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Everyday adaptation, interrupted agency and beyond: examining the interplay between formal and everyday climate change adaptations

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ABSTRACT. Climate change is increasingly widespread and intense. In response, formal adaptation efforts are gaining momentum and financing globally, while those affected address felt changes through a variety of everyday adaptations, the aggregate daily practices articulated in response to ongoing social-ecological change. Our research examined the interplay between formal and everyday adaptations in practice. Specifically, we sought to shed light on the tendency emerging in adaptation literature of what we term interrupted agency, where formal adaptation interventions interrupt everyday adaptation strategies—and agency—of local actors, potentially leading to maladaptation. We did so in North Central Vietnam, where climate change is disrupting lives and livelihoods, and numerous formal and everyday adaptation measures are being implemented in response. We examined three key climate-affected sectors, agriculture, water management, and coastal management, drawing on existing literature as well as interviews and document and policy review. We found that differences in formal and everyday adaptations can indeed lead to interrupted agency yet, in some instances, also support complementarities and even transformative change. Such outcomes required dialogue and pluralistic input to adaptation-related policy, practice, and decision-making, underlining the importance of attention to participation, representation, and influence in decision-making in adaptation efforts. Our exploration of the concepts of everyday adaptation and interrupted agency illustrates that these can valuably contribute to adaptation literature, particularly on the politics of adaptation.

Key Words: *adaptation; agency; agriculture; climate change; coastal management; everyday; governance; Vietnam; water management*

INTRODUCTION

Across the globe, climate change is increasingly widespread and intense. The outlook is also grim. Emissions are again increasing after a drop during the beginnings of the COVID-19 pandemic, and new emissions reduction pledges given ahead of the United Nations Climate Change Conference of the Parties (COP26) in November 2021 fell far short of what is needed (UNFCCC 2021). This suggests an even more pressing need for supporting adaptation globally.

Formal, externally initiated adaptation efforts are indeed gaining momentum and financing globally. Adaptation financing flows, although inadequate, have increased sharply over the last several years (Oxfam 2020, Savvidou et al. 2021), and attention to adaptation in policy and research has also grown (Savvidou et al. 2021). Concurrently, research increasingly indicates the importance of examining the interplay between formal, externally driven adaptation measures and local efforts (Malik and Smith 2012, Mersha and van Laerhoven 2018). This is of course generally relevant as adaptation efforts intensify. However, it is especially pressing because emerging literature suggests that formal interventions in some instances contribute to increased vulnerability as well as maladaptation (Eriksen et al. 2021) partly through disrupting local adaptation measures (Funder et al. 2018, Mersha and van Laerhoven 2018, Rahman and Hickey 2019).

To examine such interplay, we propose the concepts of "everyday adaptation" and "interrupted agency." Our understanding of everyday adaptation draws on James Scott's (1989) work on everyday resistance and refers to the aggregate micro-practices articulated in response to ongoing social-ecological transformations including climate change. Just as Scott argued that aggregate small-scale resistance is an important although often overlooked form of collective action and political expression (1985, 1989), we suggest that so too are small-scale adaptation efforts, therefore warranting sharpened academic attention. As formal adaptation interventions are increasingly rolled out, understanding their interplay with existing everyday adaptations will be crucial for successful adaptation policy, programming, and implementation. We sought particularly to shed light on the emerging tendency of what we term interrupted agency, where externally driven formal interventions interrupt existing adaptation strategies—and agency—of local actors, potentially leading to maladaptation (Funder et al. 2018, Mersha and van Laerhoven 2018, Rahman and Hickey 2019).

We applied these concepts through an analysis of adaptation interplay in North Central Vietnam, where climate change is disrupting lives and livelihoods, and many everyday strategies and formal adaptation measures are being implemented in response (see, for example, Sen and Bond 2017, Phuong et al. 2018, Lindegaard 2020a, and Huynh et al. 2021). We considered such adaptation interplay in three highly climate-affected sectors of agriculture, water management and coastal management, synthesizing existing literature and supplementing this through interviews with sub-national officials and affected households as well as document and policy review.

We found that differences in everyday and formal adaptations do in some instances lead to interrupted agency. Yet they can also lead to complementarities and even transformative change. Such positive interplay between everyday and formal adaptations is linked to dialogue and pluralistic input in adaptation-related policy and practice, emphasizing attention to participation, representation, and influence in decision-making (see, for example, Ribot 2014 and Mikulewicz 2018). The findings also indicate that everyday adaptation can indeed be a form of collective action and political expression, an important contribution to literature on the politics of adaptation (Eriksen et al. 2015, Nightingale 2017, Dolšak and Prakash 2018, Mikulewicz 2018).

