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VIEWPOINT



Learning as an everyday adaptation practice in the rural Vietnamese Mekong Delta

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ABSTRACT

The everyday adaptation practices in the Vietnamese Mekong Delta are characterized by the well-defined nuance of human–nature interactions under the compounding impacts of climate change, localized dyke development policies, and upstream hydropower dynamics. This gives rise to a so-called ‘learn-to-adapt’ approach that has been widely practised by the rural societies. This viewpoint argues that learning constitutes a key form of adaptation that enables rural farmers to bring together pools of adaptive knowledge in resolving shared problems. It particularly illustrates the significance of communicative and reflective learning practices that enable farmers to communicate and exchange experimental and experiential knowledge. These everyday practices enable farmers to make informed decisions in mobilizing necessary resources and capacity to accommodate changing conditions and secure their livelihoods at stake. The viewpoint particularly highlights how the everyday adaptation practices allow farmers to develop a variety of innovative production models which contribute to not only enhancing farmers’ adaptive capacity but also advancing rural development policies.

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Developing countries are profoundly exposed to incremental impacts of climate change and large-scale infrastructure investment (e.g. hydropower dams) that aims to boost the national economic development. In the Mekong basin, adaptation has been increasingly adopted as an essential means for rural communities to secure food security (Mainuddin, Kirby, & Hoanh, 2011) and to deal with environmental change (e.g. hydrological patterns) (Bastakoti, Gupta, Babel, & van Dijk, 2014). In the Vietnamese Mekong Delta (VMD), environmental complexities are particularly characterized by compounding impacts of climate change, large-scale water engineering (dyke development policies), and upstream hydropower dynamics (Dang, Cochrane, Arias, Van, & de Vries, 2016; Keskinen et al., 2010; Tran, James, & Pittock, 2018). In this region, adaptation is demonstrated as ways farming households ingeniously shift their livelihood strategies or cropping patterns to deal with change (Dang, Li, Nuberg, & Bruwer, 2018; Renaud, Le, Lindener, Guong, & Sebesvari, 2015; Tran & James, 2017).

This viewpoint is based on an exploratory study that was undertaken in three flood-prone communities in the VMD (Dong Thap, An Giang and Can Tho). It attempts to introduce the ‘learn-to-adapt’ concept to demonstrate everyday practices of rural communities in responding to local environmental conditions. Learning, in this light, is an inherent part of farmers’ adaptation, from which adaptation practices inform and enrich farmers’ knowledge that makes it available for further learning and sharing across communities.

The concept of adaptation, as defined by IPCC (2014), refers to the ability to cope with negative consequences, to

reduce potential damages, or to exploit beneficial opportunities driven by actual or expected stimuli. Framing adaptation as resilience, Pelling (2011) conceives of the concept as social learning and self-organization practices that enable technological innovations, new information exchange or decision-making procedures. As it is commonly acknowledged, limitations of mitigation responses in tackling current climate complexities provide greater recognition of adaptation as a requisite complement to climate change policy (Nilsson & Swartling, 2009). Given the social, cultural, and environmental characteristics of the VMD in relation to adverse impacts of climate change and other factors facing the region, defining the adaptation concept is critically important. It is closely linked to how rural societies have learned to deal with environmental conditions on the ground.

Rural inhabitants in the VMD have long adapted to local environments (Taylor, 2001). This has come to form their inherent ‘learn-to-adapt’ capacity that assists them to better respond to environmental constraints (e.g. flooding) in the delta. During the adaptation process, learning provides an important means for enabling the inheritance of constructed knowledge (e.g. traditional knowledge inherited through generations) or development of new knowledge (e.g. evolution of new knowledge through farmer networks) and helps disseminate such knowledge assets across temporal–spatial scales. This viewpoint demonstrates how learning informs everyday adaptation practices of the Mekong Delta floodplains, how it influences rural farmers’ adaptive capacity to environmental conditions.

Dyke policies and impacts

Apart from other external drivers, critical efforts in adaptation have been witnessed on the ground that are immediately linked to dyke construction. This flood-excluding approach was first initiated in a form of low dykes or August dykes, deployed by a small group of farmers in Cho Moi district, An Giang province to prevent the early entry of excessive floods into crop fields (Howie, 2011; Nguyen, Pittock, & Connell, 2019). Promoted by the local government and thereafter the central government, this autonomous initiative was soon put into practice and distributed across the floodplains. Low dykes were pragmatically translated into high dykes to enable triple-rice cropping systems in low flooding areas. Dyking, in this regard, is perceived as an ad-hoc approach spearheaded by rural farmers to manage excessive floodwaters and to secure their year-round farm-based livelihoods. However, while contemporary phenomena of climate-related factors (e.g. rising temperature, flooding, etc.) are getting prevalent and increasingly unpredictable (ADPC, 2003; Le & Chinvano, 2011), their interactions with other external drivers (hydropower dam development in the Mekong basin) associated with altered flood regimes in the VMD present a critical question as to whether dykes would foster or inhibit rural adaptation.

