"Nothing for free": Intermediary actors and cross-scalar knowledge translation for climate adaptation in the Mekong Delta

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Abstract

In Vietnam, an entire multilevel governance apparatus is now engaged in furthering the climate adaptation agenda, much of it focused on the Mekong Delta. A politics of translation is at the heart of these operations, as differently situated actors reproduce, negotiate, and mobilize knowledge for adaptation in pursuit of varied objectives. In this article, I examine the role of intermediary actors that work as knowledge brokers and translators, transmitting knowledge upwards, downwards, and horizontally within this governance system, influencing adaptation practice in the process. Drawing on cross-scalar ethnographic research with Vietnamese scientists and researchers, development practitioners, agricultural extension agents, and provincial-level bureaucrats, it considers the agency these actors have in shaping the trajectory of socio-ecological change in the delta. Exploring strategies of translation and the interests they reflect, it finds that knowledge for adaptation is largely constrained by the dominant economic development agenda, where neoliberal discourses and state goals of "building socialism" intersect in defining the success of adaptation and its ideal subjects. Finally, the article identifies contestations and switch-points that occur and seeks to identify potential openings for transformative pathways to emerge.

Keywords: Climate adaptation, intermediary actors, knowledge brokers, translation, Vietnam, Mekong Delta

Résumé

Au Vietnam, tout un appareil de gouvernance multi-niveaux est désormais dédié à la poursuite de l'agenda de l'adaptation au changement climatique, avec un large ancrage dans le delta du Mékong. Au centre de ces opérations s'opère une politique de traduction, selon laquelle des acteurs différemment situés reproduisent, négocient et mobilisent des connaissances pour l'adaptation, tout en poursuivant des objectifs divers. Dans cet article, j'examine le rôle des acteurs intermédiaires qui œuvrent en tant que courtiers et traducteurs du savoir, transmettant les connaissances de manière ascendante, descendante et horizontale au sein de ce système de gouvernance et influençant les pratiques d'adaptation dans le processus. M'appuyant sur une recherche ethnographique multi-échelle menée auprès de scientifiques et chercheurs Vietnamiens, de professionnels du développement, d'agents de vulgarisation agricole, et de fonctionnaires provinciaux, je considère l'agentivité que ces acteurs déploient pour orienter la trajectoire de changement socio-écologique du delta. En explorant les stratégies de traduction et les intérêts que celles-ci reflètent, il apparaît que le savoir pour l'adaptation est largement contraint par l'agenda de développement économique dominant, où les discours néolibéraux et les objectifs étatiques de « construction du socialisme » s'entrecroisent dans la définition du succès de l'adaptation

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et de ses sujets idéaux. Cet article se conclut en identifiant des contestations et des points d'inflexion existants et en cherchant à identifier des ouvertures potentielles pour l'émergence de chemins transformatifs.
Mots-clés: Adaptation au changement climatique, acteurs intermédiaires, courtiers du savoir, traduction, Vietnam, delta du Mékong

Resumen

En Vietnam, todo un aparato de gobernanza multinivel se dedica ahora a impulsar la agenda de adaptación climática, gran parte de ella centrada en el delta del Mekong. En el centro de estas operaciones se encuentra una política de traducción, ya que agentes situados en distintos lugares reproducen, negocian y movilizan conocimientos para la adaptación en pos de objetivos diversos. En este artículo examino el papel de los agentes intermediarios que actúan como intermediarios del conocimiento y traductores, transmitiendo el conocimiento hacia arriba, hacia abajo y horizontalmente dentro de este sistema de gobernanza, influyendo en la práctica de la adaptación en el proceso. A partir de una investigación etnográfica a distintas escalas con científicos e investigadores vietnamitas, profesionales del desarrollo, agentes de extensión agraria y burócratas provinciales, se examina el papel de estos agentes en la configuración de la trayectoria del cambio socioecológico en el delta. Explorando las estrategias de traducción y los intereses que reflejan, se constata que el conocimiento para la adaptación se ve limitado en gran medida por la agenda de desarrollo económico dominante, en la que los discursos neoliberales y los objetivos estatales de "construcción del socialismo" se entrecruzan a la hora de definir el éxito de la adaptación y sus sujetos ideales. Por último, el documento identifica las impugnaciones y los puntos de inflexión que se producen, y trata de identificar posibles aperturas para que surjan vías de transformación.
Palabras claves: Adaptación al cambio climático, agentes intermediarios, intermediarios del conocimiento, traducción, Vietnam, Delta del Mekong

1. Introduction

> The people that don't want to adapt, get poor. The people that want to adapt, they got rich already.
>
> – Applied agricultural scientist, Trà Vinh University

> I'm not afraid because I can say no to what I don't like. That's the thing. And behind me, there's a gang of scientists. Everybody is my buddy, you know? We share the way of thinking, so we are like an alliance.
>
> – Regional scientific expert, Cần Thơ

One afternoon in late 2016, I found myself sitting in Trâm's[2] office in the Department of Agriculture and Aquaculture at Trà Vinh University (TVU), sampling shots of local "wood apple" wine (*rượu trái quách*) that her department produced and was preparing to market. While awaiting permission from the Provincial People's Committee to carry out formal research activities, I discovered the value of forging relationships with people who could act as key informants and gatekeepers (Scott *et al.*, 2006), providing access to data and personal contacts, and generally helping me navigate the institutional, cultural, and ecological complexities of the province. Trâm had been particularly helpful in this regard, and we had developed a warm friendship. Early mornings, I often joined her and her friends for coffee. They included other agriculture and aquaculture researcher-technicians from TVU, extension agents from the provincial Department of Agricultural and Rural Development, and program staff from AMD, an internationally funded climate adaptation project. They would occasionally invite me to join them on farm visits for technical training workshops or field assessments, and generously shared program documents and valuable perspectives on my research. That day, I was following up with Trâm to ask for a copy of an AMD project report on which she had collaborated. Downing the shot in front of her, she looked at me and responded in English, "nothing for free."

[2] All names used are pseudonyms.

I was familiar with this refrain, and its Vietnamese equivalent, "*Ikhông có gì miễn phí*," which was something of a catchphrase for Trâm, always said with a wink and a playful smile. Although she did not expect anything immediately in return, it was her way of acknowledging that she was doing me a favor and some sort of reciprocity would eventually be expected (Bauer, 2011; MacLean, 2013). Over time, however, I came to see this statement as representative of the way knowledge for and about climate change adaptation is used in Vietnam: transactionally, within a political economy of development that values such knowledge as a strategic resource and privileges the ability to use it to turn a profit (Bauer, 2011; Benedikter, 2014; MacLean, 2013). In this system, intermediary actors like Trâm and her friends – researchers, extensionists, and others working in rural development practice – play an important role in translating knowledge that influences the trajectory of social-ecological change under the banner of "adaptation to climate change." But they do so within a system of structural constraints they must navigate to advance both personal and public interests.

In recent years, scientific and development discourses have identified the Mekong Delta as highly vulnerable to the effects of climate change, sea-level rise in particular, with adaptation generally described as a great imperative (Dasgupta *et al.*, 2007; McElwee, 2017; MDP, 2013; Smajgl *et al.*, 2015). Home to nearly 18 million people, the delta is known as Vietnam's rice basket, an area of high agricultural productivity responsible for around a third of the country's GDP (Tam, 2015).[3] Under extreme scenarios, this low-lying area could face nearly 40% inundation over the next the century, threatening the livelihoods of millions of people and stressing domestic and international food supply (Tran Thuc *et al.*, 2016). Already, saltwater intrusion is a growing challenge in much of the delta, compounded by rising temperatures, frequent droughts, and local and upstream infrastructure developments that restrict deposition of needed sediments and access to freshwater (Keskinen *et al.*, 2010; Smajgl *et al.*, 2015; Tuan & Chinvanno, 2011).

Because adaptation actions can be initiated at multiple levels, from individual livelihood changes to national policy instruments and in between (Adger *et al.*, 2005), successfully coordinating efforts requires effective communication and knowledge exchange among state and non-state actors at multiple levels of governance, including scientists, policymakers, and local stakeholders (Amundsen *et al.*, 2010; Dewulf *et al.*, 2015; McElwee *et al.*, 2010). To promote social-ecological resilience, scholars stress the need for social learning and knowledge exchange across scales to enable flexible, responsive, and adaptive governance (Folke *et al.*, 2005; Hulke & Diez, 2020; Nelson *et al.*, 2007; Pahl-Wostl, 2009). For institutions to be responsive to local needs, knowledge must be transmitted effectively upwards as well as down within hierarchical systems of governance (Agrawal & Ribot, 1999). Yet, as critical scholars have long argued, knowledge itself is political; one of the ways power functions is through knowledge and discourse (Foucault, 1980). Understanding the political dynamics around knowledge production, reproduction, and exchange is therefore crucial to any thorough assessment of the prospects for adaptive governance (Côte & Nightingale, 2012). Moreover, political ecologists and science studies scholars have critiqued linear models of knowledge transfer and policy implementation. Knowledge and its expression in policy, they demonstrate, are never simply applied in a linear fashion with direct and predictable results. Rather, they are reinterpreted, selectively appropriated, and transformed through socio-political processes (Jasanoff, 2004; Keeley & Scoones, 2003; McFarlane, 2006).

Drawing on actor-network theory (ANT) and its extensions in development studies, this article examines the agency of intermediary actors in environment and development practice as they broker and translate knowledge between actor groups and across levels of governance. While many authors address the political nature of climate change adaptation (e.g. Javeline, 2014; Nelson *et al.*, 2009), including the politics of knowledge (Côte & Nightingale, 2012; Eriksen *et al.*, 2015; Goldman *et al.*, 2018), few consider explicitly the politics of *translation* involved as knowledge is transmitted across scales and networks to be implemented in practice. Based on ethnographic research with Vietnamese scientists, bureaucrats, local researchers, rural development practitioners, and agricultural extension agents, this article answers the question: *How do intermediary actors working on climate adaptation in the Mekong Delta broker and translate knowledge across levels of governance, and what interests or agendas are reflected in the process?* I argue that the domain of

[3] The Mekong Delta is responsible for the majority of Vietnam's rice and aquaculture exports, and close to two thirds of its land area are devoted to agricultural purposes, with nearly 70% of people working in agriculture, forestry, or fisheries (Le Thuy Ngan *et al.*, 2018).

climate adaptation in Vietnam has opened a political space for certain actors to have a renewed voice, agency, or influence over the trajectory of socio-environmental change and development in the delta. At the same time, this is a space of contestation, with complex power dynamics and constraints at play. An analytical focus on intermediary actors and the politics of translation helps to unpack and illuminate these complex dynamics.

