

# Disorientations: The Political Ecology of “Displacing” Floating Communities from Cambodia’s Tonle Sap Lake

Sopheak Chann 

*James Madison College, Michigan State University, East Lansing, MI, USA and  
Natural Resource Management and Development, Royal University of Phnom Penh, Phnom  
Penh, Cambodia, channso1@msu.edu*

Alice Beban

*School of People, Environment and Planning, Massey University, Auckland, New Zealand*

Amanda Flaim

*Department of Sociology, Michigan State University, East Lansing, MI, USA*

Timothy Gorman

*Department of Sociology, Montclair State University, Montclair, NJ, USA*

Long Ly Vouch

*Independent Researcher, Phnom Penh, Cambodia*

**Abstract:** In this article, we extend a theory of disorientations to reveal how attempts to fix and control both water and people are disrupting once-fluid relationships between the Tonle Sap Lake and communities who have lived with-on the lake for generations. Using ethnographic and participatory mapping methods, we examine the socio-ecological dynamics that preceded and succeeded in the forced relocation of three floating communities in 2018. We argue that communities’ experiences challenge land-centric and event-centric understandings of displacement that pathologise fluid lifeways and fail to account for the materiality of water that has shaped floating villages’ multi-generational relationships with their wetland ecology. We develop the concept of disorientations to illuminate villagers’ experiences of relocation within a collapsing aquatic ecosystem—a collapse catalysed by state efforts to impose fixity on both hydrological flow and community mobility. The lens of disorientations invites displacement debates to consider materialities of place—whether pulsing water or living, shifting soils.

អត្ថបទនេះបង្ហាញអំពី ទ្រឹស្តីថ្មី ដែលយើងហៅថា ការរង្វេង ដែលជាភាសាអង់គ្លេសថា Disorientations ។ ទ្រឹស្តី ការរង្វេងឆ្លុះបញ្ចាំងអោយឃើញថារាល់ការ បញ្ឈប់វិ រំខានមិនអោយប្រជាជន ដែលរស់នៅលើបឹងទន្លេសាបផ្លាស់ប្តូរទីលំនៅតាមរបបទឹកជំនន់ និងបង្កអោយមានផលប៉ះពាល់ យ៉ាងខ្លាំងដល់ ប្រជាជនដែលបានបន្ស៊ាំការរស់នៅបណ្តែកទឹក ជាច្រើនជំនាន់ មកហើយ។ ការស្រាវជ្រាវនេះ ធ្វើឡើងតាមរយៈវិធីសាស្ត្រ អង្កេតផ្ទាល់ និង ការធ្វើផែនទីដោយមានការចូលរួម ពីប្រជាជនបណ្តែកទឹក ចំនួនបីភូមិ ដែលត្រូវបានណែនាំអោយផ្លាស់ទីលំនៅមកលើដីគោកក្នុងឆ្នាំ២០១៨។ តាមរយៈបទពិសោធន៍របស់ប្រជាជនដែលត្រូវបានផ្លាស់ទីលំនៅ ក្រុមស្រាវជ្រាវយើង បានរកឃើញថា ការស្រាវជ្រាវផ្សេងៗទៀតដែលវិភាគលើការផ្លាស់ទីរបស់ប្រជាជននៅលើដីគោកមិនអាចឆ្លុះបញ្ចាំងពីបញ្ហារបស់ប្រជាជនដែលបានផ្លាស់ទីពី បឹងទន្លេសាបនោះទេ។ ដូច្នោះហើយ យើងបាននាំ យកទ្រឹស្តី ការរង្វេង នេះដើម្បី ឆ្លុះបញ្ចាំងអំពីផលលំបាករបស់ប្រជាជននៅបឹងទន្លេសាបដែលប្រឈមនឹងការខូចខាតប្រព័ន្ធអេកូឡូស៊ី ទន្ទឹមនឹង ការបង្ខំ អោយផ្លាស់ ទីលំ នៅ មកដីគោក។ ទ្រឹស្តី ការរង្វេង នេះផងដែរចង់ផ្តល់ អនុសាសន៍ដល់ អ្នកស្រាវជ្រាវ ដែលសិក្សា ការផ្លាស់ទីលំនៅអោយផ្អាកលើការវិភាគអំពីប្រព័ន្ធរូបវាសនារបស់ ទឹកនៃឆ្នេរដែលខ្លួន ស្រាវជ្រាវ ជាឧទាហរណ៍ មិនថាទឹក វិ ដីមានការប្រែប្រួលតាមរបបរបស់វា ។

**Keywords:** disorientation, displacement, materiality, water, Tonle Sap Lake, Cambodia

### Introduction

We are actually doing this for [the villagers]. We could not let them live on floating houses—it’s dangerous and difficult to control. (Interior Ministry spokesperson, quoted in Vida 2018)

In 2018, the Cambodian provincial government evicted three floating villages, home to more than 4,000 people, off their house-boat homes on the Tonle Sap Lake (TSL) into a densely packed encampment along a flood-prone embankment of the lake. For generations, families floated fluidly with vast seasonal changes of the lake and the fish that spawn and migrate. Now “settled” in stilted shacks, the villagers are vulnerable to high winds and unpredictable flooding, and experience significantly restricted access to their fisheries, as well as exposure to poor sanitation and health risks. This new precarious reality defies the discourses that state agents mobilised to justify relocation. Floating villages on the TSL have long been vulnerable to state attempts to control them under the guise of “environmental protection” (Sarooun 2001). Indeed, Kampong Chhnang provincial authorities cited masterplans to “clean up” the area as justification for the eviction (Lipes 2019). Community representatives we interviewed, however, felt that there were other motives for the state action, claiming: “it’s all about allowing development. People with money are buying land along the water and large-scale fishing ... they make money from this” (Khmer male village representative, 19 July 2019). Critics similarly claim that eviction is motivated by authorities’ desire for territorial control over waterways, potential for wealth accumulation through fisheries and land development, and scoring political points by targeting ethnic Vietnamese, who make up a large proportion of floating communities, and are subject to widespread discrimination in Cambodia (Frewer 2016; Lipes 2019; Sarooun 2001;

14678330, 0, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/anti.13024 by Massey University Library, Wiley Online Library on [23/06/2024]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Sokhean 2015; Sperfeldt 2020). However, the state agencies responsible for relocating the villagers cited concerns about water quality and declining fisheries (Kunthean 2019), as well as the need to ensure people’s safety from storms and to improve poor families’ livelihoods (Chanveasna 2017). Guiding questions to interrogate these disjunctures lie in the statement by the Interior Ministry’s spokesperson quoted above: what, or who, is difficult to control? And, how does the state assert control in these fluid spaces?

The 2018 forced relocation, like many development-induced displacements that target agrarian and water-dwelling communities around the world, follows decades of state and capital interventions that have eroded floating communities’ livelihoods, restricted their access to water, seasonal farmland, and fertile forests, and undermined their knowledges, cultural practices, and lifeways. Dual ruptures of social displacement and ecological crises are not unique to the TSL, however (see Baird and Barney 2019; Baird and Shoemaker 2007). Over the past 30 years, states have been undertaking rapid enclosures of rivers and riverine communities across the entire Mekong. A number of development projects attend this enclosure, but none so much as hydropower, which governments advance to pursue rapid economic development. Driving these vast transformations of the Mekong ecology upstream from the TSL and its floating villages are prevailing discourses of river systems and hydrological flows in need of “management” and “local people” as barriers to development and conservation. Against this discursive backdrop, displacement has now become a feature of Mekong development (Boelens et al. 2023).

