrigation management with PDOWRAM, and the two institutions are to cooperate in irrigation scheme operation and maintenance. FWUCs report their activities and progress to PDOWRAM, while PDOWRAM as the top manager provides technical support. Importantly, local people are invited to participate in decision making about water management. Commune authorities are also involved in water governance at the local level, as one or more commune councillors sit on the FWUC committee or engage in water-related matters. In turn, FWUCs must report on their progress and activities to the respective commune chiefs.

Among the sectors involved in water management, the PDA's mandate to increase irrigated agricultural production is inseparable from water security. The PCDM, which is responsible for the delivery of disaster relief and provision of technical support in commune disaster risk reduction planning, mainly engages in the management of water-related hazards and risks associated with flooding and drought. The PDE is in the loop of stakeholders given jurisdiction for managing the risks of climate change impacts. Specifically, the PDE implements local mitigation and adaptation activities. The various projects focused on water management in the context of climate change have induced coordinated efforts and strengthened the links between these institutions. Even so, their limited technical and institutional capacity and inability to respond quickly enough to local issues and needs present major challenges to water resources management.

Analysis of deconcentration and decentralisation (D&D) reforms, through which subnational authorities are to develop their respective development plans to feed into national planning, suggests that D&D has moved slower than expected (MOE 2012). This stilted progress has hindered the integration of climate change adaptation considerations into water resources development and management (MOE 2012). Meanwhile, concomitant limited financial independence, institutional fragmentation and human resource gaps have obstructed the fit between institutional settings and improved capacity to build resilience. Moreover, investment, resilience building and awareness raising initiatives are mainly concentrated at the national level, leaving

many capacity gaps at subnational levels including institutional capacity and awareness.

Accountability

Accountability refers to the “responsibility of one party for their use of authority over another party” (Chheat et al. 2011, 13). Public accountability mechanisms are found to be weak at national and local government levels. Top-down communication remains dominant and this hinders access to reliable information and formal institutions. Greater attention therefore needs to be directed to improving horizontal interaction and communication (UNDP 2013). At subnational level, albeit with limitations, participation and accountability are evident through the way local authorities respond to local needs and involve local people in the planning processes for the commune development and investment plans.

Local people are asked for their ideas about local development priorities through village prioritisation meetings, which are nearly always related to physical infrastructure such as roads, irrigation canals and flood control structures. These are prioritised and listed in the commune development plan (CDP), but the decision about which of the proposed projects should be funded is made at the annual district integration workshop where the CDP is merged with line department plans (Rusten et al. 2004). Interested NGOs can then elect to support certain projects as well. Financial constraints mean that not all local requests are met. The same limited response serves the needs of FWUCs, though regular meetings ensure effective two-way communication between FWUC management committees and members.

A lack of inclusiveness and sticky information flows are found to hamper transparency. This mostly affects subnational and local actors, effectively marginalising their involvement in water governance and climate change mitigation and adaptation. Water and climate information, specifically on adaptation responses, water availability for each catchment, and observed and modelled water balance estimates, is either not readily available or easily accessible to all subnational and local authorities.

Allocation and access

Allocation of and access to key resources (physical, natural, social, human and financial) for improving water management and coping with climate change are uneven, slowing down or stopping experimentation

and innovation needed to build adaptive capacity and resilience. Irrigation schemes, for instance, which can help mitigate both flood and drought, do not operate at optimal capacity because they are badly designed, coverage is low and access to irrigation water unequal. Natural resources, including water and agricultural inputs, are quite limited with uneven access. On a more positive side, local savings groups and networks help people to both cope with flood and drought and develop their own recovery plans. Although limited in scope, such local formal and informal institutions can contribute a lot to adaptation efforts. Human and financial resources are limited as well, but are improving due to growing interest in climate change issues.

Adaptiveness

Analysis of the adaptiveness of water governance centres on the flexibility of institutional framework and institutional capacity for learning. Both architecture and agency are quite rigid in the face of abrupt climate change. Top-down approaches and lack of critical resources are the major causes of such institutional inflexibility. Monitoring and evaluation is perhaps a prime example of this dynamic. Although integrated in the commune disaster management plan, financial and technical constraints have limited monitoring and evaluation to national level, effectively locking national adaptation and resilience efforts in relatively inflexible institutional arrangements.