Conceptual-analytical framework: Intermediary actors and the politics of translation

Attention to intermediary actors as brokers and translators has been the focus of much work applying actor-network theory in political ecology and development studies (Heeks, 2013; Keeley & Scoones, 2003; Lewis and Mosse, 2006; Mosse, 2005). "Brokers" here refers to actors that operate at the interface between two or more social worlds, governance levels, or knowledge systems, helping to "reveal their importance in negotiating roles, relationships, and representations" (Mosse & Lewis, 2006, p. 10). I draw on the related concept of "translation," building on theorizations in literary studies that emphasize the agency of the translator (Benjamin, 1996[1921]; Spivak, 1993), through its use in actor-network theory (ANT) and later deployment in development studies to refer to processes of "mutual enrollment and the interlocking of interests that produce project realities" (Mosse & Lewis, 2006, p. 13). The ANT perspective highlights the discursive and relational strategies actors use to connect and extend networks, standing in as spokespersons for others' knowledge and interests while funneling and reinterpreting them through an "obligatory passage point" (Baiocchi *et al.*, 2013; Callon, 1986; Latour, 2005). In this view, knowledge, power, and influence can be understood as network effects, stabilized and strengthened through the expansion of associations between people, objects, and ideas (Law, 1992). This perspective sheds light on the interpretive or translational agency of actors as they enroll allies and negotiate meanings (Choy, 2011; Corson *et al.*, 2014; Gal, 2015; Witter *et al.*, 2015), transforming knowledge from one context, scale, or frame of reference to the next, including by embedding it in material forms and practices (Brosius, 2006; McElwee, 2016; McFarlane, 2006; Tsing, 2005; Weger, 2019). This work may be mediated by artifacts such as technologies or texts (Latour, 2005), including reports and policy documents, which help draw together associations of people, places, and things as they coproduce their objects of governance (Hull, 2012; MacLean, 2013).

Scholars in related fields have also highlighted the pivotal role of intermediary actors that share knowledge in contexts of networked and multi-level governance. Attention to such key actor groups as scientists (Grundmann, 2016; Hegger *et al.*, 2012; Zink, 2013), bureaucrats (Benedikter, 2014; Hull, 2012; Korbee *et al.*, 2019; MacLean, 2013; Reis, 2012), and agricultural extension agents (Hicks, 2004; Taylor & Bhasme, 2018; Tran and Rodela, 2019) has demonstrated their agency as not only translators but *brokers*, linking and negotiating between knowledge producers, policymakers, and knowledge users, and thereby influencing policy implementation and socio-material outcomes (see also Dewan, 2021). Social network studies similarly note the important bridging function of certain well-connected intermediate-level actors that enables them to transfer knowledge across otherwise disconnected networks while shaping that which is transmitted in the process (Bodin *et al.*, 2006; Burt, 2004; Ernstson *et al.*, 2010).[4] Such actors are recognized as crucial in facilitating the social learning, cooperation, and cross-scalar coordination necessary for adaptive governance and transformations to sustainability (Bodin, 2017; Bodin *et al.*, 2020; Eguavoen *et al.*, 2015; Ernstson *et al.*, 2010; Olsson *et al.*, 2006; Pahl-Wostl, 2009; Vogel *et al.*, 2007; Westley *et al.*, 2011), yet few studies address the political dynamics and implications of their translations for shaping adaptation to climate change in practice.

The focus of this article is on the translational agency of actors who occupy the intermediate space between the "high level" of planners and policymakers on the one hand, and the "on-the-ground" level of implementation by farmers on the other, as they translate knowledge for the sake of climate adaptation. However, as Gal (2015, p. 232) reminds us, there is really no "middle": rather, translations occur at multiple interdiscursive points, producing translation chains that may include practices of inscription, selective appropriation, or discontinuities in information flows (Le Meur, 2006). Here, I use "knowledge" broadly to

[4] My use of "intermediary actors" here is not to be confused with Latour's (2005) distinction between (human or non-human) "mediators" and "intermediaries," of which the latter are simply conduits for unadulterated information. Rather, "intermediary actor" in my usage denotes a structural position within multi-level networks of governance, a human actor with translational agency—in this sense, a mediator.

refer to information, ideas, or practices mobilized in the name of climate change adaptation and reflective of particular identities, interests, and power relations (Foucault, 1980; Haraway, 1988; Keeley & Scoones, 2003). In contrast, by "expertise" I mean a kind of acquired epistemic authority, implying a social role ("experts") laden with prestige and power. Expertise "has to come into being, maintain stability and undergo challenge" (Beck & Forsyth, 2015, p. 114), and is socially valued for its role in guiding action (Grundmann, 2016). However, the distinction between "expert" and "lay" knowledge is itself a fabrication (Forsyth, 2003), the result of existing asymmetrical power relations between, for instance, scientists or government actors and farmers. These knowledges are often mediated by powerful national, transnational, and global discourses, meaning they both reflect and shape institutional practices, including policymaking and implementation (Adger *et al.*, 2001; Ferguson, 1994; Keeley & Scoones, 2003). A focus on the knowledge practices of farmers, and the creation of hybrid knowledges across scales, will be the subject of a future article.

Methods

This article emerges from my larger doctoral research project on the transnational and multi-level governance of climate change adaptation in the Mekong Delta. It takes inspiration from institutional ethnography (Billo & Mountz, 2015; Corson *et al.*, 2014; Nader, 1972) in accounting for the structures, norms, practices, and discourses through which knowledge for climate change adaptation is translated by intermediary actors, a broad category. Research for the article was carried out between October 2016 and January 2018 primarily in Trà Vinh province, in the coastal Mekong Delta of Vietnam, as well as during visits to regional hubs Cần Thơ and Ho Chi Minh City (HCMC). In Trà Vinh, I was hosted by a small research center under the auspices of Trà Vinh University (TVU), the Center for Scientific Research and Production Services (CSP). Data on which the article is based are drawn from semi-structured interviews (N = 62) with Vietnamese scientific experts and researchers, agricultural extension agents, provincial bureaucrats and government officials, as well as journalists and foreign development professionals; participant-observation of farm visits, extension workshops, project meetings, and conferences on climate adaptation, agriculture, and sustainable development; and countless informal conversations with colleagues, friends, and acquaintances over coffee or food and drinks. Initial interviewees were selected based on conversations with colleagues from my host institute and TVU, and from there a snowball sample grew as they identified other actors considered important to the field of climate change adaptation in the area. Thus, my findings reflect the way this field was perceived by those working in it directly. Interviews addressed such topics as respondents' professional activities and responsibilities, their understandings of "climate change adaptation" (*sự thích ứng với biến đổi khí hậu*) and ideas about its implementation, and their collaborative or communicative interactions with other stakeholders. In addition, I reviewed key agency and policy documents and frequently surveyed local newspapers to triangulate for complementarity and dissonance across multiple sources (Nightingale, 2009).

In this article, I focus on the knowledge brokerage and translation practices of select intermediary actors at the regional and provincial levels, namely: agriculture and rural development researcher-practitioners,[5] extension agents, staff of an official development assistance (ODA)-funded climate adaptation project (AMD), and regional scientific "experts." In the following section, I present a brief overview of Vietnam's governance system as it pertains to climate adaptation in the delta, and describe the relevant network of actors highlighted herein. Then, drawing on ethnographic data, I elaborate three dimensions of the politics of translation uncovered by the research: (1) the structural and financial constraints shaping knowledge sharing practices by researchers and practitioners; (2) the translation of knowledge into farmer livelihood models;[6] and (3) the specific agency

[5] This group includes applied scientists, researchers, and agricultural technicians that provide outreach to farmers as well as insights and advice to provincial authorities and tend to operate primarily at the provincial level. Vietnamese farmers often simply refer to people in this position (me included) as "*kỹ sư*" (engineer). I use the designation "researcher-practitioner" to distinguish them from extension agents (working for the provincial extension office), though their activities overlap a great deal, and also from more widely known and highly regarded scientific "experts," who are more likely to work across several provinces. The latter are also typically based in the larger urban hubs of Cần Thơ and Ho Chi Minh City (HCMC).

[6] By "livelihood models" I am following the Vietnamese terminology (*mô hình sinh kế*), to refer to particular agricultural technologies (high-yielding and high-value crops/seeds, irrigation technology, fertilizers, intensive cropping patterns), typically introduced and promoted in modular form.

of scientific experts. Finally, I summarize and reflect on key themes revealed by these segments and their implications and opportunities for the governance of climate change adaptation in the delta.

2. Vietnam's governance setting

In 1986, a series of liberalizing political and economic reforms known as *Đổi mới* ("Renovation") were launched at the Sixth National Congress of the Vietnamese Communist Party (VCP), formally initiating the country's transition from Soviet-style central planning towards what is officially known today as a "socialist-oriented market economy." While these reforms and concomitant reintegration into global markets heralded significant economic development in the decades to come, there has been less change in the political-administrative realm, where the VCP maintains a monopoly on power and adheres to Leninist institutions of governance (Benedikter, 2016; Benedikter & Nguyen, 2018; Gainsborough, 2010b; MacLean, 2013). By legalizing private ownership and commerce, reducing subsidies for state enterprises, and providing a greater role for foreign investors, reforms paved the way for high rates of economic growth and rising standards of living throughout the 1990s and 2000s (Benedikter, 2016; Benedikter & Nguyen, 2018). The dismantling of state-run agricultural collectives and promotion of household-level food production helped bring the country back from the brink of famine and established a thriving agricultural export economy, particularly in rice and driven largely by the Mekong Delta (Do & Iyer, 2008; Taylor, 2004).[7] Yet the VCP maintains a firm grip on the country's overall policy direction through top-down planning, a swelling bureaucratic apparatus, and "civil society" participation channeled mainly through party-affiliated mass organizations[8] (Benedikter, 2016; Salemink, 2006; Zink, 2013). In this context, the party-state has increasingly relied for continued legitimacy upon its ability to sustain economic performance (Benedikter, 2016; Vasavakul, 2019) while maintaining a degree of responsiveness to societal concerns (Kerkvliet, 2001; Mattner, 2004; Reis, 2012).