While hydropower is offered as a buffer against growing climate volatility and a “solution” to seasonal floods and droughts, hydropower interventions along the Mekong River and tributaries that feed the TSL are actually choking the region of a characteristic flood pulse that has generated ecological abundance for the region. The remarkable abundance of the region derives from the unique hydrological function of the Mekong’s hydrological system. Twice a year, the Tonle Sap River reverses course entirely, sending water, migratory fish, and nutrients from the Mekong in a “flood pulse” that, during the rainy season, can expand the lake up to six times its dry-season size (Grundy-Warr and Lin 2020). This annual flood pattern is critical for both the productivity of fisheries (Halls and Hortle 2021; Sabo et al. 2017) and the agrarian communities reliant upon the floodwaters for replenishment of nutrients and water (Arias et al. 2012; Grundy-Warr and Lin 2020). Villagers have floated and moved with the annual floods to ensure access to fishing grounds and protection from storms, a way of living with the dramatic flood pulse that they have adapted over generations. However, dams, climate change, intensive agriculture, and land development have altered the predictability of flood patterns, causing drastic fisheries decline (Arias et al. 2012; Grundy-Warr and Lin 2020). The flood pulse has declined since the 1990s, and water levels were so low during the wet season in two of the past five years that the river flow reversal occurred months later than usual (Baird and Thorne 2023; Seiff 2020). While states debate the causes of these rapid changes, new research (Dang et al. 2022) indicates that dams disproportionately impact water levels and pulse of the TSL system, and the effect has increased considerably in recent years.

While similar to agrarian displacements worldwide, the forced relocation of *floating* communities from a collapsing aquatic ecosystem raises questions about the applicability of land-centric displacement framings to this and other water-based contexts. Water is not land. Living with-on the water—a term we propose to capture the lives of people who are not merely living “on” the water in their houseboats, but also “with” the water’s flows<sup>1</sup>—involves a set of embodied relationships with the water and its material dimensions. Floating communities’ lives are oriented to the rapidly shifting flows of the Tonle Sap ecosystem and depend upon fluidity to maintain their livelihoods and cultures. Now, with the slow violences of ecological collapse and state policies that penalise floating communities, villagers are unable to orient to the water’s flows and diminished pulse (Baird 2021; Blake and Barney 2018; Nixon 2011). And, while the move to land near the water’s edge may promise fixity and security, their new reality is one of exacerbated precarity. Thus, we argue, the language of displacement cannot capture the experiences of people who are forced off the water by political action and ecological collapse.

Rooted in ethnographic and participatory mapping methods, our analysis explores the socio-ecological dynamics that preceded and followed the forced relocation of three floating communities on the TSL in 2018. Our research reveals that, rather than living fixed in location, floating communities “oriented” their lifeways in relation to seasonally changing flows and fish migrations. Now, with hydropower and other development-induced disruptions to seasonal flood pulse and fish migrations, authorities increasingly impose fixity on both water flows and human mobility, resulting in disorientations for these communities and the ecology. Because wetlands and riverine systems encompass 42% of the Lower Mekong River Basin (Meynell 2017) and more than 30% of Cambodia, any assessment of the socio-ecological impacts of dams, climate change, and land development in the Mekong region requires a conceptual framework that accommodates the complex and fluid materiality of water, which mediates and refuses governance, control, and enclosure.

As our evidentiary exploration reveals in depth, the layers of violence committed against water dwellers of the TSL and the Mekong cannot be disentangled from the materiality of water (Bakker 2012). As such, their experiences and perceptions cannot be fully understood or represented through available conceptual lenses of displacement (Kelley et al. 2022), eviction (Baker 2020; Brickell et al. 2017), rupture (Mahanty et al. 2023a, 2023b), or slow violence (Baird 2021; Nixon 2011). We therefore theorise “disorientations” to: (i) recognise the water itself and its materiality as agentic, whether in flow, pulse, recession, or flood, by co-creating and orienting communities; (ii) decentre land-centric notions of displacement from one firm location to another; (iii) challenge linear and event-centric timescales of displacement literatures (if water-dwellers, fish, and flooded forests are oriented to the seasonal pulse, disorientations occur when possibilities for seasonal “return” and seasonal “movement” orientations are foreclosed); (iv) acknowledge that communities often lose their psychologically and geographically oriented sense of place long before the physical “removal” of community from place begins; and (v) open up theoretical space to consider what our limited

methodological tools often fail to capture—water moves in dramatic fashion, but forests and trees also move, sands move, land also moves over time. A fuller political ecology of rural livelihoods and displacement must account for the dynamism of place in shaping the dynamism of livelihoods.

In what follows, we examine the impacts of this drastic transformation of the TSL and the Mekong and displacement projects on the floating communities through a political ecology of disorientations, through which dynamic intersections between ecological changes and the state’s interventions are examined. Approaching the political ecology of disorientations through emphasising ecological transformations (Turner 2016; Walker 2005), we proceed with a discussion of the materiality of water in the TSL and the Mekong River. We examine how changing flows and the state’s displacement scheme disorient communities’ sense of place, direct everyday experience with-on the lake, and livelihoods; and frame these changing ecologies and the state’s interventions as politics of resources, land, and water enclosures. After establishing how the materiality of water shapes and is shaped by social, political, and natural systems, we examine political-ecological literatures of displacement and its potential to describe water-based lifeways and ruptures. Following a discussion of methodology, we present a case study of disorientations in three parts. First, we examine how floating village lifeways and the dynamic wetland ecology have long been *oriented* to seasonal flood pulse and fluctuations. We then examine two interconnected processes that constitute and cause disorientations: the drastic changing of the water’s flows and the state’s efforts to “fix” communities, ostensibly as a strategy to manage the ecological crisis leaving communities exposed to disasters and increasing costs of leaving.

## Materiality of Water and the Mekong

A thorough analysis of the state’s relocation of floating villages warrants a complex understanding of linked ruptures across the vast Mekong ecosystems that flow into and out of the Tonle Sap Lake (Mahanty 2023a, 2023b). Because water, wetlands, and rivers comprise up to 42% of the land-waterscape of the Lower Mekong River Basin, the foundation for our understanding is water. Sneddon (2007) argued the linkages of the biophysical process and the political economy of the freshwater fishery were not well understood in Cambodia, where state and market driven processes are based on resource dispossession of rural communities. Sneddon (2007:175) emphasised biophysical materiality of the fish in shaping the political economy of the Tonle Sap and suggested that fish “production in Tonle Sap is almost entirely dependent on the magnitude and timing of annual floods”. However, research investigating the dynamic relationship between rapidly changing flow and how it reshapes the socio-ecological relationship of the Mekong is not well studied. Bakker (1999, 2012) offers “materiality of water” as a framework for interrogating the political and socio-natural dimensions of water, and by extension, water-based systems that are built with, on, and in relation to it. Political materiality references how water’s “biophysical and ecological characteristics ... shape human perceptions, discursive constructions, and responses to

water” (Bakker 2012:619). The hydrological process of the Mekong shaped the region’s development and conservation discourses and policies. For example, due to the vast extension of floods between dry and wet seasons creating the richness of biodiversity, Tonle Sap Lake has been dedicated by UNESCO and the state as a Biosphere Reserve. Socio-natural materiality emphasises the agency of hydrology shaping socio-ecological relationships (Bakker 2012), for “underlying many contemporary conversations about nature and society is a common desire to shift our frames of reference by saying something quite simple: namely, that things other than humans make a difference for the way social relations unfold” (Bakker 2012:620). In this regard, we explore how changing the flow of water shapes social dynamics. This paper explores how water shapes the everyday and direct experiences of the floating communities. Boelens et al. (2023:1136) offer a linked concept of a river as an “ecosociety” constructed by “local hydrology, ecology, climates and human cultures across space and time scales”. Camargo (2022) emphasises these socio-hydrological dynamics as fluid and transient. Deploying this lens thus animates all dimensions of the vast TSL waterscape, the communities who live with-on it, and the state and corporate entities aiming to govern, harness, privatise, and/or conserve it.

The materiality of the Mekong River highlights its flow through six different nation-states inhabited by at least 70 ethnic groups (Hook et al. 2003). The annual flow of 475 billion cubic metres of water course through 4,800 kilometres of river (Adamson et al. 2009:54), that render the Mekong the most productive freshwater fishery in the world. Mekong governance debates are increasingly shaped by dams, with over 150 hydropower dams built across its basin (Stimson 2022), thus shaping and reassembling hydro-social relations across the region. Due to changes in the hydrological regime, relations between upstream and downstream states are contentious, with regional and international governance institutions setting terms for debate and knowledge constructions of the river, while fishing communities, ethnic minorities, and Indigenous peoples are rarely consulted or fairly compensated for their losses (Green and Baird 2020; Pokhrel et al. 2018; Soukhaphon et al. 2021), translocal Mekong justice movements are emerging (Yong 2020).