Until presently, dykes have been consistently anchored in local governments' policies as key policy instruments to promote their rice-based socio-economic development agenda. The development of dyke systems together with irrigation systems allow triple-crop systems, enable land transport in raining seasons, and protect household assets. While the role of dykes is acknowledged, they create multiple constraints to local social-ecological systems. Dyke structures prevent fish from entering rice fields. There has also been substantial decline in other aquatic resources in dyked areas (e.g. water lily, etc.), which disrupts the seasonal income of the majority of rural inhabitants, especially the poor (Tong, 2015; Tran & James, 2017). The overuse of pesticides driven by the intensive rice production (Berg & Tam, 2018) together with the illegal utilization of electrical shock devices for wild fish capture have resulted in significant reduction of fish stocks in the floodplains (Mekong Commons, 2014). These social-ecological disturbances resonate with Mertz et al.'s (2009) claim that dyke building might increase cultivated areas but simultaneously impacts on local ecosystems that support livelihoods.

Dyke building, on the one hand, provides better opportunities for one, but on the other hand, creates more hardships to others (Tran & James, 2017). This viewpoint suggests that the instability of rural employment, driven by dyke development policies and the booming of agricultural mechanization in recent years has plagued the rural poor that depends largely on seasonal employment. While better-off farmers are able to maximize their benefits on their farmlands, their deployment of machinery for agricultural production (e.g. combined harvesters) comes to take away traditional means of survival of the poor, such as rice harvesting or straw shaking. The squeeze of rural employment induced by this mechanization process tends to push poor farmers into the state of tenacious impoverishment. To secure income stability, they therefore have to migrate to urban areas in search of work (Tran, 2019). Those

who remain to stay back in rural areas have become increasingly dependent on landowners for precarious earnings.

Structural intervention led by the state stimulates adaptive responses at the farm level. Transforming rural livelihoods is a key component of farmers' adaptation, indicating their flexibility in shifting from traditional farming (flood-based approach) to alternative systems (dyke-based approach) (Tran & James, 2017). Farmers make creative use of local dykes and flood availability to develop new agricultural (non-rice crops) and aquacultural production models, from which they could earn higher income in the flood season (Chu, Suhardiman, & Le, 2014). They are more capable of mobilizing knowledge from various sources including their own experiential knowledge, scientific knowledge from experts or local institutions, and Internet resources (Tran et al., 2018). Farmers have also become more sensitive to perceived external uncertainties. Faced by recent fluctuations of rice market, farmers have confidently switched to non-rice crop patterns to yield higher returns. These endeavours illustrate the crucial role of learning farmers play in responding to changing conditions as discussed in the following section.

Learning as a pathway for adaptation

The 'living-with-floods' approach traditionally practised by farmers and thereafter promoted by local governments can be reframed as 're-adaptation' that comes to terms with adverse effects of existing infrastructural systems (e.g. flood control and irrigation schemes) in support of rural livelihoods (Lebel & Bach, 2009). Re-adaptation, in this sense, can be defined as self-reliance of rural societies in dealing with new environmental conditions driven by dykes (Dang et al., 2016). Environmental conditions in the post-dyke context make it impossible for the rural societies to get back to the original form of adaptation, but forcibly adapt to it (Tran, *in press*). At the farm level, re-adaptation evidence suggests ways farmers generate innovative farming practices and employ possible strategies to improve their capacity in adapting to change (Tran et al., 2018).

Various forms of learning are exhibited in the everyday adaptation practices in the VMD. They provide a social means for building learning networks, whereby innovative ideas are constructed, practised, and disseminated across geographical scales. The spatial evolution of learning makes an important contribution to expanding the 'boundary' of knowledge acquisition that is conventionally physically bound in rural communities. Evidence suggested that farmers acquire knowledge by transcending their learning from one place to the other, through which their knowledge is continuously modified and adopted through multiple phases of on-field experimentations (Tran et al., 2018). While these practices are perceived as 'mobile learning', formal learning through in-house seminars and workshops is termed as 'fixed learning'. The latter provides important platforms for farmers to interact with extension officials and agricultural experts and simultaneously to self-evaluate their experimental and experiential knowledge, from which they learn. Farmers can also interact with and learn from 'model farmers' (*nông dân giỏi*) who are invited to share practical knowledge with participants.