The Vietnamese state is defined by the tight coupling of the VCP, which exercises political leadership at all levels, with the parallel structure of the government, which administers daily affairs. The Central Committee of the Communist Party determines the country's overall political course, and through the principle of democratic centralism, all decisions made at higher levels must be implemented at levels below (Benedikter & Nguyen, 2018; Phuong *et al.*, 2018). A system of rigid top-down planning and bottom-up reporting is distributed across national, provincial, district, and commune levels (see Figure 1). Sectoral line agencies, where most of the planning authority resides, are hierarchically subdivided into national-level ministries, provincial-level departments, and district-level offices. These are subject to a system of dual subordination, where each level is answerable both to the one above it and to the People's Committee at the same jurisdictional scale (Benedikter, 2016; Benedikter & Nguyen, 2018). People's Committees are responsible for integrating national development strategies into local socioeconomic development plans (SEDPs), signing the legal documents used for day-to-day governance activities, financial disbursement across policy sectors, and translating lower-level requests into formal proposals to be sent to higher levels for approval (Benedikter & Nguyen, 2018; Phuong *et al.*, 2018). However, due to administrative restructuring, institutional overlap, and unclear allocation of mandates, the planning landscape has in recent decades become increasingly fragmented and uncoordinated (Benedikter, 2016; Benedikter & Nguyen, 2018; Seijger *et al.*, 2019; Vasavakul, 2019).[9] Plans are formulated

[7] It should be noted that despite these positive developments, like much of the country, the Mekong Delta has also witnessed rising socioeconomic inequalities, areas of persistent poverty, and growing rates of landlessness (Akram-Lodhi, 2005; Garschagen *et al*., 2012; Gorman, 2019; Taylor, 2004).

[8] Under the umbrella of the Vietnam Fatherland Front and funded by the state, these include such organizations as the Vietnam Farmers' Union, Women's Union, and Ho Chi Minh Communist Youth Union. They are responsible for disseminating information, supervising and mobilizing citizens, implementing policy, and recruiting new party members (Kerkvliet, 2001; Quan Thi Thanh Hai, 2017; Vasavakul, 2003).

[9] Benedikter and Nguyen (2018) cite a total of 19,285 planning documents in effect during the 2011-2020 period, scattered across administrative levels and the country's 63 provinces and municipalities. Yet there is often a lack of coordination "between ministries, between provinces, and between the ministries and the provinces" (Seijger *et al*., 2019, p. 7), with consequences for issues such as land and water management and infrastructure, which necessarily cut across jurisdictional boundaries. However, in October 2017, the government approved a new Law on Planning which seeks to overcome these

in terms of – often overly ambitious – quantitative targets in such sectors as socioeconomic development, agriculture, and industry, so that performance can be evaluated against numerical benchmarks (Benedikter & Nguyen, 2018; Seijger *et al.*, 2019).

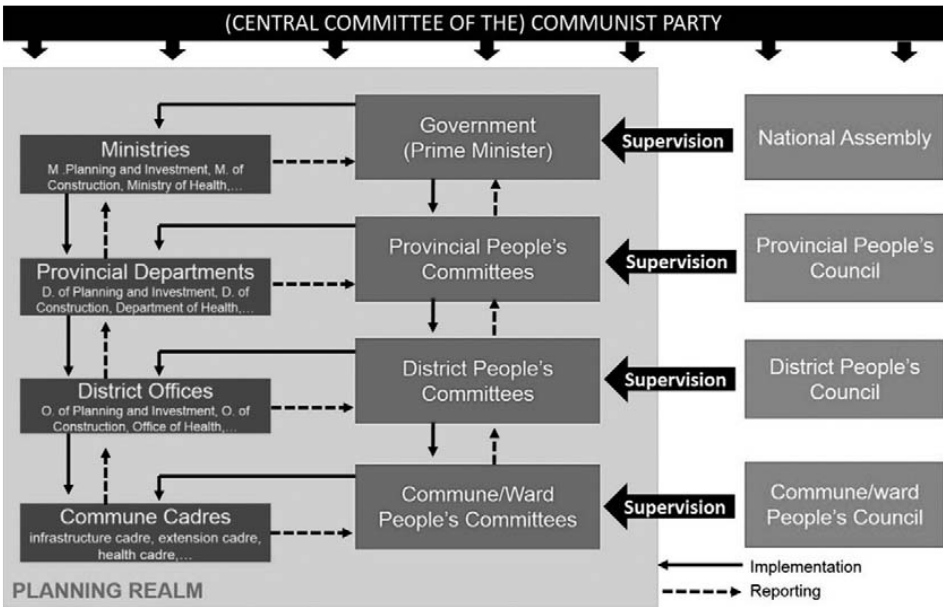

Figure 1: Simplified organizational chart depicting Vietnam's planning system. Source: Benedikter and Nguyen, 2018, p. 7.

Despite some reforms that have transferred greater fiscal and administrative responsibilities to the provincial level, formal decision-making power remains largely centralized, with little downward accountability (Benedikter, 2016; Fritzen, 2006; Vasavakul, 2019). Nevertheless, numerous studies have documented the informally decentralized nature of governance in Vietnam, where despite its heavy-handed reach Hanoi often holds little control over everyday affairs in practice, and enforcement largely comes down to local choices (Benedikter & Nguyen, 2018; Kerkvliet, 2005; MacLean, 2013; Mattner, 2004). Scholars remarking on this situation frequently invoke the Vietnamese proverb "the king's edicts stop at the village gates" (*phép vua thua lệ làng*) in reference to the traditional autonomy of localities in Vietnam, or examples of individuals resisting policies imposed from above. Kerkvliet (2001) has described the relationship between the Vietnamese state and society as a "dialogic" one, characterizing the state itself as "responsive-repressive" (2009), that is, demonstrating both sensitivity to public concerns and firmly opposing anything that might threaten its stability or the hegemony of the VCP.

Governance of climate change adaptation

Within this hierarchical multi-level governance setting, several documents have sought to integrate climate change adaptation with development planning in Vietnam. Foremost among these, the National Target Program to Respond to Climate Change (NTP-RCC), approved in 2008, provides the legal basis for mainstreaming adaptation activities into development policies and programs (GoV, 2008; Phuong *et al.*, 2018). Responsibilities for implementation are delegated to various ministries, sectors, and lower-level administrative

challenges by empowering the Ministry of Planning and Investment (MPI) to implement regional, multi-sectoral planning (Brown, 2020; "The Vietnamese planning system" n.d.).

bodies, with the Ministry of Natural Resources and Environment (MONRE) taking the lead, the Ministry of Planning and Investment (MPI) coordinating, and specific supporting duties allocated to mass organizations and other entities. With regard to the effects of climate change in the agricultural sector, the Ministry of Agriculture and Rural Development (MARD) is responsible (Phuong *et al.*, 2018). "Mainstreaming" refers to the integration of climate change adaptation into existing development goals, strategies, policies, and budgets (Beckman *et al.*, 2013). This is generally pursued either by seeking to make existing projects "climate-proof" or prioritizing adaptation in future projects (Beckman *et al.*, 2013; Klein *et al.*, 2007). At subnational levels, this occurs primarily via annual and five-yearly SEDPs formulated by provincial People's Committees (Phuong *et al.*, 2018). In this way, argues Fortier (2010, p. 238), climate change adaptation is subsumed by the party-state's "attempt to maintain course on growth," or, as Lindegaard (2020, p. 117) puts it, a "rebranding of existing interests as climate change adaptation."

For the Mekong Delta, the governance of climate change adaptation in recent years has been strongly influenced by the Mekong Delta Plan (MDP), produced by a consortium of Dutch consultants and Vietnamese partners in 2013. Seeking to address fragmentation in the Vietnamese planning system and lack of coordination in land and water management at the regional scale (Seijger *et al.*, 2019), the MDP presents an integrated, long-term sustainable development vision for the delta based on a path of "agro-business industrialization" (MDP, 2013). Locating many of the delta's sustainability problems in the country's "rice first" policies, which aim to maximize rice production through subsidies and a reliance on hydraulic engineering structures to prevent floods in the upper delta and extend the reach of freshwater into the coastal zone (Biggs *et al.*, 2009; Gorman, 2019; Le Thuy Ngan *et al.*, 2018), it instead recommends more adaptive land and water uses, such as flood-based agriculture in the former area and brackish-water aquaculture in the latter. In general, it recommends upgrading the delta's predominantly agricultural economy through the application of modern technology, shifting from a focus on maximized yields to higher-quality products to meet international consumer demand, and improving value-chains through the development of specialized food processing industries supported by public-private partnerships. After limited initial involvement from the Vietnamese government, the MDP received the endorsement of various Vietnamese scientific experts, as well as the Southwest Steering Committee (SWSC), a regional political organ of the party-state,[10] the International Union for Conservation of Nature (IUCN), and numerous foreign development agencies, including the International Fund for Agricultural Development (IFAD) and the World Bank. Since then, several new policy documents have been issued by the Vietnamese government that aim to establish the principles laid out in the MDP in legal form (Brown, 2020). Nevertheless, at the time of my fieldwork in Trà Vinh, only the most well-connected researchers and government officials seemed to have any awareness that the MDP existed (see also Korbee *et al.*, 2019; Seijger *et al.*, 2019).

In this article, I focus on actors operating at the regional and provincial levels in the Mekong Delta who play a key role in the transmission and translation of knowledge shaping climate adaptation in practice.[11] Figure 2 presents a highly simplified visualization of this governance network,[12] illustrating the structural positions and relationships among the actor groups highlighted here: staff of the ODA-funded project AMD[13]; researcher-practitioners from Vietnamese universities and research institutes; agricultural extension agents from the provincial Department of Agriculture and Rural Development (DARD), and regional scientific "experts." In addition to those that are the primary focus of this article, other significant intermediary actors and organizations shown here include the Southwest Steering Committee (SWSC) and mass organizations (e.g. the Farmers'

[10] The Southwest Steering Committee was later disbanded, in October 2017, along with the two other regional steering committees in Vietnam (http://en.nhandan.com.vn/politics/domestic/item/5562902-vietnam-to-disband-regional-steering-committees-in-bid-to-downsize-public-sector.html, accessed 2 October 2018).

[11] The MDP emphasized a regional scale of planning and coordination (Weger, 2019), but no formal governing structures existed to implement plans at such scale. The SWSC offered the closest fit, but played mainly a leadership role without powers of enforcement and, as mentioned, was to be later disbanded. Certain knowledge brokers, however, as described below, were active at regional scale.