The Tonle Sap Lake is part of the Mekong Basin, yet its socionatural and political materialities are arguably unique in the region. Along the Tonle Sap Lake, there are no clear boundaries nor legal frameworks for water. Previously functioning as an “escape valve” frontier for landless/stateless people (Parsons and Lawreniuk 2018), the lake is increasingly closed off to villagers as the state issues fishing and sand concessions and simultaneously pushes for bounded zones of conservation (Ishikawa et al. 2017; Miller et al. 2021). As an important site for the UNESCO Biosphere Reserve, a Ramsar Site, and the heart of the Mekong, TSL is considered by conservationists to be a critical spot for global biodiversity preservation and the sustainability of the Mekong region (Gillespie 2016; Keskinen et al. 2015; Ng and Park 2021). State and international development agencies have introduced development programmes, some of which are associated with conservation agendas, to “improve” local livelihoods and to “sustain” ecologies. A recent popular approach is the “water-energy-food nexus”, which, according to

Keskinen et al. (2015:5430), asserts that “the TSL is a nexus hotspot within the Mekong, where local, national and regional drivers of water, energy and food security meet and merge in multiple ways”. The construction of hydropower dams is a central feature of the TSL’s present and future (Pokhrel et al. 2018). Furthermore, since late 2021, the Cambodian state’s crackdowns on “illegal” fishing and land encroachments across the TSL have escalated pressures on villagers’ lives, who already struggle with the changing water flows. Now, the changing water regime and the state’s drastic interventions on fishing and deforestation have extensive impacts on communities and the sustainability of the lake’s ecosystem.

### **Political Ecologies of Displacement and Disorientations**

If water is the fluid foundation upon which the Tonle Sap Lake’s floating villages were built, its multidimensional and complex materiality troubles a conventional story of “displacement”. Both theoretical and political approaches to displacement, Malkki (1992) argues, are steeped in Western and colonising biases toward a status of permanent “settlement” and “rootedness”, thus pathologising lifeways like those of the floating villages—lifeways that are rarely or only briefly “rooted”, both literally and metaphorically speaking. 30 years after her intervention, states are as determined as ever to “fix” the lifeways of mobile communities, to violent effect. And, while political-ecological approaches to migration studies are pushing against the normative dimensions of conventional displacement theory, latent assumptions prevail: “placeness” connotes land. The meaning of “home” in much of the work on eviction and land grabbing is “fixed and morally affirmative” (Baker 2020), which can erase or devalue the multiple social, political, and ecological forces that reconstruct home as a vulnerable space (Blunt and Dowling 2006). Feminist geographers have thus called for attention to the ongoing remaking and unmaking of the home present in the processes of eviction and resistance to it (Brickell et al. 2017).

A rich literature is tracking the displacement of rural communities for agribusiness plantations and large dams, and displacement of urban communities for urban development in the Lower Mekong River Basin and Cambodia. The predominant scholarly focus on land-to-land relocations, however, impedes an accurate appreciation for the dynamics of water-to-land relocations in important ways. The Tonle Sap has previously functioned as an “escape valve” frontier for landless/stateless people, as people who could not access land due to lack of financial resources or citizenship, could access the waterscape, which cannot be privately owned. The water provides a home, food, and a livelihood. Legal frameworks and boundaries for water are unclear and regulations on fishing are variably enforced; communities living with-on the water have been able to adapt to changing regulatory regimes by remaining mobile and moving to access fishing areas dependent on seasonal regulations and the presence of large fishers or authorities. While some relocated households received a small amount of compensation, this has been inconsistent and inadequate. How is one to be compensated for lost access to vast floating and foraging zones?

Temporal assumptions of displacement as a singular event are also challenged in recent work. With few exceptions (Manoram et al. 2017), most studies of displacement in the Mekong focus primarily on the moment of eviction, concerns regarding compensation for those evicted, or the lack of support and infrastructure in relocation sites. Brickell et al. (2017:1) use the language of eviction rather than displacement to emphasise the active violence of the process, defining this as “when people are forced out of their homes and off their land against their will, with little notice or none at all, often with the threat or use of violence”. In practice, as Baker (2020) argues, “eviction” is a complicated category that evades simple definitions, and emergent work emphasises that the moment of being physically removed is just one in a long set of processes that constitute eviction, resistance, and resettlement. Theories of slow violence (Baird 2021; Nixon 2011) and double displacement (Miller et al. 2022) reflect complex realities and longer timescales in which evictions occur. As multiple dispossessions and violences often precede a “moment” of eviction, particularly in contexts of political and climate volatility, Kelley et al. (2022) propose the lens of “cumulative socionatural displacements”. The emerging literature on “rupture” reveals further how crises emerge through the accumulation of slow violence, generating irreversible effects that are increasingly part of the everyday condition of the Anthropocene (Cretney and Nissen 2023; Mahanty et al. 2023a, 2023b). In the context of the LMRB, these ruptures and cumulative socionatural displacements include, but are not limited to, stopping pulse and flow, dramatically reduced fish stocks, restricted access to fishing, the death of critical foraging and farming ecosystems, and criminalising livelihoods and cultural practices.

The literature on displacement far exceeds that on the lived experience of resettlement, and resettlement literature tends to a normative bias of assuming a given solution (of settling people in place), which dismisses the ongoing violence people can experience once relocated. Once resituated, people’s memories, aspirations, and everyday practices can also disrupt or destabilise the official narratives of progress and improvement that tend to place the bodies of evictees firmly within the “fixed” grounds of a new home site (Arrigoitia 2017). Arrigoitia postulates that this focus may be due to evictions tending to be more explicitly unjust, whereas resettlement appears to offer an alternative of sorts. But the solutions offered do not settle the harshness that characterises evictions and can produce new forms of inequality within and between groups. In discussions of resettlement of floating communities, even articles asserting the violence of the process of eviction assume that relocation is a given: the question is simply how to relocate people in a just way (see e.g. Smith 2021). This normative bias toward settlement limits our ability to understand how the slow violence of displacement continues in the process of relocation (Malkki 1992).

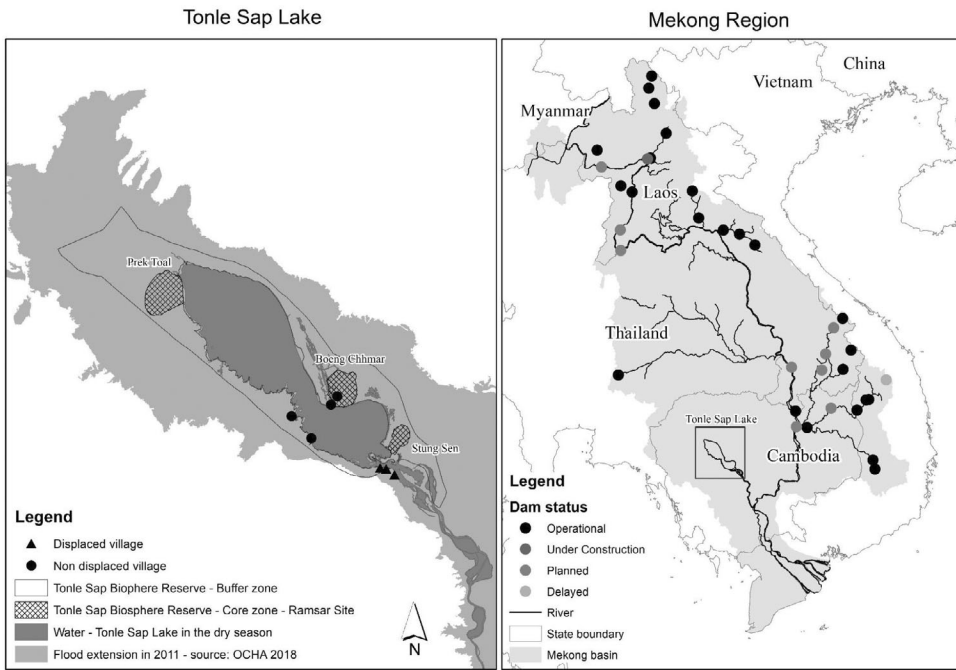
Given the limitations inherent to displacement/relocation language, we offer disorientations to more accurately illuminate the violences and traumas that attend attempts to enclose, fix-in-place, and govern both mobile communities and fluid ecosystems. When relations between water and communities rupture, disorientations invite a broad understanding of transformations in geographical, social, and mental directionalities/dispositions over a longer time horizon. Within