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EVERYDAY ADAPTATIONS, INTERRUPTED AGENCY, AND BEYOND

Everyday adaptation draws on the concept of the everyday, which is widely used with multiple conceptual lineages (see overview in Guillaume and Huysmans 2018:281). Here, we draw on James Scott's exploration of everyday as the "quiet, piecemeal process [es]" employed by "subordinate groups" to secure de facto gains (Scott 1989:34). Scott used the concept to theorize the nature of resistance and argues that small-scale activities, although often overlooked, can "constitute a form of collective action" and are a "vital means by which lower classes manifest their political interests" (1989:34). Scott's account of the everyday highlights how aggregate daily practices can together constitute effectual collective action through quotidian, informal means.

Our research applied this theorizing to adaptation rather than resistance. We used everyday adaptation to describe the aggregate micro-actions that cohere into strategies of adaptation to changing social-ecological conditions, including climate change. This conceptualization of everyday adaptation moves past binary categories of autonomous and planned that have long shaped adaptation research and policy; autonomous adaptation describes adaptation that "does not constitute a conscious response to climatic stimuli" (IPCC 2001:869) and has been used to describe spontaneous local changes in agricultural practices (e.g., Stupak 2017, Khanal et al. 2019) and broader livelihood strategies (e.g., Rahman and Hickey 2019, Rijal et al. 2022), among many other things. In contrast, planned adaptation is defined as "the result of a deliberate policy decision" (IPCC 2001:869). Everyday adaptation may initially resemble autonomous adaptation because of its focus on micro-actions. However, it challenges the fundamental distinction of intentionality underlying planned and autonomous. It emphasizes that banal micro-practices can exhibit intentionality and agency, understood here as "a person's ability to act on behalf of what he or she values" (Alkire 2008:2, in line with Amartya Sen's [1985, 1999] theorizing on agency). Furthermore, it recognizes the potential of aggregate micro-actions as political expression by the relatively powerless (Scott 1989). Such actions thus warrant more intense academic and policy attention than if understood merely as unconscious responses to climatic stimuli. Highlighting their potentially political nature provides a useful addition to growing understanding of the politics of adaptation (Eriksen et al. 2015, Nightingale 2017, Dolšak and Prakash 2018) and is important in a reality where marginalized, less powerful groups—with few political tools and opportunities at their disposal—are inordinately affected by climate change (Islam and Winkel 2017, Otto et al. 2017, Thomas et al. 2019).

Everyday adaptation also challenges the seeming distinction between bottom-up and top-down efforts implied by autonomous and planned adaptation, pointing instead to the importance of the interplay between these (see also Malik and Smith 2012, Mersha and van Laerhoven 2018). This reflects growing literature recognizing formal interventions—adaptation and otherwise—as integral in shaping local adaptation contexts and practices (see, for example, Nightingale 2017 and Funder et al. 2018) and in the production of vulnerability (Ribot 2014, Eriksen et al. 2021). Everyday adaptation supplements such literature by highlighting the potential for widespread, small-scale efforts to effect change in formal measures (Scott 1989). In this understanding, adaptation emerges as a highly relational process of co-production between formal, externally driven interventions and aggregate, small-scale local efforts. We, therefore, used the concept of everyday adaptation to examine the interplay between formal interventions and ongoing adaptation practice of local actors, i.e., how these affect and inform one another. We suggest that everyday adaptation may be undertaken by individuals, households, state actors, communities, or other organizations engaging in informal, small-scale measures, although our focus was on households.

Considering the interplay between formal, externally driven measures and aggregate micro-actions is pressing as adaptation efforts ramp up globally. This is especially because formal, externally driven adaptation efforts across geographical, climate, and governance settings are, in some cases, undermining adaptation and development outcomes. In Zambia, climate-related relocations have interrupted existing adaptation and coping strategies, for example. (Funder et al. 2018). Social protection schemes in Ethiopia have undermined everyday adaptation due to the conditions for receiving support (Mersha and van Laerhoven 2018). In Bangladesh, formal adaptation addressing climate change impacts in the northeastern floodplains has overlooked everyday adaptations and ultimately contributed to maladaptation (Rahman and Hickey 2019). These examples are indicative of a broader dynamic emerging in scholarly literature illustrated by a recent review of 34 internationally funded adaptation interventions, which warns that "[d]espite assertions in policy, practice, and academia of adaptation reducing vulnerability to climate change, we found clear evidence to the contrary" (Eriksen et al. 2021:3). Although not looking specifically at interplay with everyday adaptation, the authors found that formal adaptation measures often reinforced, redistributed, or produced new forms of vulnerability. These studies add to a string of research from across the globe underlying the need for formal adaptation interventions to take localized autonomous adaptation strategies into account to improve outcomes (Bawakyillenuo et al. 2016, Stupak 2017, Gentle et al. 2018, Khanal et al. 2019, Khan et al. 2021). Emerging from all of these is a real threat of formal adaptation interventions leading to maladaptation and increased vulnerability, with these negative effects often unevenly distributed, affecting marginalized groups and individuals most (Eriksen et al. 2021).