[12] Highly simplified in part because it elides such distinctions as those between the parallel structures of the Communist Party and Vietnamese government, and those between the hierarchically nested structures of districts and communes.

[13] AMD was a project of IFAD and stands for "Adaptation to Climate Change in the Mekong Delta." The project ran from 2014 to 2020 and was active in both Trà Vinh and the neighboring province of Bến Tre.

Union, Women's Union, and Communist Youth Union). Universities and research institutes include those that operate regionally, based in either HCMC or Cần Thơ, as well as those in Trà Vinh, including CSP and related units of Trà Vinh University (TVU). Of course, this is only one way of drawing the far more complex, dynamic, and constantly evolving actor-network of climate change adaptation governance across the Mekong Delta.

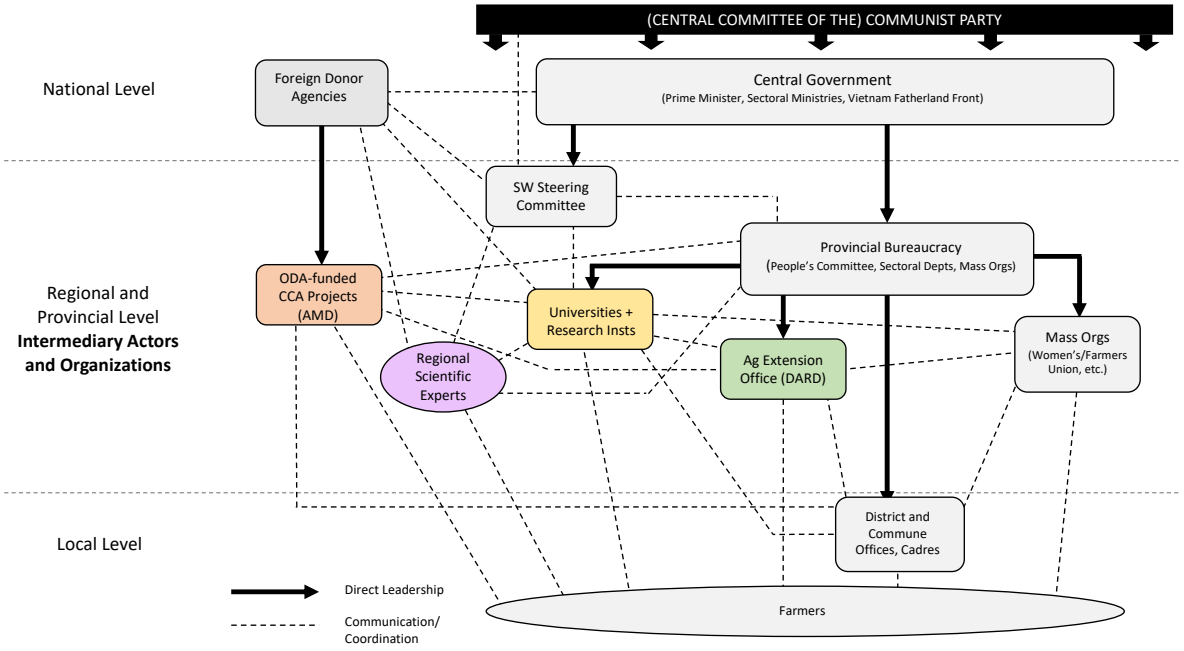

Figure 2: Simplified representation of governance structure relevant to climate change adaptation in the Mekong Delta. Actor groups that are the focus in this article are highlighted in color. Source: Author.

3. Constraints on knowledge sharing: Vertical and horizontal translation

Trâm's catchphrase, "nothing for free," illustrates the way in which scientific and technical knowledge is circulated within the political economy of development that characterizes climate change adaptation in the Mekong Delta. Intermediary actors such as Trâm and her friends – researcher-practitioners in agriculture and rural development – play a key role transmitting and translating knowledge upwards, downwards, and horizontally within this system. Vertically, knowledge-sharing is constrained by a rigid hierarchical system of top-down planning and bottom-up reporting (Benedikter & Nguyen, 2018; Phuong *et al.*, 2018), which shapes the ways that knowledge for climate adaptation is produced, circulated, and applied by different actors to meet the expectations and incentives of authorities. Most significantly, as noted above, the "mainstreaming" of adaptation means that such activities are integrated into the framework of socio-economic development planning at national, provincial, and local scales (Benedikter & Nguyen, 2018; Phuong *et al.*, 2018). As Thành, the director of an applied research center at TVU explained, the province's annual and 5-yearly "Resolution" (*Nghị quyết*) is an essential document that "provides the orientation" within which all climate change adaptation activities must fit: "[We] have to look at the different objectives, and how to meet each one, by which solutions." This "orientation" guides research and development activities and incentivizes findings that align with provincial development goals and targets.

Figure 3: Location of Trà Vinh province in Vietnam. Source: Jonathan Hallemeier 2021, made with QGIS.

This means that knowledge produced by scientific researchers or information reported to higher-level administrative bodies is often translated to fit the demands and expectations of the provincial government. Describing how local researchers translate the knowledge and livelihood innovations of farmers into usable data for climate adaptation programming (see also Tran *et al.*, 2019; Tran *et al.*, 2018), Thành told me they first have to "convert" it (he used the English word) into something more "complete" to qualify for government support. He offered a hypothetical example: suppose there's a farmer who has found a way to live sustainably in an area of increasing salinity, he said. "He has a plot of land with mangrove forest inside, and he harvests shrimp, but he doesn't get rich." Despite high temperatures and increasing salinity, Thành continued, the farmer receives enough income to live. "We try to increase the productivity of his model […] to get more shrimp […] but not break the ecosystem. We increase every factor a little, trying to find a sustainable agro-ecosystem for a more successful livelihood." Once they have something more profitable, he said, they then suggest this "livelihood model" (*mô hình sinh kế*) to the agricultural extension office or request funding from the provincial Department of Science and Technology (DST) to help "spread it in reality."

Duy, formerly employed by an institute under the Ministry of Agricultural and Rural Development (MARD) responsible for irrigation planning in the delta, described the structural constraints researchers often

face in this way: "What do you want? You want money," and because of this, provincial authorities "will force you to go in their direction." For instance, he said, if the province wants to build a canal, "but we found it will cost a lot of money," the budget is already fixed, so "they don't want to change […] [Therefore] we need to find a way […] that they will accept." Despite anticipated excessive long-term costs or negative impacts, he explained, researchers are under pressure to find solutions that conform to the province's development targets, though he conceded that this "is bad from a scientific standpoint."

Similarly, as many outside researchers have observed, there is a tendency when collecting information via formal channels in Vietnam to be met with "official" responses, in which anything that does not conform to official narratives is filtered out (Bauer, 2011; Kerkvliet, 2001; Scott *et al.*, 2006). When interviewing provincial-level bureaucrats from the Department of Natural Resources and Environment (DONRE) or the Women's Union, for example, respondents often gave me standard, pre-formed answers about their office's activities, with some agreeing only to send pre-written statements detailing their organization's policies. The reliability of statistical data about localities, collected and managed by local cadres in often non-transparent and inconsistent ways (Bauer, 2011; Reis, 2012; Tan, 2012), is equally questionable. Information is often reported about how things *ought* to be rather than how they *are* (Bauer, 2011; Benedikter and Nguyen, 2018; Scott *et al.*, 2006).

Translations of this sort—and their proliferation in documentary forms—give rise to what MacLean (2013) calls "papereality." The term describes institutional contexts where official representations of reality take precedence over actual conditions. (Five-year plans, which purportedly take present conditions into account when setting future targets, are an example *par excellence* of this phenomenon.) "Papereality" thus sustains a gap between what people claim and what people actually accomplish, fostering mistrust in the process. Ideological demands, political pressures, material shortages, social obligations, and technological limitations further contributed to this persistent problem, and they prompted high-level officials to design new forms of documentation to mitigate it (MacLean, 2013, p. 7).

Yet new forms of documentation (reports, plans, the plethora of legal documents including decrees, orders, decisions, resolutions, circulars, and so on), replete with empty bureaucratic rhetoric, just contribute to the problem, MacLean argues, fostering in turn "partial illegibility" (cf. Scott, 1998): the limited ability of high-level officials to effectively read, and hence maintain administrative control over, the countryside. The other effect MacLean mentions above – pervasive mistrust – was a problem noted by several of my interlocutors, whether describing local people's distrust of party-state authorities and institutions (Bauer, 2011), or with comments like "people just don't trust one another here," when observing that others tend to seek individual short-term advantage over long-term, collective goals (see also Harms, 2014). Whether regarding public faith in state institutions or people believing others look out mostly for themselves, this lack of trust compounds (e.g. Kerkvliet, 2005).[14]

Horizontal knowledge-sharing among actors is where the transactional nature of knowledge exchange can be seen most clearly, as people use data and other research outputs to acquire social and material resources. Since the *Đổi mới* reforms of the 1980s, the Vietnamese government has encouraged the progressive commercialization of science and technology. Due to public sector fiscal constraints, Vietnamese universities and research institutes have looked elsewhere to make up budgetary shortfalls, and liberalizing reforms have allowed them to operate as firms on the market. Today, direct commercial or government contracts for applied research, technological services, and consulting make up a significant part of institutes' activities (Bauer, 2011). In this context, research outputs – data, reports, scientific knowledge and skills – become resources that organizations or individual scientists can leverage to supplement meager salaries or enhance market competitiveness, thereby opening up further opportunities to acquire resources. As the vice director of a HCMC-based research institute told me, "People use data for fishing," in explaining why data is not easily accessed or

[14] For a reflection on the erosion of trust in contemporary Vietnamese society, at institutional and personal levels, see also Nghia Thu Nguyen (2021).

freely shared in Vietnam, but rather sold for a fee.[15] For the same reason, different units of TVU compete with one another to sell wood apple wine and other value-added agricultural products, and during my time there played host to a stream of visiting delegations from other countries – the Netherlands, Germany, Japan, Belgium, Thailand – to explore opportunities for collaboration. Collaborative partnerships, especially with international entities, both enable the expansion of professional networks and provide access to additional sources of funding or beneficial private-sector relationships. One of their primary outcomes is the organization of joint conferences or workshops, which facilitate knowledge exchange while providing important opportunities for informal networking (Bauer, 2011; Zink, 2013).