geography, “disorientation” has been subject to recent critical analysis (e.g. Harbin 2016; Martin and Rosello 2016). For Bissell and Gorman-Murray (2019:707–708), “disorientation is a productive geographical concept”, associated with feelings of confusion and disintegration, often in response to “embodied encounters with unfamiliar others or experiences in unfamiliar places”. “Disorientation”, Schmidt di Friedberg (2018) offers, is a radical discontinuity with our being in the world and habitual system of references. To be oriented, then, is not to be fixed in place, but to have a system of spatial reference that enables us to navigate our environments; or, per Ahmed (2006:543), to “have our bearings” (see also Feldman and Geisler 2012). To be *disoriented*, then, involves disrupting a secure sense of place and belonging (Wylie 2021), “bodies lose their orienting relations to other bodies, to actions, and to situations” (Bissell and Gorman-Murray 2019:707), which is symptomatic of late capitalism. We extend these understandings by emphasising the multiple disorientations that are occurring in the TSL: disorientations of floating communities occur not only in a moment of eviction, but also with and in response to conditions of rapid water grabbing and enclosures along the *entire Mekong* (which includes its vast fish migrations, flooded forests, and more-than-human entities and relationships), which disorient the water’s directional flow and communities’ directional relations thereto (Baird and Barney 2019).

## Methodologies and Research Site

This research is based on multiple empirical approaches including semi-structured interviews (2018–2023), community engagement workshops (May 2022), participatory mapping (PMAP; June 2022–March 2023), and photo-elicitation workshops (July 2022 – March 2023). Our analysis primarily engages three floating villages in Kampong Chhnang Province, Cambodia, where approximately 4,500 people of Khmer, Cham, and Vietnamese ethnicity were relocated. Some of the Vietnamese remain stateless, denied citizenship and recognised only as temporary residents by the Cambodian government. The Cham are among the most vulnerable population who have been disproportionately exposed to state violence and resource exclusion (Duong 2006). These two groups are impacted most by the displacement scheme. To explore the disorientating effects of the relocation, the research also engaged four non-displaced floating communities in Pursat and Kampong Thum provinces (Figure 1). These four communities extend our understanding of the villages that are affected by the changes of the water, but not directly impacted by displacement.

All seven villages are located inside Tonle Sap Biosphere Reserve (TSBR) Zone 3 where private land ownership and usage are prohibited (Figure 1; for details about TSBR, see UNESCO 2019). Two still-floating villages are located in a core zone of the TSBR, where land and resource accesses are highly restricted or forbidden. The disoriented villages are now located at the edge of the TSBR buffer zone. These villages have experienced extensive territorial contestation between public, private, and governmental agencies (Grundy-Warr and Sithirith 2015). Through conflicts, the geographical extensions of different fishing, farming, and



**Figure 1:** Tonle Sap Lake and research sites (left) and hydropower dams in Lower Mekong River Basin (right). Source: maps created by the authors using GIS data from ODC, OCHA, and IDRISI.

conservation efforts have shifted over time, reorienting communities' relationships with the wetlands.

Our research was conducted in two stages: during the displacement (2018) and after the eviction. Each method and data collection period informed subsequent phases to capture changing socio-hydrological relationships, particularly in response to the relocation. During the early stage of relocation (2018–2019), the second and fourth authors spent three weeks interviewing 28 villagers who had been evicted, as well as interviewing provincial-level authorities who directed the relocation to provide insight into the state justifications for and views of the relocation. In 2021 and 2022, our expanded research team returned to conduct extensive fieldwork, including two community engagement workshops, 30 semi-structured interviews, and 11 participatory mapping workshops. Community workshops engaged 20 male and female participants (aged 20–70) from different ethnic backgrounds—Cham, Vietnamese, and Khmer—to collaboratively identify key issues facing their communities and to facilitate communication and trust for further fieldwork. In January 2023, we returned to the displaced communities to display and discuss—via photos and artwork—the preliminary outcomes of the collaborative research. This second community engagement workshop allowed us to verify information, further engage with villagers, and update information from previous interviews and participatory mapping exercises.

Narratives and visual evidence gathered and co-produced during participatory mapping (PMAP) inform this paper. Through collaborative mapping, we explored villagers’ knowledges, perspectives, and experiences alongside exploring shifts in the physical, geographical contours and boundaries of their livelihoods. By anchoring narratives in lived, “dwelling” space (Roth 2009), we account for how experiences and perspectives change with, map onto, and resist state-imposed borders and boundaries, wetlands and other resource-rich sites, hydrological shifts, and relocation.

Theoretical insights into the political ecology of disorientations are derived from long-term ethnographic engagements and solidarities with communities targeted by “development” interventions in Cambodia and across the broader Mekong region. In addition to drawing from our diverse disciplinary and experiential backgrounds, our team consists of two Cambodian scholars, one of whom is the lead author. Combined, the Cambodian scholars possess more than 20 years of experience conducting empirical research on hydropower dams and resource contestation in Cambodia and the Mekong; and, both scholars’ lives have been impacted by environmental change, resource dispossession, and violence in the region. All three Western scholars have more than a decade of research experience conducting participatory action research in solidarity with agrarian, Indigenous, and ethnic-minority communities in Southeast Asia. The second author is fluent in Khmer and has studied rural dispossessions in Cambodia for more than 15 years. All authors have been involved in research design, data collection, theoretical conceptualisation, analysis, and writing at different stages.

## Disorientations

### *Orienting with-on the Floods and the Disruptive Flow*

To emphasise the important roles of the flood pulse in socio-ecological relations prior to village displacement, we illustrate how generations of villagers have oriented their lives and livelihoods with the flood pulse, from where they live, to fishing, farming, and performing social activities. Evidence from this section derives from observations and interviews with villagers who have not (yet) been forcibly relocated by the state; as such, their comparative experiences and perspectives reveal how villages are negotiating disorienting hydrologies while, as yet, still with-on the lake.

With notable but relatively brief interruptions to their livelihoods during the Pol Pot regime, villagers had been living with-on the TSL floodplains for generations—their livelihoods oriented in sync with seasonal floods and with changes in the flooded forests, tributaries/semi-artificial canals, fish migrations, and soils. “Villages have been in the area for hundreds of years”, the head of Seh Slab village reported (Seh Slab, 26 June 2022). Others confirmed that their families had lived in the area for generations on the water, and after they were forced to flee during the Pol Pot regime, they returned here: “I have grown up with my parents seeing their lives on the water; this is where I used to live so I have to return back here”. While most people had similar stories of being in the area for generations or coming in the 1980s after the fall of Pol Pot, some had come more recently. This was

particularly the case amongst ethnic Vietnamese families. Some said they were born and raised in the village after their parents settled there long before the Khmer Rouge regime; others had come in the early 2000s in search of a home and livelihood.