This is a pressing issue for researchers, policymakers, and practitioners as adaptation efforts intensify globally. To support examination of the issue, we propose the concept of interrupted agency to explore instances in which formal adaptation interventions interrupt the agency of those targeted, as expressed through everyday adaptations. Importantly, the micro-actions constituting everyday adaptations are not necessarily halted but can be reconfigured in response (see, for example, Rahman and Hickey 2019). In examining interrupted agency, we sought to identify what factors contributed to interrupted agency, how these might be helped, and what we can learn about mechanisms for more positive interplay of formal with everyday adaptations. Although we focused on interrupted agency as a pressing issue for research and policy, we were also open to other types of adaptation interplay, or the interplay between formal and everyday adaptation. This includes situations in which formal interventions enable agency as expressed through everyday adaptations as well as more ambiguous interplay. Because research indicates

Table 1. Interviews conducted. DARD, Departments of Agriculture and Rural Development; DONRE, Departments of Natural Resources and Environment.

Level	Entity	Number	Years
Agriculture			
Province	Quang Binh DARD	3	2013, 2014
District	Quang Trach Town; Le Thuy, Quang Ninh Districts	6	2013, 2014
Commune	Hai Ninh, Phong Thuy, Quan Hau Communes	5	2013, 2014, 2019
Village/household	Tan Dinh and Dai Phong Villages	12	2014, 2019
Water management			
Province	Thua Thien Hue DONRE, DARD, Thao Long management company, the state-owned one-member limited liability company managing and exploiting irrigation works (State Water Company) in Thua Thien Hue	11	2013, 2014, 2015, 2019, 2021
District	Huong Tra Town; Phu Vang and Quang Dien Districts	4	2013, 2014, 2015, 2021
Commune	Huong Phong Commune, Huong Phong Cooperative	5	2015, 2021
Village/household	Thuan Hoa Village	25	2014, 2021
Coastal management			
Province	Thua Thien Hue DONRE, DARD	5	2013, 2014, 2021
District	Huong Tra Town; Phu Vang, Phu Loc, Quang Dien Districts	7	2014, 2015, 2021
Commune	Hai Duong, Thuan An, Quang Cong, Phu Thuan Communes	9	2014, 2015, 2021
Village/household	Thai Duong Ha Nam, An Duong 3, Thanh Phuoc Villages	29	2014, 2015, 2021

differentiated outcomes of adaptation interventions (See and Wilmsen 2020, Eriksen et al. 2021), we suggest that multiple types of interplay can occur simultaneously and for different intended beneficiaries or affected households or groups.

We applied the concepts of everyday adaptation and interrupted agency to the setting of North-Central Vietnam, where climate change is acute and formal and everyday responses extensive. By examining three well-researched, highly climate-affected sectors, where tendencies of interrupted as well as enabled agency have been observed, we sought to better understand different types of adaptation interplay and to consider the utility of everyday adaptation and interrupted agency for further scholarship.

METHODS

Our analysis drew on three case studies from North Central Vietnam, specifically from Thua Thien Hue (Hue) Province and Quang Binh Province. Data were gathered through interviews with sub-national officials and households, document and policy review, and secondary sources. We conducted primary data collection, but we also built heavily on research conducted from 2012–2016 through the Climate Change and Rural Institutions Research Program (CCRI), with which the authors were affiliated. Our analysis is based on a synthesis of these data, which were collected over almost 10 years, across two provinces, and three key climate-related sectors.

Table 1 provides an overview of the interviews. Key informant interviews were conducted that focused on officials at each sub-national level (provincial, town/district, and commune) dealing with climate change responses and natural resource management, e.g., from Departments of Agriculture and Rural Development (DARD) and Departments of Natural Resources and Environment (DONRE). In addition, purposive and convenience sampling of households, with attention to income, livelihoods, and gender diversity, was conducted. Relevant villages were selected, and available individuals/households were interviewed. Interview topics included adaptation project formulation and implementation, household input, households' own adaptation efforts, and the impact of formal projects on household adaptation, livelihoods, and vulnerability.

We also drew on document and policy review. The reviews included formal policies as well as unpublished planning documents provided by relevant government departments, as detailed in the case studies. In addition, we drew on previously published findings from the CCRI program and other climate-related research in these provinces.