To overcome these structural and financial constraints and the lack of trust they engender, intermediary actors frequently turn to informal means of knowledge sharing. Indeed, it is often via personal relationships and informal interactions that people are best able to access information and resources or navigate bureaucratic hierarchies in Vietnam (Bauer, 2011; Gainsborough, 2010b; Reis, 2012; Zink, 2013), a form of sociality especially characteristic of southern Vietnamese society (Luong, 2018; Taylor, 2016). For example, the common practice of informal feasting and drinking sessions (*nhậu*), often over lunch, nearly always preceded or, more likely, immediately followed formal meetings and workshops, whether with foreign delegations, scientists, local officials, farmers, or some combination thereof, leading to many an afternoon hangover. This was touted by my colleagues, such as Trâm and her friends, as an essential means of establishing rapport with people, especially if I wanted to interview them or in other ways seek to glean information or knowledge from them. It is typical for local researchers and practitioners to sit with farmers or officials to share food and toast glasses of beer or spirits, and in this way enroll one another in relationships of mutual trust. This practice was explained to me as a form of social etiquette or courtesy (*xã giao*) important for the maintenance and reinforcement of social relations (*quan hệ*), thereby fostering group cohesion (Gillen, 2016; Harms, 2013; Luong, 2018).[16] For intermediary actors responsible for translating knowledge across levels of governance, formal knowledge sharing may be constrained by rigid hierarchies and budgetary shortages, but informal, face-to-face interactions allow for more dynamic exchanges that build trust and facilitate cooperation toward shared goals (Bauer, 2011). Such informal networks and interactions (often labeled "social capital") are argued to be key to social learning processes and the adaptive capacity of institutions and communities (Adger, 2003; Hulke & Diez, 2020; Olsson *et al.*, 2006; Tran *et al.*, 2018; Tran & Rodela, 2019). Whether sharing knowledge vertically or horizontally, overcoming mistrust is essential.

4. Translation into practice: Livelihood models and model farmers

From the road, the golden-green of maturing rice fields stretches into the distance; in the other direction, the landscape is checkered with rectangular ponds separated by grassy earthen bunds and sparse trees. In the midst of a landscape transitioning to brackish-water shrimp farming, the raised road that cuts through the commune of Long Sơn acts as a salinity barrier, preventing much of the saltwater from the seaward side from permeating the soil and rice fields on the other. Arriving in the heat of midday for a training workshop (*hội thảo tập huấn*) on raising blue-claw shrimp with Hương from AMD, several of her colleagues, and a cameraman from Trà Vinh television station, I walk between the ponds to a house with motorbikes strewn in front. The farmer hosting the event offers a demonstration for the camera. Taking a prawn from the bucket, he deftly tears off its long, indigo-colored front claws, while Hương explains for the camera that at this stage, around four and a half months old, farmers should remove the claws and return the shrimp to the water so they will continue to grow. Minutes later the seminar begins, with around 30 men and women seated around tables under a tarpaulin cover next to the house, beneath a large AMD workshop banner. Hương stands up front, with two women from

[15] The leaders of several research institutes expressed versions of the sentiment "knowledge is power" or "information is power" in explaining their motivations to hold onto research outputs in order to enhance their social and market position (see also Bauer, 2011).

[16] Although these sessions were by no means exclusive to men, they were significantly gendered, with women less likely to (be expected or invited to) participate (see also Gillen, 2016; Harms, 2013; Reis, 2012; Scott, Miller & Lloyd, 2006). However, as the active participation of Trâm and her female colleagues suggests, to succeed in a traditionally male-dominated field like agricultural research and development, one may feel pressure to engage in such forms of sociality.

the provincial extension center, one from the commune's agricultural office, and a young man in the blue shirt and red scarf of the Communist Youth. The women stress that brackish-water aquaculture is a crucial means of adapting to climate change here, and that blue-claw shrimp (*tôm càng xanh*; Macrobrachium rosenbergii) is a highly effective model for doing so. The extensionists describe the required inputs of feed and chemicals, techniques to avoid disease, and the yields to be expected if procedures are properly followed. The farmer piloting the project stands to share his experiences, vouching for the ease and profitability of this model. After some brief discussion, food is brought out and everyone settles in for a large banquet lunch, with plenty of shrimp to eat and beers for toasting.

Nearer to the coast, in Đôn Châu commune, farmers have taken advantage of the salinity by cultivating shrimp for much longer. On this day, I have come for a workshop on raising white-leg shrimp (*tôm thẻ*; Litopenaeus vannamei) with Lan from the provincial extension center. There are around 20 farmers in attendance. Lan passes out pamphlets and begins her slideshow presentation. Projecting an air of technical expertise, she describes in detail the process of cleaning out the sludge from an old pond, preparing the underlying soil with lime ($Ca(OH)_2$) to neutralize the pH, then refilling the pond and treating the water with chlorine and nutrients, measuring and adjusting the pH, and finally running electric aerator fans to increase dissolved oxygen in the water. She insists that although input costs for cultivating this species are quite high, it is a more productive and therefore profitable alternative to giant tiger prawn (*tôm sú*; Penaeus monodon), which most of the farmers currently raise. Instead of taking 5-6 months to mature, white-leg shrimp require only around 2.5 months, so one can potentially get up to four harvests per year, and with high stocking densities can earn a much greater profit overall. Concerns are raised about disease, and Lan explains that white-leg shrimp are voracious eaters, so if they begin to eat less it is likely because of a bacterial infection, in which case farmers should add Vitamin C and digestive enzymes to the pond. Still, farmers express concern that the larvae they purchase will be low quality and therefore more susceptible to disease. They distrust suppliers, most of whom are based in neighboring provinces or in Central Vietnam, and argue that even if they pay premium prices suppliers may still try to "cheat" them by providing larvae mixed with low-quality, "weak" seed. If disease appears in just a few it can quickly spread to the whole batch. In this case, Lan recommends they join a cooperative group for enhanced bargaining power.

Such training workshops are a common occurrence in rural Trà Vinh, where extension agents, AMD staff, representatives of mass organizations, and researcher-technicians from TVU (broadly, "extensionists") promote so-called "climate-resilient agricultural models" (*mô hình nông nghiệp thích ứng với biến đổi khí hậu*). AMD operates as a "project coordination unit" in the province, bringing together public and private-sector entities to strengthen the adaptive capacity of institutions and target communities. Its mission, according to the project director, is "to see how farmers can increase their income and make their livelihoods more sustainable," while prioritizing poor, female-headed, and ethnic minority (Khmer) households.[17] Collaborating with researchers and government offices, they disseminate knowledge via workshops, pamphlets, and occasional TV spots; fund infrastructure projects such as paved roads; and channel credit to farmer households to support the adoption of new livelihood models. Depending on specific soil and water conditions, these models aim to provide resistance to drought, waterlogging, salinity, or pests, while reducing input costs and generating higher profits. Crops such as chili peppers, peanuts, cucumber, and maize are promoted, often in combination with water-saving drip-irrigation technology and/or organic fertilizer, as well as various breeds of livestock and shellfish. Typically, AMD will first invest in pilot experimental plots with select farmers, then implementing agencies such as the extension office and university research centers work to expand models they deem "successful" – sufficiently productive and profitable as described by Thành above – to wider-scale use. All such activities must fit within the scope of, and therefore contribute to, national and local socio-economic development policies and targets. According to the AMD director, these are then "shaped to be adaptive to climate change" by the activities of AMD and its partners.

[17] As others have observed, programs that focus on supporting women and minority households can sometimes produce unintentionally exclusionary or culturally alienating effects for their intended beneficiaries (Carr, 2013; Cons & Paprocki, 2010; Taylor, 2004).

As climate change adaptation is mainstreamed in this way, not only are existing policies and programs shaped to be adaptive, but knowledge for climate adaptation is itself translated in such a way as to further the productivity goals of the state. In Trà Vinh, for example, the SEDP for 2016-2020 declares that the province should:

> Strive for the production value of the entire agricultural sector to increase by an average of 5.5%; the annual rice output [should] reach over 1.3 million tons; over 50% of communes [should] achieve new countryside criteria. (Trà Vinh People's Council, 2015)[18]

Based on current conditions and land uses, the Department of Agriculture and Rural Development (DARD) then updates land-use plans to achieve target production volumes. In this way, increasing agricultural output becomes one of the guiding principles of climate adaptation, prompting extensionists to emphasize productivity and profitability of livelihood models, and therefore, in all likelihood, intensification as well.[19] While all sectors have their own plans for reaching specified targets, one of the state's overarching goals, according to officials from the Department of Planning and Investment (DPI), is to get "private businesses to do business here." Smallholder farmers are increasingly encouraged to pool their resources and join cooperatives to take advantage of economies of scale and plug into wider markets, and AMD prioritizes value-chains by supporting enterprises that buy products from farmers and investing in cooperatives that do business with private companies. But such models of "cooperative capitalism" have been found elsewhere to exacerbate rural inequality and dispossession through land transfer from small to larger farmers within cooperatives (Paprocki, 2018). This, paradoxically, is often given as justification for these programs in Vietnam, the idea being that a shift to larger-scale farming operations will enhance input efficiency and spatial coordination across the landscape while reducing population pressure on resources.

One of the most important government programs guiding rural development in Vietnam, and thus climate adaptation activities, is the "New Countryside Program." This program designates a set of 19 criteria for communes to strive for in areas such as infrastructure development, poverty reduction, health, education, and environmental protection in order to qualify for special funding from the central government (GoV, 2016b). While variations on the theme have been around since the 1980s (MacLean, 2013), in its present form the program has existed since 2009 and reflects the post-*Đổi mới* emphasis on development through privatization, restructuring, and marketization, relying largely on individual entrepreneurial initiative to mobilize labor and resources to achieve specified targets (Nguyen, 2017).[20] In essence, the program rewards high performers. According to Nguyen (2017, p. 5), the "overriding message […] is that local communities and people should own and thus be responsible for their development." Yet, observers note, the top-down imposition of these criteria does little to empower local people's attachment to place, leading them to prioritize individual short-term interests over longer-term sustainability (Nguyen & Nguyen, 2020).