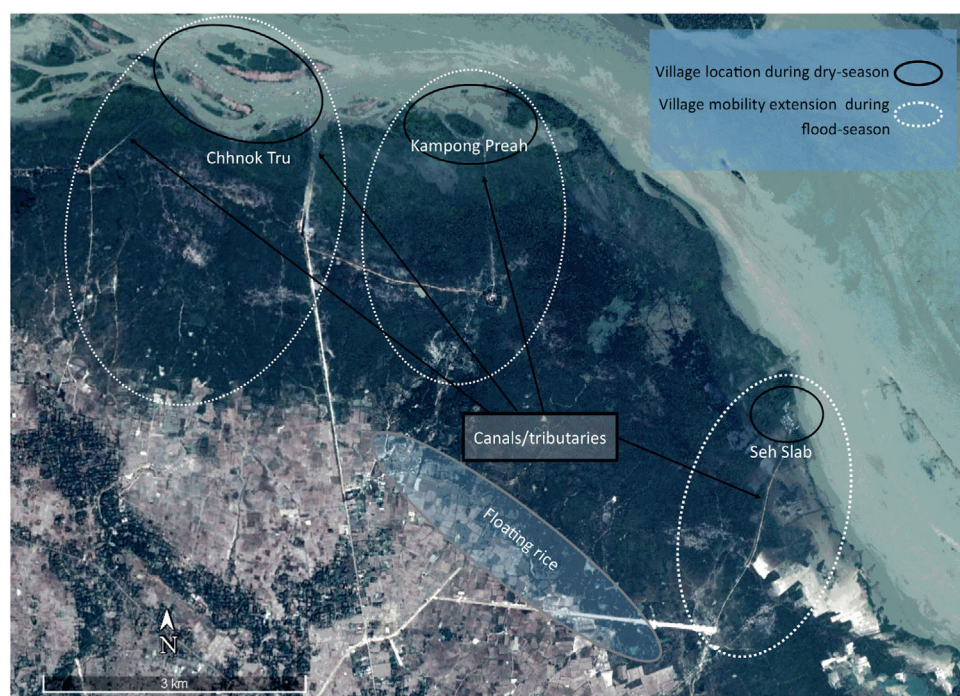
It is important not to romanticise or over-simplify relatively free and mobile life-ways with-on the water. Since the 1990s, communities have been subject to the spectre of eviction and to multiple state attempts to control their movement and “fix” water flows in space in the name of conservation and development. Since the French colonial era, the Cambodian state has “managed” Tonle Sap fisheries through dividing the commons into “fishing lots”—a system designed to facilitate commercial fisheries and generate state revenue (Sok 2014). In practice, as Sok (2014) notes, fishing lots were leased to well-connected concessionaires, and with profit valued over rural livelihoods, overfishing and ecological destruction was rife. Under increasing political pressure from voters, the Cambodian government cancelled the lot system prior to the 2013 national election. While this enabled floating communities to move more freely around the water, it also unleashed more competition for resources as fishers from other areas with expensive equipment moved in to fish in formerly privatised spaces (Dina and Sato 2015).

Despite the various and changing political borders and boundaries villagers have negotiated over time, however, they oriented their lives and livelihoods to the materiality of the water and fish—floating relatively freely alongside the changing flood pulse and fish migrations. Before their disorientation from the water and eventual eviction to fixed land, the Seh Slab village head noted, villagers “live on” (*Rous Nov*) the lake in two distinctive forms which reflected their relationship to the dry season (January–June)<sup>2</sup> and flooded season (July–December). “In this area we live six months in one place and six months floating” (Seh Slab, 26 June 2022).<sup>3</sup> During the dry season, he and other villagers explained, they settled within the mouth of the lake’s tributaries or canals, which allowed them to move between the floodplains and the lake during the flood season (Figure 2). During the dry season, by comparison, villagers settled along the lake’s shore, between the water and the flooded forest. In that period, they were firmly stationed on the ground, but remained closer to the water, so that they could commute by boats to fish, school, hospital, and markets. PMAP participants in other floating villages confirmed that this ability to move is crucial to people’s ability to live with-on the water:

Respondent 1: In the rainy season, we look for areas with strong trees so we can tie our boats up.

Respondent 2: ... Yes, in the rainy season, we move to this and that place, anywhere safe. (Men’s PMAP, Don Sdaeng)

According to our interviewees, the flood season comprises two stages—ascending flood (*Tuek Leung*) and descending flood (*Tuek Srork*)—the materiality of which orients fishers to both fish and forests. Before dam and climate change-induced disorientations of the floods, *Tuek Leung* occurred consistently from July to October. When the water rises, fish migrate out to the tributaries. Villagers journey



**Figure 2:** Chhnok Tru Commune December 2016. Source: map created by the authors using imagery from Google Earth Pro.

through the tributaries toward the flooded forest to anchor their homes to large trees. The higher the flood, the further they move; and the faster the floods rise, the shorter they stay in one location. With this moving upward with the floods, people are exposed to monsoon rains, and the forest plays an important role in protecting floating houses from the storms. Toward the end of October, when the floods descend, villagers float back down toward the lake. By late December, most of the houses are already at the edges of the lake. From November to January, the fish migrate from the TSL toward the Mekong after spawning in the floodplains and create the year’s most active fishing season.

Fishing practices, too, orient in relation with the changing flow of the water. People described how they fish in small waterways and flooded forests during the wet season when the lake’s open water is too deep and open to catch fish. They go far out on the lake in the dry season when the waterbody is narrower and shallower and when fish migrate back to the Mekong. When mapping out their fishing grounds, some participants said they never used one consistent fishing ground but instead followed the fish movement, although there were also complex territorial claims to certain areas in some villages. One fisherman noted that when they could not find fish nearby, “we just looked around and found other places” (Men’s PMAP, Don Sdaeng), signalling a casual and flexible orientation to water, flows, and fishes. The ability to orient to and move with floods and fish migrations, and to anchor to

trees and forests for safety, is crucial for maintaining knowledge and livelihoods. Indeed, even fishing tools and methods change with the seasons.

### ***Disoriented Flows, Fishes, and Forests***

Changing flood patterns over the last decade have considerably impacted fish populations, with a resulting impact on floating villages. Participants noted that seasonal flooding predictability is critical for fish to spawn. When the floods are smaller and less predictable due to climate change, hydropower development, irrigation schemes, and other interventions, there are fewer fish. One participant complained, “Recently, the water level is not predictable like before, so we can’t catch a lot of fish as we used to” (Kampong Prak, 19 January 2023). A fisherwoman exclaimed:

This year, I spent four/five days fishing using a lot of equipment, but I can catch only two/three kg of fish. Four or five years ago, I got around 50 kg in three days. (Don Sdeung, 16 January 2023)

Seasonal floods and recessions through flooded forests also enable fish migrations in the TSL. Therefore, with lower flood and uncertain amounts of water, the fish catch becomes more meagre and unpredictable. A fisher said, “here we depend on the fish that migrate from the Mekong to the TSL during the water ascending season and fish that migrate from the TSL back to the Mekong during water recession time” (Seh Slab, 26 June 2022). Participants discussed how fish migration flows, life cycles, and habitats are shifting due to the reduction of flood pulse, loss of flooded forest breeding grounds, changing weather patterns, illegal fishing, and chemical pollution from intensive agriculture. None of the fishers pointed to dams as a driver of fish disorientations, although they do, indeed, affect fish migrations and flow (Ziv et al. 2012). Interviewees described the reduction of fish in the lake as a disorientation of fish migrations, noting that “there is no more forest flooded, so the fish cannot find their home to stay, so most of them just run away” (Men’s PMAP, Don Sdaung). People registered these increasingly unpredictable seasonal changes as something that was interconnected with multiple socio-ecological processes; as one participant said, “It is the season fish lay their eggs, but it seems like nowadays, everything has changed. Some fish cannot lay their eggs” (Kampong Prack PMAP).

Because seasonal flood pulse has regulated agricultural practices for centuries, rapid disorientations in water flow, volume, and directionality directly impact communities’ abilities to cultivate rice and other key foods. Inhabitants of floating villages engage in seasonal agriculture on land that is underwater half the year, when it is nourished by the flow of the water and nutrients, and thus provides fertile soil for seasonal rice and vegetable production during the dry season. However, participants discussed how the rice varieties they use for flooded rice are no longer suitable due to the disoriented wetland hydrology. Villagers in Seh Slab confirmed that in the past they used to grow floating rice—a long-stem variety adapted to flood pulse—beginning in the early rainy season and before the flood (May–June). They would establish floating paddy fields behind flooded forests, which shielded the fields from excessive waves and invasive floating water

hyacinths. Minimal fertiliser was needed because the soil was nourished annually by the floods. However, yields are deteriorating due to disoriented floods and flow, and now the practice has all but stopped.