ADAPTATION INTERPLAY IN PRACTICE

We explored the interplay between everyday and formal adaptations in North Central Vietnam. Vietnam is a middle-income country boasting striking poverty reduction over the last few decades (World Bank 2022). However, it is also highly exposed to natural hazards of typhoons and flooding, and livelihoods and important economic activities are sensitive to increasingly intense hazards and weather variability linked to climate change (Rentschler et al. 2020). The government's response to climate change has been proactive, with support from international development actors (Zink 2013). There is strong policy direction from the national level, with sub-national discretion allowing provincial and district levels to tailor policies and programs to their areas. Even before national policy on climate change emerged in the late 2000s, subnational governments were already managing the effects of climate change locally, as were affected households through everyday adaptations (Espagne et al. 2021; Interviews in Huong Tra Town 2015 and with Hue Province DARD 2015).

Agriculture, water resources, and coastal areas are especially affected by climate change and simultaneously extremely important for GDP, livelihoods, and food security in much of Vietnam (Rentschler et al. 2020, Espagne et al. 2021). These sectors also offered instructive examples of interplay of formal adaptations with everyday adaptations. The case of agriculture in Quang Binh Province revealed a profound shift from

interrupted agency to enabled agency and, indeed, systemic transformation. The case of water management in Thua Thien Hue Province evidenced broad benefits of formal adaptation but also instances of interrupted agency linked to specific water management practices. The case of coastal management in Hue Province illustrated enabled agency but also missed opportunities due to lack of coordination between formal and everyday adaptations.

Adaptation interplay in agriculture

Agriculture supports some 80% of the population in Quang Binh (Mackenzie et al. 2016), and rice is the dominant crop, occupying over 60% of the province's agricultural land (Quang Binh Provincial People's Committee 2020). However, climate change impacts, particularly unseasonal rainfall, flooding, and salinity intrusion pose a significant challenge to agricultural livelihoods and policies alike (ICEM 2016; Interviews with Quang Binh Province and Quang Trach Town 2013).

Formal adaptations in agriculture

Formal adaptation efforts have focused on supporting agricultural livelihoods with a focus on rice production. Rice production has figured large in policy and programming for several decades (Lindegaard 2020b), where Vietnamese provinces set annual targets for rice productivity in line with national targets. To meet these, authorities in Quang Binh support agricultural services such as irrigation, input, and machinery services via state-led agriculture cooperatives (Christoplos et al. 2017; Interviews with Quang Binh DARD 2013 and in Quang Trach Town 2013). These formal efforts seek to ensure that most paddy land can continue to produce the two rice crops per year that decades of agricultural policies and sizable investments, especially in water management, have emphasized. Provincial officials have also supported direct adaptation assistance to farmers for both rice and other crops. This includes providing new crop varieties as well as modernization initiatives to address climate change impacts, such as greenhouses, net houses, and drip irrigation systems.

Everyday adaptations in agriculture

Rice farmers have also engaged in significant and widespread everyday adaptations. To avoid risks of early floods, some rice farmers have converted to other crops. Most, however, have shifted to ratoon rice, a different variety than typically used. Ratoon rice normally has a lower yield but also a shorter growing season, which reduces the risk of early floods ruining the harvest by up to 70–80% (Sen and Bond 2017). Ratoon rice also requires less investment and labor, so time can be spent on other income-generating, community, and religious activities. Finally, ratoon rice has a better market price because it is an off-season rice entering the market at a time of lower supply (Sen and Bond 2017).

There are thus several factors influencing the choice of ratoon rice as an everyday adaptation for farmers, including non-climate related factors. These non-rice crops and ratoon rice require little water and less investment, important considerations highlighted by households. These everyday adaptations were also formulated in reference to market considerations, alternative livelihood opportunities, and even community and religious engagement (Sen et al. 2014, *personal communication*). This is a clear contrast to formal interventions, which were formulated largely in relation to existing policy priorities and infrastructure investments.

Adaptation interplay: from interrupted to enabled agency

The formal policy response to the everyday adaptations was, in effect, to ban them. Provincial and district authorities actively discouraged conversion to ratoon rice or other crops by refusing farmers access to state agricultural services such as irrigation, input supply, and climate-related assistance. State actors, therefore, used their authority and resources to hinder the adoption and effectiveness of this everyday adaptation (Interviews in Dai Phong and Tan Dinh Villages 2014, 2019). This stance was related to the differing decision-making factors and aims of the adaptation efforts. Formal adaptations were formulated in relation to existing investments, systems, and policies. In Quang Binh province, decades of extensive investments have been made in irrigation, dams, and pumps mainly to support the production of two rice crops annually. This policy priority continues to be emphasized through annual targets for rice productivity (Interviews with Quang Binh DARD and Le Thuy DARD 2014). Everyday adaptations, on the other hand, were elaborated in relation to opportunity costs and risks from the perspective of single households. These different knowledge bases, i.e., differing types and scales of knowledge and rationales behind them, had profound implications for preferred adaptation strategies.