The party-state, however, leans on a discourse of "civilization" (*văn minh*) to motivate people. Program documents encourage standards of cleanliness, behavior, and morality for people to follow in order to lead a "civilized lifestyle" (*nếp sống văn minh*) and achieve the status of "cultured" (*văn hoá*) household or hamlet so that they can serve as a model for others (Trà Vinh People's Committee, 2017a, 2017b). This follows what MacLean (2013) describes as the party-state's longstanding promotion of forms of "guided self-regulation" and "emulation" to shape conduct. Much has been written about the civilizational discourse prevalent in post-colonial Vietnam, in which the state-led vision of modernity and social order is tied to an imagination of

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[18] "*Phấn đấu giá trị sản xuất toàn ngành nông nghiệp tăng bình quân 5,5%; sản lượng lúa hàng năm đạt trên 1,3 triệu tấn; trên 50% số xã đạt tiêu chí nông thôn mới*." (Translation by author)

[19] Many scholars, however, question the potential for intensive shrimp farming to ever be "sustainable" in practice, due to effects such as mangrove deforestation, soil and water pollution, and excessive groundwater extraction (for modulating temperature and salinity levels), as well as the high risks farmers face from market volatility and susceptibility to disease (Be *et al*., 1999; Lebel *et al*. 2002; Luttrell, 2002; Nguyen & Ford, 2010).

[20] Officially titled "Building the New Countryside" (*Chương trình xây dựng nông thôn mới*), the national program is modeled after a Chinese program, "The New Socialist Countryside," initiated in 2006 (MacLean, 2013; Nguyen, 2017).

urbanity, industry, and technological progress, contrasted with the supposed "backwardness" of poor and rural areas (e.g. Bradley, 2004; Harms, 2011, 2014; Schwenkel, 2020; Taylor, 2001). Seen through this lens, the "New Countryside" program can be understood as part of wider state-led efforts to "civilize" the countryside and "build socialism" (MacLean, 2013; Nguyen, 2017) through the moral and economic improvement of its citizens.

A similar discourse was on display at a conference on "restructuring agriculture" (*chuyển đổi cơ cấu nông nghiệp*) to respond to climate change held in Cần Thơ. Representatives from science, government, and agribusiness gave back-to-back presentations about the urgent need to adapt to climate change, contrasting "improper" (*không đúng cách*) traditional farming methods with products and technologies deemed necessary for practicing "smart" agriculture (*nông nghiệp thông minh*), while companies like Dow Chemical and Yanmar equipment advertised their wares outside. Such an approach reflects the global discourse around "climate-smart agriculture" (CSA), which Newell & Taylor (2018, p. 108) describe as a paradigm that "seeks to square the goals of climate change mitigation and adaptation with the need to increase productivity in the agricultural sector and reduce poverty and hunger in developing countries." By defining and delimiting the solutions that are advanced as climate-smart, powerful actors such as the World Bank, FAO, and IFAD, as well as agricultural research organizations and agribusiness companies, promote a version of CSA that tends to support "business-as-usual modes of agrifood production and governance" organized around industrial, private sector-led, and export-oriented agriculture (2018, p. 109). Much like previous notions of "sustainable intensification," the authors argue, this discourse further entrenches the power of dominant agribusiness interests that derive from their "control over production, finance and technology in the current food regime" (2018, p. 119). At the same time, by seizing upon the popularity and ambiguity of the "climate-smart" label, local actors may reap the benefits of enhanced authority and access to material resources (Newell *et al.*, 2018), as suggested by its eager adoption by extensionists in Trà Vinh.

As these examples show, successful adaptation to climate change is here translated as increased incomes under conditions of environmental stress and uncertainty, mediated "through scientific knowledge, technical expertise, and the rules of the market" (Mikulewicz, 2020, p. 17). Like in other developing country contexts, extension services commonly rely on successful "model farmers" to facilitate the transfer of knowledge, technologies, and practices to target communities "through networks combining extension agents, research institutions and private sector interests" (Taylor & Bhasme, 2018, p. 1). In the Mekong Delta, Hicks (2004, p. 243) observes that extensionists often favor "supporting the strong" – model, or progressive farmers – with "private resources to invest […] relative financial security to be able to risk experimentation, and access to televisions and information that engendered a wider knowledge of non-traditional farming methods." Such farmers provide a real-time demonstration of the benefits of applying new farming techniques and can be held up as role models for others to emulate (MacLean, 2013; Nguyen, 2017), as well as providing extensionists themselves with potential material benefits from increased legitimacy or relationships with private sector contacts looking to promote their products (Hicks, 2004; Taylor & Bhasme, 2018).

It is no surprise that similar criteria were used to define adaptation success. Thành expressed a popular viewpoint when he told me:

> Successful adaptation is someone who is able to turn bad conditions to their advantage… The people that don't want to adapt, get poor. *The people that want to adapt, they got rich already* […] Some farmers are very conservative. Even though they recognize that the climate is changing, they don't want to change. But some other people are very willing to change, *and they follow the advice of local authorities and scientists*.

These comments clearly define the characteristics of the ideal adaptation subject: a farmer who is proactive, entrepreneurial, eager to apply scientific expertise and heed the authorities, and who becomes wealthy by doing so (see also Mikulewicz, 2020). In one commune near the mouth of the Mekong River, where the transition to

intensive shrimp farming is nearly complete, I met a man the local media dubbed the "shrimp billionaire"[21] (*tỷ phú tôm*) for his riches obtained through the industrial cultivation of giant tiger prawn. Appointed commune agriculture-aquaculture officer, he was held up by local officials and extensionists alike as a model of success for his ability to apply modern technology to "adapt" to saline conditions. The success of intensive shrimp farming in general was credited with helping his commune achieve nearly all criteria to reach "New Countryside" status, and it too was promoted as an example for neighboring communes to emulate. This model of adaptation success thus promotes techno-fixes at the household level, placing the burden of adaptation on individuals' ability to generate wealth, but doing little to address the underlying causes of poverty, inequality, and vulnerability.

5. The translational agency of scientific experts: Hùng and the gang

Some of those with the greatest agency to advance their visions of adaptation and development in the delta are Vietnamese scientific "experts," often well-known environmental scientists with activities and influence across multiple provinces. These are individuals whose structural position and social status mean they are "both close enough to the ruling elite and still powerful enough to have an influence in the Vietnamese political domain" (Hasan *et al*., 2019, p. 1592).[22] As Zink (2013, p. ix) notes, Vietnamese scientists "are creative agents with both visions of their future and significant space for self-determination," especially in the new political space created by climate change (see also Benedikter, 2014; Vo *et al.*, 2019). Many were educated abroad, often at universities in the US or Europe, and over time have achieved the authority to assemble facts about the environment and also, wide audiences (Zink, 2013, p. 4). As detailed below, they translate knowledge to influence the course of climate change adaptation in the delta by giving talks, publishing reports, collaborating on projects with foreign and domestic partners, and reaching public officials through both formal and informal channels. Enrolling forms of mass media, they reach even wider audiences while enhancing their authority and recognition. Less beholden to formal bureaucratic constraints or obligations to implement specific policies, such authority enables them to advance their own sustainability agendas. Many were consulted on draft versions of the MDP and gave extensive feedback, providing the Plan with some of its only local input. Yet they maintain a detached skepticism, aligning themselves with its recommendations as it suits their goals and interests. By purportedly working on "the environment," these experts work indirectly on the state, shaping development discourses and practices at local and regional scales.[23]

The first time I met Hùng, he was wearing a Mardi Gras t-shirt, having just returned from the US with a delegation of Mekong Delta scientists as part of the US State Department's Lower Mekong Initiative. He had been particularly impressed by desalination technology he had witnessed in California that could help to avoid the infrastructural approach to saltwater management in the delta pushed by authorities who, he said, were strongly influenced by the engineering-focused approach dominant in the Red River Delta around Hanoi. A wetlands ecologist by training, he had come to Trà Vinh University that day to give a presentation on sustainability challenges facing the Mekong region at a meeting with a Thai university delegation. He spoke excellent English, with confidence and humor, and delighted in sprinkling his conversation with mocking imitations of President Trump, who had just been elected a few months prior.

Interviewing Hùng for the first time at an outdoor café in Cần Thơ a couple weeks later, he offered to introduce me to several people I had been unsuccessfully trying to get in touch with. "They're my buddies!" he exclaimed between puffs of a cigarette, inviting me out to eat and drink beer (*nhậu*) with them that evening. He proceeded to tell me about this group of friends, "the delta gang" he called them, mostly other scientists from Cần Thơ University (CTU) and affiliated research institutes who regularly meet for coffee and discuss challenges facing the delta. Local sons who feel a close connection to the mud, water, and rural lifeways of the

[21] "Tỷ phú tôm sú ở Mỹ Long Nam" https://www.bienphong.com.vn/ty-phu-tom-su-o-my-long-nam-post27645.html, accessed 24 April 2021. (Note: 1 billion VND was equal to about US$50,000 at the time of fieldwork.)

[22] The original quote is in reference to the "retired reformists" – late-career or former officials – described by foreign consultants involved in drafting the Mekong Delta Plan.

[23] This section is based on a synthesis of observational data from multiple regional conferences, interviews with several of the most well-known environmental scientists in the delta, and informal conversations.

area, he explained, for the most part they think similarly about such issues and are unafraid to speak out and be critical of state-led development projects. And they get away with it, he said, because they are well-known and respected scientific figures, and they support each other. He described how they influence public officials in their networks, such as a friend and "ad hoc" member of the gang from the Southwest Steering Committee (SWSC). Moreover, several are a familiar presence in the local media. "I'm like Trump!" he said, grinning widely, because he loves the media attention.

Deliberate and strategic use of the media to promote their ideas was a common theme when I spoke with other members of this group as well. They often publish opinion articles in local newspapers or appear on television to talk about environmental problems or sustainability, hoping to reach farmers as well as government officials and the wider public. They are skilled networkers, organizing field trips and enlisting local journalists to report on stories they consider important, and cultivating those relationships so journalists continue to seek them out for information. One expert told me that when speaking to the press or on television about the environment, he knows he can speak freely. He noted that the same is not true for just anyone: he has decades of name recognition, and lots of data to back him up. Another, who referred to "the gang" as an informal "think tank," observed that just five years earlier, when they would speak about climate change, few people in the delta knew what they were talking about. Now, he estimates, some 70% of local officials and farmers alike both know who they are and are conversant in climate change.[24]

Hùng, at another meeting, described how he uses the Vietnamese social networking app *Zalo* to post critical comments about environmental and development issues in Vietnam. He told me of a recent occurrence in which the Agriculture Department of a neighboring province was said to have forced their staff to eat contaminated fish just to prove it was safe. After posting a strongly worded criticism on social media, he sat back and watched the "likes" and comments come rolling in. Usually, this kind of criticism of government entities on social media can get you in trouble in Vietnam (Paddock, 2017). However, it can also be a powerful tool for building ideological support in a country where more than half the population are active Internet users and there are some 50 million Facebook accounts (Hue Trong Duong *et al.*, 2019, p. 4). Hùng acknowledges that his status as an "expert" confers on him the ability to criticize the government when it is framed within the context of his scientific expertise, not least because of the privilege that comes from public recognition and his participation in institutional networks.