The planting of “recession rice”, on the other hand, has intensified and expanded. This is grown at the end of the flood season (November–December), on paddy fields located between the lakeshore and the flooded forest. Villagers seed rice after the flood, and when they need water, they extract it from the lake. In Seh Slab, for example, some people cultivate patches of paddy fields during the dry season. Their rice fields are within a hundred metres of the lake’s banks, which allowed them to extract water from the lake when needed. Villagers in Kampong Preah and Seh Slab confirmed that the area for recession rice has increased since 2015–2016, a year when there were major droughts causing fires. The head of Seh Slab said some parts of the newly extended fields were already burned by bushfire in 2015–2016. Signalling the disorientations of both lived and envisioned relations between the community and the water, the Seh Slab village head noted, “that was the period when we realised that we were going to be relocated” (Seh Slab, 26 June 2022).

With the disorienting effects of rapidly declining fish catch, some villagers are intensifying their crops, planting more varieties, more often. With newly cleared land, villagers also cultivate “industrial” rice varieties, which grow in the dry season within a short, three-month period of time, and yield up to six tons per hectare. Instead of orienting with dynamic seasonal flood pulse, the modern varieties require reliance upon intensive irrigation from a TLS tributary, Stung Boribo. This practice exposes villagers to high risk of crop failure because irrigated water may be inaccessible or highly contested. Villagers grew water recession rice species further away from the lakeshore during the dry season which needs a great amount of irrigated water. In Seh Slab, for example, villagers were concerned that if they extensively cultivate land, they will need water from nearby irrigation. This could lead to water conflicts with villagers upstream of the Boribo catchment who are already using irrigation. Villagers exclaimed that the expansion of dry-season rice farming downstream directly increased the demand for water from irrigation reservoirs from the upstream communities, who already faced water shortages due to dry-season rice intensification over the previous five years.

Apart from rice, villagers grow other seasonal crops such as corn, chilies, pumpkins, and beans along the lakeshore and on islands that seasonally flood. Traditionally, seasonal cropping relied solely on the floods to maintain soil fertility. Depending on the topography of the island and the level of the flood, these islands dry up from five to seven months every year. To prepare land after the floods, farmers cleared and burned weeds before the floods for the following year’s cultivation. A fisher-farmer we interviewed in June 2022 while he was burning weed said he must clear the weeds before the flood arrives. If he waited until the flood ended it would be too late. The soil would be too moist to burn the weeds, and some weeds could survive the flood waters, so they must be burned before the flood arrived. After the land floods, the land is ready to plant. Some people increase their soil fertility in addition to deposit sedimentation by extracting the fertilisers from trapping the floating water hyacinth. After floods, the water hyacinths decay and provide additional fertiliser. These practices increase

the cost of cultivation because trapping water hyacinth requires strings, poles, boats, and labour. With this practice, a farmer confirmed they can cultivate crops such as corn, beans, or pumpkin twice per dry season.

All the conditions described above illuminate an interdependence cultivated between communities, seasonal flood pulses, and the wetlands and flooded forests they have mobilised for generations for food and safety. The materiality of water creates a floodplain system through the cycle of seasonal and reliable flooding and fish migration from the upstreams of the Mekong and TSL tributaries. Unpredictable flood pulse, direction, and volume are affecting the soils and forests that sustained vitality in relation to seasonal flood pulse. And as a consequence, the fish are not only declining, but they are also themselves disoriented in their migrations and spawning habits. Being disoriented from the seasonal flood cycle of water and fish migrations, people have lost their sense of place because predictability in flood pulse is no longer reliable and livelihoods are, by extension, unstable. Through each experience, communities accumulate disorientations in their agricultural and fishing practices.

### ***Disorientations with(out) the Flood***

Because the materiality of water facilitates movement, the state weaponised the flood pulse to minimise the friction and costs of village relocation to fixed land during the peak of the flood in 2018. Instead of forcing villagers to move their houses off the water, the authorities relocated them on the fixed ground, which prevented them from floating to the lakeshore, where they lived and fished during the dry season. This disoriented their relationship with the floods and fish migrations. Seh Slab villagers explained that in October, when the annual flood reached its peak, they were preparing to float their houses back down the lake, but the government did not allow villagers to descend with the water and ordered them to stay and settle permanently where they were. The village head recalled, “The provincial officials said we must stay here and [they will not] back down” (26 June 2022). Some people in a nearby area described armed officials with barges:

The authorities came here, there were a lot of them, two or three boatfuls. I don't know if it was the police or the army or what. But they had guns. And they said to us we had to move. If we didn't move, they pushed us! (Ethnic Vietnamese woman, 50s, citizenship status undetermined, Kampong Chhnang, 17 January 2020)

For the Seh Slab village head, this was reminiscent of the violence with which people were forced to leave their homes in the 1970s. He noted, “...then we were forced to leave [our homes], but now we have to move our house [to land]”. The materiality of water in this sense comprises a key tool in the state's strategy to remove them from the water.

In 2018, the flood waters were higher than average, and villagers estimated that it was the second highest water level in a decade. The boundaries of flooded forests are defined by the average annual flood pulse, so when floods are higher than normal, the floodwaters reach beyond the flooded forest into more open

land. Seh Slab village was therefore relocated slightly above the boundary of flooded forest. Chhnok Tru and Kampong Preah villages were stationed further down the flood line with their current locations now in the middle of flooded forest. The Kampong Preah village head recalled that before the resettlement:

...there were a few houses here, but mostly forest. Back then during the flood season, we settled along the canals near the pagoda. Now we can't move, no matter how big the water is, we stay here ... Where you sit right now, the water would be 3.5 metres deep. (Kampong Preah, 29 June 2022)

After forced settlement, communities remain within the floodplains but are unable to flexibly orient to the increasingly unpredictable flood pulse. This has led to greater exposure to “natural” disasters and has increased living costs. Seh Slab village is located above the average annual flood, within the fringe of flooded forest where vegetation is degraded, and further away from fishing grounds during the dry season. A Seh Slab villager explained challenges thus:

The houses are up here; but we fish down there. All the fishing gear is down there. There are no places to store fishing equipment down there properly. If you are not careful, a thief will steal it. When we lived down there [village location during dry season], our fishing equipment was in the house. For those who don't have a vehicle, they pay for tuk tuk [tricycle taxi], each return trip to fish is 10,000 Riel [2.5 USD] per person. If three people are going fishing, it costs 30,000 Riel [7.5 USD] per day. Half of the households in Seh Slab don't have a vehicle to commute on land. It is difficult in the dry season; in the wet season the water is right [near the house]. For those who do not have money, they walk. Some people borrow money from others to buy motorcycles. (Seh Slab, 27 June 2022)

As other interviewees and focus group discussions confirmed, families have taken out loans to fund their transport and food costs in new sites, which increases their sense of precarity. Furthermore, because the flood pulse has become uncertain and infrequent, villagers report dangerous exposure to fires and storms. Due to the irregular floods and increasing frequency of droughts, the forest and soil are dry, which can trigger fires. Villagers are now exposed to storms because they are “stuck” in an open space without large trees to protect them, and their houses are not strong enough to withstand the more frequent and violent storms that lash the area. While some people have leveraged loans and built new houses from stronger materials, many still live in their “floating” houses, either fixed to land or up on stilts. And, while floating houses are designed to withstand conditions on the water, they are not built to withstand storms on open land, and many houses have fallen into disrepair, been damaged by the wind, or burned down.

Kampong Preah and Chhnok Tru are faced with different challenges. Villagers were located further into the floodplain, in the middle of flooded forest, and closer to the lake (Figure 3). Therefore, unlike Seh Slab, they are highly exposed to disoriented floods. The Kampong Preah village head recalled:

Since 2018, flood levels have gradually declined. The flood periods were also short. It was only a one-month flood back then. In our language, we use two words to describe floods: Big Water (*Teuk Thum*), and small water (*Teuk Touch*). *Teuk Thum* is



**Figure 3:** Fixed locations of Chhnok Tru—background image taken in December 2022. Source: map created by the authors using imagery from Google Earth Pro.

when the water exceeds all the forest. Since we relocated, we have not witnessed *Teuk Thum* yet. (Kampong Preah, 29 June 2022)

The uncertainty of the floods in their fixed location adds to the villagers' accumulating disorientations. In early 2022, for example, Chhnok Tru and Kampong Preah experienced an unexpected flood that exceeded the forest and flooded both villages, leaving houses under water (Figure 4). Then, the typical flood pulse of June–July did not happen, and by late June, villagers were concerned that there would not be any *Teuk Thum* this year because the flood had yet to reach the edge of Kampong Preah Temple hill. Villagers observed that if the water did not reach the flooded forest near the hill's edge, *Teuk Thum* was not expected to happen. One person lamented, "It is now a few days to [the end of] July but we have not seen water rising yet. I don't know what is going to happen" (29 June 2022). For villagers who have long oriented to flood pulse, the flood is associated with fish abundance or scarcity. The lack of flood signalled a very concerning prospect of little food or income. When we returned in October 2022, we found that the flood had arrived late, but with violent storms; many houses in Chhnok Tru and Kampong Preah were damaged by the flood while a few managed to stay afloat (Figure 4).