Despite subnational authorities' efforts, farmers retained these everyday adaptations, especially ratoon rice. This prompted a series of meetings between farmers and subnational authorities, typical when officials tried to mobilize residents to follow state policy (see, for example, Hardy 2003 and Lindegaard 2020a). At the same time, however, universities and non-governmental organizations (NGOs) became involved in the interplay between the diverging adaptation strategies, offering technical and market support to farmers adopting ratoon rice. They helped increase the yield of ratoon rice significantly, to almost the same level as the typical government-promoted rice varieties, prompting a policy step change. In 2015, provincial authorities agreed to support farmers adopting ratoon rice and, from 2016 forward, they released numerous policies supporting development of ratoon rice and its value chain as well as restructuring the cropping system. Croplands in climate-affected areas are increasingly being converted to crops suitable to site-specific conditions and households' capacities (Interview with Commune Members 2019).

Notably, similar circumstances have been playing out nationally. These culminated in a 2015 national policy allowing farmers to convert low-yield or climate-vulnerable rice-producing areas to other crops that can better adapt to climate change and provide better incomes for farmers. The policy has been implemented in many areas of Vietnam since 2016 (GSO 2020). This case thus illustrates how "quiet, piecemeal process[es]" (Scott 1989:34) can indeed be a form of collective action and political expression. Ultimately, the case illustrates the striking evolution of an everyday strategy into transformative change, characterized by new configurations of knowledge exchange and dialogue between actors, changes in production systems, and shifts in agricultural policy.

Adaptation interplay in water management

In Hue Province, the water environment is central to everyday and economic activities. The Huong River Basin extends over half of the province, enabling widespread wet rice production, and the Tam Giang Lagoon parallels the coast for almost 70 km, supporting fishing and aquaculture (JICA 2017). The water environment is heavily managed through infrastructural interventions supporting wet rice production but is highly sensitive to increasing climate irregularities and extremes, including unpredictable rainfalls, early flooding, and dry spells.

Formal adaptations in water management

Formal adaptation interventions have focused on improving and extending water management infrastructure in the province (Hue People's Committee 2007 *personal communication*; CCAP 2012, *personal communication*; Interviews with Provincial DARD 2013, 2015 and Provincial DONRE 2013). The extensive nature of existing water management interventions—comprising hundreds of components including canals, pumping stations, dams, and retention ponds—has created an infrastructural path dependency within water management. Current efforts in the face of climate change are shaped by these as well as underlying policy rationales regarding rice targets and environmental resources as economic inputs (Lindegaard 2020b). Further improvement of water management infrastructure in the face of climate variability has focused on further expanding and concretizing irrigation channels, improving pumping stations, and constructing new reservoirs and major dams (Hue People's Committee 2007 *personal communication*; Interviews with Hue DARD 2012, 2015, 2021 and State Water Company 2021). These formal adaptations seek to improve existing systems, secure freshwater supply, and prevent flooding.

Thao Long Dam in particular, operational since 2007, is seen by officials as a centerpiece of these efforts (Lindegaard 2020b; Interviews with Hue DARD 2015 and Huong Tra Officials 2015). Thao Long is a barrage dam comprising a series of gates located where the Huong River meets the Tam Giang Lagoon prior to it emptying out to the South China Sea (or East Sea). The dam is critical for preventing salinity intrusion and ensuring fresh water for agriculture and daily freshwater demands of Hue City and surrounding districts (Interview with Thao Long Management Company 2015). It enables two rice crops per year in a large area that previously could only support one because of salinity intrusion and drought (Interviews with Huong Tra Town Officials 2015). The water retained by Thao Long is also used to improve water quality within the closed water management system by allowing for greater water circulation and exchange (Interview with State Water Company 2021). In addition, the dam's construction provided the first step in a large-scale provincial water management plan, including other major dams upstream (Interviews with Hue DARD 2015, 2021).

Everyday adaptations in water management

For rural areas specifically, everyday adaptations seek less to manage the water environment than to adjust livelihoods to changes in conditions. This often entails livelihood diversification, for instance through day labor, petty trade, or labor migration (Son. et al. 2020, Huynh et al. 2021; Interviews in Than Hoa Village 2014). Changes in agricultural practices are also evident, including crop diversification, changing seed varieties (often to drought-resistant varieties), changing the types and timings of other agricultural inputs, and shifting the cropping calendar to respond to changing seasons (Phuong et al. 2018). Aquaculture has also emerged over the last few decades as a significant alternative livelihood, as it has in other areas of Vietnam. Aquaculture emerged through the private sector, rather than as a state-led development, and has experienced huge growth over the last few decades. It is now ubiquitous in the coastal areas of the province and provides an important, though variable, source of income for many households (Son. et al. 2020; Interview with Quang Dien DARD 2013).