Ability to learn varies strongly among the diverse organisations: the greater the exposure to climate change mitigation work, the more familiar they become with problems of adaptation and develop skills to deal with them. Subnational governments as well as civil society organisations are quite well equipped with climate change awareness, while local authorities learn from the situations and disasters they have to contend with. Efforts to strengthen adaptive governance of social-ecological systems require many factors, not least accessible weather and climate information and sufficient human, technical and financial resources.

Agency

Agency in this study refers to the non-state institutions working on water governance and climate change. Non-state actors include civil society, private sector, academia, research centres,

formal and informal associations. They are found to be effective in strengthening local resilience through such supports as agricultural extension services; awareness raising about climate adaptation measures and strategies, especially for agriculture and water sectors; rehabilitation and building of small-scale irrigation and water supply structures; livelihood diversification; and the formation of local informal organisations, notably savings groups, rice banks and vegetable and livestock producer groups. These groups play a very important role in helping people cope with and recover from disasters. Other humanitarian actors such as religious groups play a vital role in helping local communities cope with climate variability and stresses through organising disaster relief efforts and donating money and supplies. Private sector involvement in water management has also become increasingly important for irrigated agriculture.

Civil society plays a vital role in climate change adaptation and water governance, with many organisations supporting local innovations. The contributions of civil society to long-term resilience face many challenges, however. Chief among these, perhaps, is the transition to sustainability when support stops. Indeed, donors' agendas and short funding cycles can preclude effective, self-reinforcing adaptation responses. The sustainability challenge is amplified by the uncoordinated, piecemeal implementation of climate change interventions (UNDP 2013). Factors that enable local authorities, NGOs and communities to coordinate and sustain adaptive capacity and resilience efforts include local networks, informal and formal institutional arrangements, community empowerment, and disaster and risk reduction planning that takes into account the ground realities (e.g. institutional, financial and capacity constraints).

The governance of water and climate change adaptation requires strong and close collaboration between national and subnational governments. Yet, despite their parallel approaches, their programs are not synergised to the point that they can smooth the implementation of policy measures at local and subnational levels. Again, a root cause of the integration challenge is the slower-than-planned unfolding of D&D: reluctance to devolve budget and authority to subnational levels has left decision-making power concentrated at the national level.

How to improve water governance for water security and climate resilience: Ways forward

This assessment has looked at water governance through the five-step adaptive management framework: institutional architecture, accountability and transparency, allocation and access to key resources, adaptiveness, and agency beyond the state. Each of the five steps has its own challenges and opportunities and yet they are interrelated. There is plenty of room for improvement to support better water governance and climate change adaptation. In spite of financial, technical and institutional constraints, opportunities and management solutions to advance water security and climate resilience that attract a lot of global technical and financial support exist. Taking these challenges and opportunities into account, the following recommendations set out some measures that could strengthen Cambodia's water management arrangements for adaptive water governance and climate resilience.

- Reorient capacity building and institution strengthening to reflect the priorities of subnational governments and local communities with consideration for local knowledge and skills and including people from diverse backgrounds.
- Recognise the role of local NGOs, informal institutions, groups and networks (i.e. agents beyond the state) in climate risk mitigation to improve the effectiveness of planned water and adaptation interventions.
- Hasten D&D processes, specifically the transfer of functions and resources, to support and empower subnational governments and FWUCs.
- Integrate climate change adaptation and disaster risk reduction measures with the strengthening of integrated water resource management to enhance adaptive capacity and reduce vulnerability.
- Smooth the free exchange and flow of information, and revise institutional structures for adaptive learning that can inform policy, planning, risk reduction and emergency preparedness.
- Promote two-way dialogue to advance accountability and transparency as well as vertical and horizontal communication for better coordination between government departments involved with water, climate change and disaster management.
- Enhance equal access to key resources with special attention to marginalised people.

- Ease access to key information on water availability and adaptation responses for local people, communities and authorities.

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