The disorienting effects of forced settlement are exacerbated by state planning failures. The lack of support for those evicted is not unusual in the country. Cambodia has few social safeguards for vulnerable people, and political decision making occurs largely through patronage networks controlled by the ruling party and



**Figure 4:** Top left—flooded houses in Chhnok Tru (6 October 2022); top right—houses on fire in Chhnok Tru (13 November 2022); bottom left—Theory’s house in Kampong Preah (29 June 2022); bottom right—houses built differently to prepare for flood in Chhnok Tru (25 June 2022). Sources: top left and top right by Chhnok Tru villagers; bottom left and bottom right by Sopheak Chann.

its allies. In this context, resettlement schemes are plagued by problems including insufficient and delayed compensation, intimidation by government officials, and inadequate conditions of relocation sites, leading to further impoverishment of those relocated (Connell 2015). These impacts are further exacerbated by state settlement and infrastructure planning that disregards flood effects and is fundamentally incompatible with seasonal fishing activities. Instead of arranging the houses floating along the flood lines and tributaries, residents were located along newly built roads that cut through the floodplains (see Figure 3). During the Chhnok Tru PMAP workshop, participants complained that new roads, built without drainage, block the flow of floods and create uneven impacts in different parts of the same village. When roads are damaged by floods, they are difficult to reach by vehicles, while new government-built canals are too shallow to pass through on boats. Moreover, local private businesses supplied grid electricity, which can trigger fires when flooded. During the 2022 floods, at least three houses in Chhnok Tru burned due to electrical fires (Figure 4).

Preparing for unpredictable floods while being fixed on land is not only physically and psychologically disorienting; it is also costly. Before relocation, villagers used materials like bamboo, cement jars, plastic containers, and wooden boats to stabilise and float their houses on the floods. Most of these materials require water to maintain their durability. However, when fixing their houses within the floodplains, the villagers either try to build a tall, strong house above the flood that stands on concrete or wooden pillars or keep their floating materials and try to float with the water while tied in place. Either choice is costly and risky. Theary, 36, a mother of three children in Kampong Preah, said her family can't afford either option. Explaining how much it costs to maintain her  $4.5 \times 9$ -metre wooden house:

When living on the water, the house needed nine jars and 100 bamboo poles. We spent two sacks of cement every year to fix the jars. Without the bamboo, the house would capsize when there was strong wind. Each bamboo costs Riel 10,000, which lasts for many years. On land, after a few months in the sun, if we don't put them in the water, the cement jars fall apart and the bamboo rots. When we moved up here, we spent more than 400,000 [100 USD] to replace the wood and it only lasted for one year. We use up to 15 wooden pools that need to be replaced every year. I must replace the poles every year, but this year I don't have the money yet and they are all rotted. Not having the flood for a few years now, the jars would not be able to stand water if the flood arrived. I don't know what to do because we cannot earn money to fix them. (Kampong Preah, 29 June 2022)<sup>4</sup>

## Conclusion

For generations, diverse communities have lived with-on Cambodia's Tonle Sap Lake, pursuing their water-dwelling lifeways and livelihoods in a fluid and dynamic relationship with the lake, its seasonal flows, and its migratory ecologies. In recent years, however, disoriented flows, fish migrations, and forests, and related struggles with(out) the floods are dramatically disrupting their water-oriented lifeways of relating to, and living with-on Tonle Sap Lake. This devastating transformation simply cannot be fully understood through event-, land-, or human-centred lenses. (Dis)orientations, we argue, provides a frame that highlights the materiality and agency of water, fishes, forests, and communities who move and live in dynamic interrelation.

Extending theoretical critiques of displacement as limited and constraining due its land-centric and event-focused assumptions of dwelling and livelihoods, we advance the fluid concept of disorientations to more accurately capture and represent the experiences and perceptions of floating villagers, as their relationships to the vital, pulsing waterscape are ruptured over time, and they are forced onto non-arable and precarious plots of land. Using empirical evidence drawn from participatory mapping exercises, interviews, and workshops among communities, we capture a range of experiences and perceptions around disorientations. These reveal the cascade of disarticulations that occur when the water flow is stopped or altered, when fish no longer migrate in predictable ways, when flooded forests

are no longer vital or accessible as seasonal protection, when livelihoods derived from living with-on the water are insufficient, when people move (or are forcibly removed) to fixed plots of land, and when the state enforces an infrastructural vision that is incompatible with sustaining fishing livelihoods and community life.

We argue that the concept of disorientations more accurately reflects the lived experience of people undergoing forced water-to-land relocation from the TSL and better illuminates the violences and traumas that attend attempts to enclose, fix-in-place, and govern both mobile communities and fluid ecosystems. When relations between water and communities rupture, attention to such disorientations invites a richer understanding of attendant shifts in the geographical, social, and mental processes by which groups and individuals understand and direct social life. In its temporal dimension, our conceptualisation resonates with geographical literatures on the “slow violence” of ecological change and development-induced dislocation, and on cumulative socio-natural displacements, since it focuses on the process or state of disorientations experienced by the TSL’s lake-dwelling populations, rather than any single moment or event of “displacement”.

Finally, by foregrounding the materiality of water and its importance to the lives and livelihoods of communities who live with-on the Tonle Sap Lake, this paper enriches our understanding of involuntary relocation and socio-ecological change, laying the foundations for an emergent “political ecology of disorientations”. Such an approach is especially urgent, we argue, to the study not just of communities facing eviction from the TSL, but to the tens of millions of people who depend on the Mekong River system, and whose lives and livelihoods are oriented in relation to its unique system of seasonal flows (not only that of water, but also of nutrients, sediments, soils, fish migrations, and fishing practices). In the face of upstream dam construction, climate change and associated reduced glacial melt from the Himalayas, collapsing aquatic ecosystems, exclusionary conservation initiatives, and predatory state-led “development” schemes that disrupt these flows, this broader population is acutely vulnerable to the kinds of disruptions experienced by our study communities. The concept of disorientations, we argue, is vital to understanding the experiences of those who live with-on the rivers and lakes of the Lower Mekong River Basin, and to contesting the ecological, and political, and economic violences to which they are subjected.

## Acknowledgements

Funding support for this research is provided by grants from Michigan State University’s LuceSEA Mekong Culture WELL grant, MSU’s Center for Asian Studies, MSU’s College of Social Science, MSU’s Visiting International Partners Program, the Mekong NexGen Fellowship, Massey University’s Strategic Research Excellence Fund, Montclair State University, and University of Nevada Reno’s Wonders of the Mekong grant.

Additionally, the team wishes to thank Mekong Culture WELL collaborators Wisa Wisajindawat-Fink, Daniel Ahlquist, Daniel Kramer, Marina Pok, Neak Sopha, Sao Srey Mao, David A. Feingold, Kalyanee Mam, Yadu Pokhrel, Huy Dang, Siddarth Chandra, Pheap Sokha, Say Puthy, and Aaron Koning for insights and assistance in Mean Mao, Solinda Kong, Kalyan Leav, Veasna Pov, and Silang Vey.

## Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## Endnotes

<sup>1</sup> Prepositions reveal preferred cultural relations to place and one another. English prepositions reflect the legacies and limits of particular ideal relations to land, and fail to accommodate water-based lifeways. While one can live “within” a forest or “near” a lake, one cannot live “within” a river. Yet “on the water” does not capture the ways in which Tonle Sap lifeways entwine with the flows of water; floating villages live “with” the water rather than simply “on” it. We therefore propose (dis)orientations as a necessary expansion to describe relationships of being oriented to the flows of water and fish, and to illuminate the disorientations of being moved from a state of being with-on the water, to one of being simply “on” land.