Some of these scientists are unequivocal about criticizing the party-state, which they see as out of touch with local issues and in the pocket of powerful vested interests. Many express disdain with leaders from the north of the country deciding the course of the delta's development. They see decision-makers in Hanoi as simply outsiders who don't understand the complexities of the Mekong Delta. Centrally mandated water management policies, they argue, are rooted in the distinct social and environmental conditions of the Red River Delta. Politicians and planners have thus come to rely on a dense patronage network of what Benedikter (2014) calls "hydrocrats," with vested interests in promoting capital-intensive infrastructure in the delta like dikes, canal systems, sluice gates, and pumping stations to protect against floods and salinity and facilitate intensive rice monocultures (Biggs *et al.*, 2009; Fortier & Trang, 2013; Seijger *et al.*, 2019). The problem, according to Hùng and his friends, is that this approach obstructs the delta's natural hydrology, undermining the resilience of ecosystems and preventing more adaptive land and water uses. Beware when they use the term "active adaptation," Hùng cautioned: it signals a structural approach. They seek adaptation by means of control.

Although regional scientific experts appear to unanimously agree with the MDP's diagnosis that many of the delta's sustainability problems can be addressed by reducing emphasis on maximum rice yields and shifting to adaptive water management and higher-quality products, they are openly critical of the Dutch-led document as well. Paralleling their criticism of decision-makers from the north, many of these critiques are of the form, "they are outsiders, they just don't understand the system like we do." More precisely, experts argued that the MDP lacks substance and needs further research, additional data, and clearer explication of the conceptual thinking behind it, as well as more local input, particularly from farmers. Additionally, nearly all of them I spoke to argued that it needs concrete implementation procedures, as in a master plan. As is, they insisted,

[24] According to Pham & Nash (2017), until recently Vietnamese news outlets reporting on climate change tended to quote government sources instead of scientists, and focused more on global processes rather than local impacts and vulnerabilities.

"the MDP is not a plan; it's just a vision."[25] Still, the vision the MDP presents of "agro-business industrialization" is widely supported. Experts variously spoke to me of the need to improve agricultural products along the whole value-chain; the necessity of accounting for future uncertainties by emphasizing "no regrets" options; the challenge of facilitating coordinated livelihood transitions in different agroecological zones; and the importance of regional, integrated planning and coordination: all objectives outlined in the MDP. Where they deviate from it, and often from each other, is about how to get there.

Such disagreements center on the kind of sustainable development pathway the Mekong Delta should take. Whether in personal communication or public pronouncements, many of these experts tend to downplay the risks of climate change, in contrast to the typically more climate-reductive pronunciations of provincial intermediaries or the headlines of donor-funded projects (Dewan, 2021), emphasizing instead the more immediate and entwined threats of upstream dam construction and local activities such as high-diking and excessive groundwater extraction. By reducing sediment deposition and drawing down the local aquifer, they point out, such activities accelerate subsidence (Erban *et al.*, 2014; Minderhoud *et al.*, 2017)[26] and contribute directly to riverbank and coastal erosion (Anthony *et al.*, 2015), undermining the long-term ability of the delta to support human habitation. There are, however, differences of opinion between those experts who advocate pursuing economic development first and those who prioritize ecological values. Some expressed versions of the sentiment, "once Vietnam raises its economic status, then it can focus on the environment," explaining that "agro-business industrialization" will help raise incomes across the delta, thereby reducing vulnerability and enhancing adaptive capacity as well as the government's ability to invest in conservation. Many conceded that some farmers will not be able to afford this transition, but claimed they have no long-term attachment to the land, and anyhow, "selling noodles in the city is better than farming." Others, like Hùng, prioritize the integrity and connectivity of the delta's ecosystems, decrying the loss of biodiversity and increasing pollution of recent decades (Campbell, 2011; Sterling *et al.*, 2006) and expressing suspicion about so-called "sustainable" forms of agri- and aquacultural intensification.

Despite their vocal critiques of the MDP and high-level planning processes from which it sprung, local experts align themselves with such initiatives when it advances their personal and public interests. For example, Hùng told me about an instance in which he was recently hired to facilitate discussions with the leaders of three provinces about implementing Decision No. 593 for a pilot regional coordination mechanism in the delta. Inspired by the MDP, the prime minister's Decision aims to establish interprovincial linkages in the fields of agricultural production, water management, and infrastructure (GoV, 2016a; *The Vietnamese planning system*, n.d.). Invited to facilitate the discussion for coordinating water management in the Plain of Reeds, Hùng agreed so long as they let him do it his way. A natural depression in the northern part of the delta, the Plain of Reeds previously functioned as a freshwater reservoir, home to numerous species of fish and migratory birds. In recent decades, the extensive construction of high dikes in the upper delta has enabled farmers to plant three crops of high-yielding rice per year, but largely prevented flood retention. "The hydrology is obstructed, it's handicapped now," he told me, having lost the benefits of freshwater storage, fertile sediments, and migrating fish and bird species that the floodwaters bring (Buckton & Safford, 2004; Le Anh Tuan *et al.*, 2007; Tran & Weger, 2018). Starting with a visioning exercise, he asked the officials to imagine what the area might look like in 20 or 30-years' time, encouraging them to think holistically about sustainability in its social, economic, and environmental dimensions. "That's the difference," he told me. "Usually when you look at plans here in Vietnam, the only thing they look at is how much money you're going to get," rather than giving due attention to environmental and social factors. "PPP is the formula: Profit, People, and Planet. I'm trying to introduce that concept […] into the minds of the decision-makers here."

By participating in institutional planning processes such as these, Hùng aligns himself with both the MDP and the Vietnamese state, using his position to translate knowledge in a way that advances his vision of

[25] To be clear, this is how the purpose of the MDP was described in the document itself, and by those responsible for drafting it. Yet it seems that semantic confusion around the meaning of the word "plan"—given the history of top-down central planning in Vietnam—created divergent expectations.

[26] Subsidence rates for the Mekong Delta are estimated to range from 1.0 – 2.5 cm/year, an order of magnitude higher than global mean sea-level rise (Minderhoud *et al*., 2017).

sustainability and the public interest. Yet doing so is in his private interest as well. Affiliating himself with these powerful actor-networks creates opportunities to take advantage of the outsourcing of state functions (Benedikter & Nguyen, 2018) and secure project contracts and thus his own livelihood. One of the last times we spoke, he told me he and a group of foreign development consultants in concert with the Ministry of Planning and Investment (MPI) had completed drafting the terms of reference (TOR) for a new integrated Master Plan for the delta, to be based on the MDP. Once the government opened a bid for the project, he intended to work with its likely winner to craft the Plan that would eventually result, and he hoped to join the technical advisory board that would be appointed to oversee its implementation. The contract eventually went to Royal HaskoningDHV, the same Dutch consultancy behind the Mekong Delta Plan, with financing from the World Bank (Royal HaskoningDHV *et al*., 2013). The resulting "Mekong Delta Integrated Regional Plan" (MDIRP), was set to launch in early 2021 (Brown, 2020; Doan, 2019).

6. Discussion and Conclusions

In recent years, a transnational, networked, multi-level governance apparatus (Bäckstrand, 2008; Dewulf *et al*., 2015; Dzebo & Stripple, 2015) has emerged to integrate climate adaptation into development goals in the Mekong Delta. Attention to the politics of translation at work within this governance system helps shed light on the social-relational and discursive strategies through which different actors contribute to the trajectory of social-ecological change, bringing into sharper relief the complex mechanisms and interactions that produce project outcomes (Lewis and Mosse, 2006; Seijger *et al.*, 2019; Tsing, 2005; Witter *et al.*, 2015). Drawing on the translation concept as used in actor-network theory and its extensions in development studies, and inspired by institutional ethnography, this article has explored the role of intermediary actors that broker and translate knowledge at the regional and provincial levels, and the interests or agendas that are reflected in the process. The Vietnamese governance system is defined by a strict hierarchical politics of implementation, yet this article demonstrates that the discourse of climate adaptation has opened a political space, enabling intermediary actors to exert influence over the course of development planning and practice by exercising their translational agency, and in such a way advancing both public and private agendas.

By asserting their status as gatekeepers of knowledge, and positioning themselves as indispensable to its flow, interpretation, and use, the intermediary actors described here – researcher-practitioners, extension agents, staff of an ODA-funded climate adaptation project, and scientific experts – translate knowledge across levels of governance, connect and extend networks, and access resources, while shaping climate adaptation in practice. This article has shown that the production, circulation, and application of such knowledge is constrained by the development goals and policies of the Vietnamese state, as intermediary actors are forced to pursue provincial development strategies and attempt to meet ambitious production targets. As a result, formal channels of knowledge translation promote a transactional exchange of knowledge, while actors seek out novel opportunities to supplement their incomes. They also tend to reproduce a kind of "papereality" (MacLean, 2013) that sustains mistrust of institutions and fellow citizens, undermining cooperation and effective and responsive governance. To overcome these structural and financial constraints and the lack of trust they engender, actors often turn to informal relationships and interactions for sharing knowledge. After all, transactional relations, as debt relations, are a form of sociality (Graeber, 2011; Sahlins, 1972); when informalized, they can become more egalitarian, dynamic, and cooperative, more likely to reflect shared values and notions of the collective good.

When translating knowledge into practice for farmers, intermediary actors at the provincial level – such as researchers, extensionists, and AMD staff – focus on applying technical solutions in the form of enhanced "livelihood models." This propagates an approach to climate adaptation that sites the locus of (and responsibility for) adaptation at the scale of the individual farming household. The emphasis here is on high-tech solutions, profitability, and with a central role for the private sector. Drawing together representatives from science and government, international organizations, successful pilot farmers, TV programs, and agricultural technologies establishes their authority and enables the dissemination of knowledge and its translation into practice. Extensionists and other agricultural technicians perform their expertise through technically sophisticated presentations replete with the symbols of scientific knowledge (e.g. numeric figures and chemical formulae inscribed on pamphlets and PowerPoint slides), shoring up their authority to persuade farmers how best to adjust

their livelihoods to changing environmental conditions. Informed by the tools of emulation and self-regulation campaigns (MacLean, 2013), and mediated by discourses of modernization and "civilization" (Harms, 2014), wealthy "model" farmers are held up as images of climate adaptation success. Adaptation becomes about seizing environmental and market opportunities to make a profit; systemic questions of long-term sustainability or social-ecological resilience are backgrounded to the urgency of short-term, individual economic benefit.