Adaptation interplay: interrupted agency for some, enabled for many

Formal adaptations in water management, and Thao Long specifically, have brought extensive benefits of increased freshwater supply and prevention of saltwater intrusion, important for agriculture, domestic use, and industry (Interviews with Hue DARD 2015, 2021). For some, however, they have also interrupted everyday adaptations as well as having more ambiguous effects. Thao Long's changes to the local water environment most clearly affected nearby aquaculture because opening of the barrage gates of the dam creates sudden changes in salinity levels or releases polluted water from upstream that can harm aquaculture (Interviews in Thuan Hoa Village 2014 and Thanh Phuoc 2021). It has been officially recommended that local residents are informed before the gates are opened, prompting investment in a warning system (Interviews with Thao Long Management Company 2014, 2021). However, for the last few years, the alarm system has not worked. Local households now manage based on their expectations and experience of dam openings, which imposes high, partially avoidable, risks on aquaculture (Interviews in Thanh Phuoc 2021).

More ambiguously, these resource-intensive water management interventions seek to support rice production even as local livelihoods shift away from rice, partly as an everyday adaptation. Many households no longer consider rice a major source of economic benefit compared to other livelihood opportunities, instead prioritizing seasonal migration to cities for work (Huynh et al. 2021, Simelton et al. 2021). Households often continue to grow rice to retain their land but do not invest in rice production as recommended by government departments. Furthermore, rice production relies increasingly on herbicides and pesticides, prompting concern over local environmental effects as well as rice quality (Huynh et al. 2021, Simelton et al. 2021). Despite marked benefits of formal water management interventions, there are thus disconnects between provincial adaptation aims and households' priorities that will likely increase in the future.

The case of water management illustrates how large-scale or system-wide interventions can simultaneously provide widespread benefits and struggle to accommodate diverse and mutable everyday adaptation efforts. Policy discussions of climate investment have often highlighted the importance of no- or low-regrets' solutions, which are likely to have positive socioeconomic outcomes in a wide range of climate scenarios (see, for example, IPCC 2012). Yet this case highlights the importance of attention to non-climatic factors and multiple time scales and perspectives if large-scale interventions are to improve adaptation outcomes

in the long run. This requires dialogue between stakeholders at the very least and, ideally, representation and accountability in decision-making, particularly for those directly affected.

Adaptation interplay in coastal management

Coastal management has long been of major import in Vietnam, where population and economic activities hug the coastline, and annual typhoons buffet much of the coast. In Thua Thien Hue province, coastal areas are rural and support livelihoods including fishing, aquaculture, and agriculture. Increasingly, they are also a draw for tourism, already an important aspect of the provincial economy because of the presence of the Imperial City in Hue Province. Coastal areas are, however, affected by increasingly powerful storms and intense erosion linked to climate change (Rentschler et al. 2020).

Formal coastal adaptations

In Vietnam, formal coastal management is extensive and has historically been heavy on hard infrastructural solutions often entailing a top-down approach, though soft solutions such as mangrove forests have also been applied (Lindegaard 2013, Rentschler et al. 2020). Hard measures in Hue Province include a series of dykes, a concretized coastline in an area that experiences severe erosion, a wave-breaker, and concretized roads better able to withstand storms and flooding (Nguyen Huu and Duong 2015). Officials would ideally like to further develop coastal infrastructure, for instance with additional dykes, but lack the funds (Interview with Phu Loc Officials 2015). Soft measures include an artificial sand dune that parallels the province's coastline, in some areas reaching up to 30 m high, which provides storm protection. In addition, there are shrub and tree planting initiatives on the dune and in coastal and estuary areas (Interview with Hai Duong Commune 2015).