Learning in the VMD is particularly prominent in informal settings, taking place in rural ‘communities of practice’ (Tran et al., 2018). These forms of interactions provide broader space and flexibility for co-production and sharing of knowledge among farmers or between them with those within their immediate (bonding) networks. Various learning patterns were observed. As a common practice, farmers often engage in convivial activities (e.g. tea or coffee breaks, family celebrations ...), through which farmers meet up, share updated information and obtain instructive knowledge relevant to their crops (e.g. pest management). Farmers can even judge each other’s views or engage in critical debates whereby new ideas evolve and are built into a potential innovative farming practice. Additionally, farmers learn from each other while working on fields. While taking a rest, they often invite each other a cup of tea so that they can consult and share technical advice on crops. Field visits are also the common practice that farmers participate to learn more about innovative farming practices. Taken together, these learning patterns characterize important cultural aspects of the rural societies that have long existed in the delta. As evidenced, these spirits form and strengthen capacity and a sense of collectiveness in sustaining supportive networks and promoting mutual assistance among community members when confronting with environmental challenges (Taylor, 2001).

Learning makes ways for innovations to emerge. As stated by Dolinska and d’Aquino (2016), innovations emerge from an interaction between a set of agents who contribute to the production, exchange and use of knowledge. In the same vein, the evolution of innovative farming practices in the VMD is largely derived from ways farmers interact with one another (learning through communication and social interactions), and ways they learn by themselves (learning through self-reflection). These dual learning approaches facilitate the transformative process of knowledge which occurs by virtue of farmers’ incorporation of adopted knowledge somewhere into their own knowledge through self-learning practices. It was evidenced that farmers’ accumulation of experimental and experiential knowledge guided by such dual learning approaches coupled with their life-long interactions with natural environments enables farmers to creatively capitalize on existing environmental conditions to benefit their livelihoods (e.g. giant freshwater prawn farming in flood conditions) (Tran et al., 2018). These strands of knowledge are proven useful to assist farmers in enhancing their skills and capacity to overcome everyday livelihood challenges.

It is worth noting that the innovative knowledge constructed from farmers’ adaptation in the VMD constitutes an important component in local farming knowledge systems and development policies. Successful adaptation models initiated by farmers create a so-called ‘latent power’ which enables farmers to empower themselves and to negotiate policy change (Tran, Pittock, & Tuan, 2019). To a certain degree, it challenges the predominant scientific (expert) knowledge in place for flood management and crop production (Tran & Rodela, 2019). This strikingly echoes Chambers et al.’s (1993, p. 3) views on the overshadowed role of farmers who are ‘professional specialists in survival, but their skills and knowledge have yet to be fully recognised.’ At the household level, farmers are key actors in adaptation (Dang, Li, Nuberg, & Bruwer, 2019). They grasp

possible opportunities to transform their farming practices (e.g. farming diversification) to accommodate the new physical and environmental conditions of the delta (Chu et al., 2014; Tran & James, 2017). This viewpoint contends that farmers in the VMD are ‘fire keepers’ who sustain the revival of the rural landscapes through ways they contribute to developing and disseminating local farming innovations across geographical boundaries. The role they play in advancing rural development policies (e.g. incorporating innovative farming practices into local adaptation policies) is highly acknowledged and practically significant.

This viewpoint confirms farmer-led learning as an effective approach to farm-level adaptation in the VMD. It characterizes the unique dimension of the ‘riverine’ civilization, especially in the face of detrimental impacts of climate change as well as local and regional development dynamics. Everyday adaptation through ‘learn-to-adapt’ practices provides an important entry point to further explore the nature and ongoing dynamics of human-nature interactions in the new environmental context in the delta. It informs a nuanced understanding of iterative feedback between an individual learner (farmer) and his environment with the learner changing the environment and the environmental changes affecting the learner (Tàbara & Pahl-Wostl, 2007). In connection of such human-nature dynamics to the social, cultural, and environmental context of the VMD, the viewpoint highlights that learning is truly an essential adaptation approach that helps transform rural societies as a whole into ‘critical and strategic’ learners in making sensible decisions to deal with local environments.

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Notes on contributor

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