Another group of intermediary actors, well-known regional scientific "experts" tend to have the greatest agency to navigate the above structural constraints, often advancing more critical perspectives, and with wider influence, than other intermediary actors. Due to their acquired epistemic authority, relative social status and prestige, they can get away with public expressions of criticism with little fear of repercussion. Indeed, their networks often include direct and informal relationships with government officials. Through such personal and institutional networks, as well as their strategic use of mass and social media platforms, their translations reach wide audiences, and their scientific authority carries weight. While these experts are more likely than others to question dominant framings of adaptation and promote more holistic and longer-term visions of sustainability, some also prioritize economic development as a necessary precondition for increasing farmers' adaptive capacity or pursuing ecosystem-based adaptation. Like their hedged criticisms of the party-state, these actors tend to align themselves with the Mekong Delta Plan cautiously and strategically; not wholeheartedly, but in ways that advance their private and public interests. Hùng, for example, is not shy about his critiques of the MDP, yet aligns himself with it when it suits his vision of sustainability and allows him to win project bids. Like other intermediary actors, experts wield climate adaptation knowledge for personal and collective benefit, translating it in ways that reflect hegemonic discourses as well as their own notions of the public good.

As important nodes in the actor-network of climate adaptation governance in the delta, the intermediary actors described above play a key role in shaping the kinds of socio-environmental futures that are envisaged, and, eventually, produced. By doing so they advance both public and private interests. On the private side, the political economy of development in the delta today places a premium on knowledge associated with climate change adaptation, allowing its spokespersons – translators – to reap material rewards. For those that promote versions of "climate-smart agriculture," there may be lucrative opportunities from enhanced professional legitimacy or access to resources through the market. For others, scientific knowledge itself becomes a resource for mobilizing capital. On the public side, translating knowledge for climate adaptation is a way to contribute to social learning and advance one's vision of sustainable development and the collective good. For many in Vietnam, however, climate adaptation itself is synonymous with economic development (Beckman *et al.*, 2013), and pursuing the latter is an adequate substitute for the former.[27] By "mainstreaming" adaptation through the framework of existing development policies and programs, such translations work to further the economic objectives of the state. Indeed, it could be said that the state development vision (embodied in provincial SEDPs) is the "obligatory passage point" (Callon, 1986) through which climate adaptation knowledge must be translated, suggesting the greatest translational agency lies with the state itself.

As Scoville-Simonds and colleagues (2020, p. 3) argue, "'mainstreaming' adaptation into existing development logics and structures perpetuates an anti-politics machine," not only "reproducing development-as-usual, but in fact reinforcing technocratic patterns of control." This might best be understood as an example of "environmental rule" (McElwee, 2016), in which interventions justified by abstract notions of environmental sustainability work to further entrench state power and control over both people and nature. Based on her historical and ethnographic analysis of forest governance in Vietnam, McElwee (2016) details the politics of translation that assemble diverse actor-networks of people, objects, and ideas to coproduce social-ecological trajectories, while reproducing regimes of power. As others have argued, Vietnam's climate change strategy is based largely on reinforcing and extending "existing power relations in both politics and production" (Fortier, 2010, p. 242; see also Lindegaard, 2020). In the Mekong Delta, this is centered on a political economy driven by accumulation through agricultural modernization, with dominant state and private interests tightly intertwined in the agri-food and hydraulic engineering sectors. They are themselves increasingly vested in the

[27] This corroborates the findings of other authors that rural transformations in "late socialist Asia" are being driven by "state and individual ambitions for future prosperity," particularly those urban and elite goals that "often intersect uncannily well" with state development visions (Wilcox, Rigg & Nguyen, 2021, p. 12).

continuation of this model (Benedikter, 2014; Fortier & Trang, 2013; Lindegaard, 2020). Lindegaard (2020, p. 119) argues that in the realm of climate adaptation policy, Vietnamese "national elites and politicians have to some extent exploited donor agendas for their own ends" by translating international development discourses and rationalities into domestic interests (see also Weger, 2019). Guided by a national development vision of "industrialization and modernization" (Tan, 2012), the country's climate response adheres closely to the complementary global discourses of "ecological modernization" and "green governmentality" (Fortier, 2010; see also Bäckstrand & Lövbrand, 2006), translated here into a justification for technocratic management, *sustainable growth*, and the development of new sites of accumulation through technological modernization. This is a framing of adaptation that aligns with the vision of agribusiness industrialization and technological modernization presented in the Mekong Delta Plan.

According to McElwee (2016), who in turn draws on Foucault's work on governmentality, environmental rule proceeds in large part by extending authority relations through processes of knowledge-making and subject formation. As an expression of power/knowledge (Foucault, 1980), the discourse of climate change adaptation seeks to actively "materialize a particular vision of a model adaptation subject" (Mikulewicz, 2020, p. 16). By promoting especially successful farmers as the adaptation ideal, extensionists and others work to create subjects who will seize the opportunity that environmental change offers with entrepreneurial initiative, applying scientific expertise and modern technology to get rich. They are obedient yet proactive, attuned to the market, thoroughly "modern" and representative of the "civilized" ideals that link individuals' private interests to the national project of development (Harms, 2014). Prioritizing household wealth generation within a top-down politics of implementation, the state thus places responsibility for adaptation and development on the individual while reaping the rewards of continued—or even enhanced—legitimacy. This approach is by no means unique to Vietnam. As Carr (2019, p. 71) observes, there is a "high degree of convergence" between the dominant framings of adaptation and resilience "and the neoliberal emphasis on individual responsibility" (see also Mikulewicz, 2020).

While aligned in many ways with a neoliberal discourse of development, in Vietnam this is paradoxically justified by the long-term goal of "building socialism" (MacLean, 2013; Schwenkel, 2020).[28] It is worth reflecting on the intersection between socialist and neoliberal modes of governmentality that can be discerned in the field of climate change adaptation in Vietnam. As others have noted, through decades of engagement with international donors, the country has indeed been influenced by neoliberal-inspired development agendas, though what has emerged is a kind of uniquely Vietnamese blend of neoliberalism and state socialism (Gainsborough, 2010a; Schwenkel & Leshkowich, 2012; Thiem, 2015). Although programs like "New Countryside" (Nguyen, 2017) and so-called "new-style cooperatives" aim to boost the "collective economy" (Hicks, 2004; Trà Vinh People's Committee, 2017c) and create morally improved, "civilized" subjects, with their emphasis on the profit motive and individual wealth creation they follow a model of mobilizing "enlightened self-interest" for national development à la Adam Smith (2003 [1776]). Thus, MacLean (2013, p. 204) observes, "it has become increasingly difficult to determine where 'socialist' techniques for promoting moral and economic conduct end in rural areas and where 'neoliberal' ones begin."

Yet to what degree does this approach to climate change adaptation represent a transformation to a more sustainable and climate resilient path? On one hand, by mainstreaming adaptation into existing development programs, the same economic logic is reproduced, equating climate adaptation with profitability and economic growth. Near the end of 2017, the Vietnamese prime minister issued Resolution No. 120, which aims to spur a transformational process by emphasizing aquaculture over rice production and improving product value-chains in line with the development vision outlined in the MDP (GoV, 2017). Yet given the profit motive at the center of most adaptation initiatives, it seems likely many will continue to seek the private, short-term benefits of intensive cultivation and maximum yields, in some areas potentially replacing one unsustainable, intensive monoculture (rice) with another (e.g. shrimp), as farmers and local officials seek ever increasing returns. Indeed, efforts to encourage the adoption of more sustainable, low-intensity, integrated polyculture or rotational systems have faced difficulties (Nguyen *et al.*, 2019; Osborne, 2018). This, however, will further contribute to ongoing

[28] See Wilcox, Rigg & Nguyen (2021) for a discussion of how this same apparently contradictory fusion can be found in other "late socialist" countries in Asia, such as China and Laos.

socioeconomic differentiation and increasing inequality, favoring large landowners over small while generating wealth for some and debt, poverty, and landlessness for others (Gorman, 2019). As long as systemic questions of trust and cooperation or the longer-term resilience of ecosystems are sidelined, the delta is unlikely to overcome its current path-dependent trajectory (Biggs *et al.*, 2009; Fortier & Trang, 2013), resulting in maladaptation rather than adaptation (Eriksen *et al.*, 2021; Magnan *et al.*, 2016). Given the constraints of Vietnam's politics, the translations of these intermediary actors in some ways work to perpetuate this inequitable and unsustainable trajectory. What appears most resilient, in the near-term at least, is the ability of Vietnam's party-state to capitalize on new opportunities for economic growth.

On the other hand, there may be opportunities for those intermediary actors who make themselves an indispensable part of the actor-network of climate change adaptation to guide this trajectory in a more transformative and sustainable direction (Olsson *et al*., 2006). Indeed, the ongoing economic transition since the height of state socialism has allowed more room for individual agency in future-making projects (Wilcox *et al.*, 2021). At the provincial level, researchers and extension agents are actively engaged in sharing knowledge across governance levels, enabling social learning and overcoming barriers of mistrust to facilitate cooperation at the local level while attempting to make the government more responsive to local people. One issue of contestation, and a potential switch-point or opening for transformative change here (Bee & Basnett, 2017), is around how much these actors continue to prioritize "rewarding the strong" versus supporting the vulnerable. Scientific experts appear to have the greatest agency to speak out and influence the course of adaptation in the delta. They are already pushing for greater consideration of the negative impacts of local development projects and advocating skepticism towards structural adaptation measures and the dominant interests behind them. A potential switch-point here is around how much these actors emphasize economic growth versus ecological integrity in pursuit of sustainable development. Partisans of both approaches seem to agree that "development" of some kind is essential, a necessary path of incremental change towards the modern, sustainable future they envision (Harms, 2014; Kerkvliet, 2009; Wilcox *et al.*, 2021). The question is what that development path looks like, who is empowered to participate and succeed in it, and who or what will bear the costs.

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