A final notable formal adaptation measure is relocation of hundreds of coastal households affected by erosion and storms (Nguyen Huu and Duong 2015, Lindegaard 2020a). Entire villages have been moved and settled in relocation areas typically also near the coast but without the immediate danger of erosion. Boat-dwelling households have also been sedentarized (DaCosta and Turner 2007, UNDP 2014, Lindegaard 2018; Interviews with Provincial DARD, Huong Tra Town, Phu Vang District, Thuan An Commune, Hai Duong Commune, and Resettled Residents 2015). In these resettlements, program formulation and implementation have lacked input from those targeted, and results have been mixed. Affected residents experience less risk of losing their homes, assets, or lives as a result of resettlement. They have received a small parcel of land as well as some support to rebuild (Interviews with Huong Tra Town 2015; Huong Phong Commune 2015, 2021; Resettled Residents 2015, 2021; and Provincial DARD 2015). Continued proximity to the coast in resettlement areas, however, entails continued exposure to floods and storms, though it has also enabled many to retain coastal livelihoods (Interview with Households 2015, 2021). In addition, services and infrastructure in resettlement areas have in some cases been delayed, leaving residents without running water or electricity for months (Lindegaard 2020a). Together, the relocations and other formal coastal management interventions aim to secure coastal areas from the effects of storms and erosion, and, when that has failed, ensure the safety of coastal residents (Interview with Provincial DARD 2015).

Everyday coastal adaptations

Everyday adaptations to these environmental challenges are also evident. Households with the financial capacity have moved to the city or other areas. The poorest, however, lack this option (Interviews with Resettled Households, 2015). Many have been glad to see investments in coastal protection infrastructure, which they feel significantly reduces the impact of storm surges and related damage. However, erosion continues to be a problem. In response, households have planted trees to protect the sea bank, their land, and their homes, yet the saplings cannot always withstand coastal conditions. Households also expressed that the formal coastal protection infrastructure was more effective when combined with the everyday adaptation of tree planting, which reduces sand erosion due to wind and waves (Interview with Thai Duong Ha Nam Village 2021). Overall, whereas everyday adaptations are evident, they have had a limited impact.

Adaptation interplay: enabled agency but missed opportunities

In coastal management, there have been notable knock-on effects in the interplay between formal and everyday adaptations. These adaptations have generally been quite different, with formal adaptations focused on hard infrastructure and everyday adaptations generally comprising softer measures. This distinction is largely shaped by differences in resources and capacities between government actors and households. Yet, in their differences, they were able to complement and reinforce one another, enabling households' agency (Interviews in An Duong 3 Village 2014 and Thai Duong Ha Nam Village 2021). In addition, households found that the hard infrastructure has supported area tourism, creating more income opportunities for local residents. As a result, households have intensified their own coastal protection efforts (Interviews in Thai Duong Ha Nam Village 2021).

However, there have also been missed opportunities in the interplay between formal and everyday adaptation. Affected households and communities have often felt bypassed in the planning and implementation of hard solutions. Residents in coastal communes expressed that they are often only formally informed or consulted when an intervention has already been approved or in cases calling for contributions of land or labor (Interviews in Thuan Hoa Village 2014, Thanh Phuoc Village 2021). This is even regarding dams, dykes, or roads with direct livelihood impacts. In contrast, officials indicated that residents are more explicitly viewed as key stakeholders in soft interventions, partly because residents are seen as more integral to ensuring their success (Interviews with Huong Phong Commune 2021, Provincial DARD 2021). Applying a similar approach to harder measures may support better outcomes, with boons for both involved officials and affected households.

The coastal management case suggests that the differences that characterize formal and everyday adaptations—in knowledge, political influence, capacities, and resources—can offer valuable complementarity and mutual support. Increased coordination of formal and everyday adaptations, with attention to these complementarities, has the potential to improve outcomes. For adaptive coastal management, this is especially relevant in light of the recent policy shift toward integrated coastal zone management (ICZM) in Vietnam (Cuong and Cu 2014,

Table 2. Overview of adaptation interplay

	Main aims of everyday and formal adaptations	Interrupted/enabled agency
Agriculture	Different: improved livelihoods/well-being contra meeting rice targets	From interrupted to enabled agency
Water management	Same: manage increasing uncertainty and salinity intrusion	Interrupted agency for some, enabled for many
Coastal management	Same: manage heightened risk of extreme events and erosion	Enabled agency but missed opportunities

Rentschler et al. 2020). ICZM includes a participatory resource management approach, and implementation has proved difficult in Vietnam particularly in terms of shifting power and decision-making to new actors (Abelshausen et al. 2015). Yet, as evidenced in this case, when dialogue and coordination across formal and everyday adaptations are lacking, outcomes suffer.

REFLECTIONS ON ADAPTATION INTERPLAY

The three cases we presented allow for cross-cutting reflections on everyday adaptation, its interplay with formal adaptations, and the dynamics informing interrupted as well as enabled agency. In regard to everyday adaptation, there was indeed evidence of aggregate, adaptive micro-practices as collective action and political expression. This suggests the need for a shift from seeing such actions as unconscious or spontaneous (IPCC 1992) to viewing them more explicitly as potential expressions of political agency in situations of limited influence (Scott 1989). Such (re) conceptualization valuably places everyday adaptation on more equal footing with formal adaptation, underlining its significance as political expression and drawing attention to its potential to effect change. This provides an important contribution to literature on the politics of adaptation, which has tended to focus on political authorities (Eriksen et al. 2015, Nightingale 2017, Lindegaard 2018).

The specific cases illustrated different types of interplay between everyday and formal adaptations, with implications for interrupted and enabled agency. The case of agriculture shows the potential for differing aims of everyday and formal adaptations—improved livelihoods and well-being as opposed to meeting rice targets—to coincide with enabled agency, though this required active dialogue and support. In contrast, the case of water management shows that interrupted agency can occur even in situations with congruent formal and everyday adaptation aims. In the case of coastal protection, differing capacities and resources drove households' soft, everyday adaptations and hard, formal adaptations. However, these were able to complement each other, leading to enabled agency. Greater coordination between everyday and formal adaptations would likely have improved outcomes further. Table 2 provides an overview of the three cases, including the aims of formal and everyday adaptations alongside the main outcomes of interrupted or enabled agency for each sector.

Looking across the three cases, it becomes evident that interrupted agency is not necessarily a result of diverging or converging aims of formal and everyday adaptations. Neither does it directly follow from differences in the key decision-making factors informing formal and everyday adaptations, i.e., the knowledge, political influence, capacities, and resources on which these adaptations were based. In other words, even when formal and everyday adaptations were based on diverging factors and aims culminating in dissimilar adaptation efforts, interrupted agency did not necessarily occur. Rather, enabled agency was possible. In addition, differences in the decision-making factors were able to provide complementarities between formal and everyday, improving outcomes.

Drivers of interrupted and enabled agency also emerged. As suggested by existing literature (Bawakyillenuo et al. 2016, Stupak 2017, Gentle et al. 2018, Khanal et al. 2019, Khan et al. 2021), lack of influence of everyday adaptation in formal policies and programming was a major factor leading to interrupted agency. Together, the cases suggest that avoiding interrupted agency and supporting enabled agency hinged on pluralistic input in decision-making. These findings foreground questions of participation, representation, and political influence in climate responses (Ribot 2014, Mikulewicz 2018), from formulation of adaptation and development interventions through to management and practice.

CONCLUSIONS AND WAYS FORWARD

The cases we have explored contribute to nascent discussions on the concept of everyday adaptation and introduce the concept of interrupted agency. Here, we defined everyday adaptation as the aggregate micro-actions that cohere into strategies of adaptation to changing social-ecological conditions, including climate change. This breaks from dichotomies of planned and autonomous, instead exploring the interrelation and co-production of everyday and formal adaptations. Drawing on James Scott's (1985, 1989) work on everyday resistance, we also argued for an understanding of everyday adaptation as collective action and political expression.

This (re)conceptualization of small-scale, yet widespread adaptation action offers a valuable contribution to literature on the politics of adaptation. Such literature usefully underlines the highly political nature of adaptation, yet often with focus on formal actors and adaptation interventions (Eriksen et al. 2015, Nightingale 2017, Dolšak and Prakash 2018). Everyday adaptation supplements this by shedding light on the significance of small-scale action "a vast realm of political action...that is almost habitually overlooked" (Scott 1989:33). Further consideration of everyday adaptation across geographic and governance contexts would be useful to further explore its utility. In addition, examination of everyday adaptations of various actors, both state and non-state, would help further develop this concept, as in, for instance, emerging literature on street-level bureaucrats in adaptation (e.g., Funder and Mweeba 2019, Holstead et al. 2021).

We put forward the concept of interrupted agency to describe instances of externally driven formal interventions interrupting existing adaptation strategies—and agency—of local actors. Although this tendency was evident in the cases examined, we found that interrupted agency does not necessarily result from

diverging aims between everyday and formal efforts, nor from the differing knowledge, political influence, capabilities, and resources of the actors behind everyday and formal adaptations. Even in these instances, enabled agency was possible. Yet this required active dialogue and pluralistic input into decision-making processes. This adds to literature calling for the acknowledgement and inclusion of situated adaptation practice in formal planning and programming (Bawakyillenuo et al. 2016, Gentle et al. 2018, Khanal et al. 2019, Rahman and Hickey 2019, Khan et al. 2021). As adaptation efforts intensify globally, further attention to the interplay between formal and everyday adaptations—from interrupted to enabled agency—will be vital to better understanding and supporting climate change responses and outcomes.

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Data Availability:

The data that support the findings of this study are available on request from the corresponding author, LTHS. None of the data/code are publicly available because of restrictions, e.g., they contain information that could compromise the privacy of research participants. Ethical approval for this research study was granted by the Research Council of the Danish Institute for International Studies.

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