<sup>2</sup> In this article, the dry season refers to the period when there are no floods. The water-body remained within the lake and tributaries, but not in the forests. This dry season is different from the dry season when referring to the monsoon dry season, which starts in May and ends in October.

<sup>3</sup> The transition periods vary from year to year, and villagers confirmed that with the recent changes in floods, and rainfalls, the flooding period became more unpredictable.

<sup>4</sup> This type of concrete jar is commonly used in rural Cambodia to store rainwater. In the floating communities around Tonle Sap, people use the jars to float their houses by turning them upside down and filling them with compressed air. This practice has become more common in recent times as bamboo is depleted and has become more expensive.

## References

- Adamson P T, Rutherford I D, Peel M C and Conlan I A (2009) The hydrology of the Mekong River. In I C Campbell (ed) *The Mekong: Biophysical Environment of an International River Basin* (pp 53–76). New York: Academic Press
- Ahmed S (2006). Orientations: Toward a queer phenomenology. *GLQ: A Journal of Lesbian and Gay Studies* 12(4):543–574
- Arias M E, Cochrane T A, Piman T, Kummu M, Caruso B S and Killeen T J (2012) Quantifying changes in flooding and habitats in the Tonle Sap Lake (Cambodia) caused by water infrastructure development and climate change in the Mekong Basin. *Journal of Environmental Management* 112:53–66
- Arrigotia M F (2017) Towards the dis-alienation, democratisation, and humanisation of housing. *City* 21(6):894–898
- Baird I G (2021) Catastrophic and slow violence: Thinking about the impacts of the Xe Pian Xe Namnoy dam in southern Laos. *Journal of Peasant Studies* 48(6):1167–1186
- Baird I G and Barney K (2019) The political ecology of cross-sectoral cumulative impacts: Modern landscapes, large hydropower dams, and industrial tree plantations in Laos and Cambodia. In P Vandergeest and L Schoenberger (eds) *De-centring Land Grabbing: South-east Asia Perspectives on Agrarian-Environmental Transformations* (pp 73–98). New York: Routledge
- Baird I G and Shoemaker B (2007) Unsettling experiences: Internal resettlement and international aid agencies in Laos. *Development and Change* 38(5):865–888
- Baird I G and Thorne M A S (2023) The downstream impacts of dams on the seasonally flooded riverine forests of the Mekong River in northeastern Cambodia. *South East Asia Research* <https://doi.org/10.1080/0967828X.2023.2243584>
- Baker A (2020) Eviction as infrastructure. *City* 24(1/2):143–150
- Bakker K (1999) The politics of hydropower: Developing the Mekong. *Political Geography* 18(2):209–232

- Bakker K (2012) Water: Political, biopolitical, material. *Social Studies of Science* 42(4):616–623
- Bissell D and Gorman-Murray A (2019) Disoriented geographies: Undoing relations, encountering limits. *Transactions of the Institute of British Geographers* 44(4):707–720
- Blake D J and Barney K (2018) Structural injustice, slow violence? The political ecology of a “best practice” hydropower dam in Lao PDR. *Journal of Contemporary Asia* 48(5):808–834
- Blunt A and Dowling R (2006) *Home*. London: Routledge
- Boelens R, Escobar A, Bakker K, Hommes L, Swyngedouw E, Hogenboom B, Huijbens E H, Jackson S, Vos J, Harris L M, Joy K J, de Castro F, Duarte-Abadía B, Tubino de Souza D, Lotz-Sisitka H, Hernández-Mora N, Martínez-Alier J, Roca-Servat D, Perreault T, Sanchis-Ibor C, Suhardiman D, Ulloa A, Wals A, Hoogesteger J, Hidalgo-Bastidas J P, Roa-Avenidaño T, Veldwisch G J, Woodhouse P and Wantzen K M (2023) Riverhood: Political ecologies of socationature commoning and translocal struggles for water justice. *Journal of Peasant Studies* 50(3):1125–1156
- Brickell K, Arrigoitia M F and Vasudevan A (2017) *Geographies of Forced Eviction: Dispossession, Violence, Resistance*. London: Palgrave Macmillan
- Camargo A (2022) Land born of water: Property, stasis, and motion in the floodplains of northern Colombia. *Geoforum* 131:223–231
- Chanveasna R (2017) Floating villages to be relocated. *Khmer Times* 24 March <https://www.khmertimeskh.com/15419/floating-villages-to-be-relocated/> (last accessed 21 December 2023)
- Connell J (2015) Is “good” resettlement policy unimplementable? Learning from advocacy in Cambodia. *Development in Practice* 25(5):655–672
- Cretney R and Nissen S (2023) What is generated through rupture? *Dialogues in Human Geography* 13(2):197–201
- Dang H, Pokhrel Y, Shin S, Stelly J, Ahlquist D and Du Bui D (2022) Hydrologic balance and inundation dynamics of Southeast Asia’s largest inland lake altered by hydropower dams in the Mekong River basin. *Science of the Total Environment* 831 <https://doi.org/10.1016/j.scitotenv.2022.154833>
- Dina T and Sato J (2015) The cost of privatizing the commons: Overlapping property systems in Tonle Sap, Cambodia. *International Journal of the Commons* 9(1):261–280
- Duong L (2006) “Racial Discrimination in the Cambodian Genocide.” Working Paper No. 34, Genocide Studies Program, Yale University <https://gsp.yale.edu/node/283> (last accessed 21 December 2023)
- Feldman S and Geisler C (2012) Land expropriation and displacement in Bangladesh. *Journal of Peasant Studies* 39(3/4):971–993
- Frewer T (2016) Cambodia’s anti-Vietnam obsession. *The Diplomat* 6 September <https://thediplomat.com/2016/09/cambodias-anti-vietnam-obsession/> (last accessed 21 December 2023)
- Gillespie J (2016) Catch 22: Wetlands protection and fishing for survival. *Geographical Research* 54(3):336–347
- Green W N and Baird I G (2020) The contentious politics of hydropower dam impact assessments in the Mekong River Basin. *Political Geography* 83 <https://doi.org/10.1016/j.polgeo.2020.102272>
- Grundy-Warr C and Lin S (2020) The unseen transboundary commons that matter for Cambodia’s inland fisheries: Changing sediment flows in the Mekong hydrological flood pulse. *Asia Pacific Viewpoint* 61(2):249–265
- Grundy-Warr C and Sithirith M (2015) Threats and challenges to the “floating lives” of the Tonle Sap. In A C Tidwell and B S Zellen (eds) *Land, Indigenous Peoples, and Conflict* (pp 127–148). London: Routledge
- Halls A S and Horte K G (2021) Flooding is a key driver of the Tonle Sap dai fishery in Cambodia. *Scientific Reports* 11 <https://doi.org/10.1038/s41598-021-81248-x>
- Harbin A (2016) *Disorientation and Moral Life*. Oxford: Oxford University Press
- Hook J, Novak S and Johnston R (2003) *Social Atlas of the Lower Mekong Basin*. Phnom Penh: Mekong River Commission

- Ishikawa S, Hori M and Kurokura H (2017) A strategy for fisheries resources management in Southeast Asia: A case study of an inland fishery around Tonle Sap Lake in Cambodia. *Aqua-BioScience Monographs* 10(2):23–40
- Kelley L C, Shattuck A and Thomas K A (2022) Cumulative socio-natural displacements: Reconceptualizing climate displacements in a world already on the move. *Annals of the American Association of Geographers* 112(3):664–673
- Keskinen M, Someth P, Salmivaara A and Kummu M (2015) Water-energy-food nexus in a transboundary river basin: The case of Tonle Sap Lake, Mekong River Basin. *Water* 7 (10):5416–5436
- Kuntheart M (2019) Ministry announces end of fishing season. *Khmer Times* 13 May <https://www.khmertimeskh.com/603211/ministry-announces-end-of-fishing-season/> (last accessed 8 January 2024)
- Lipes J (2019) More than two-thirds of ethnic Vietnamese evicted from Cambodia's Tonle Sap "floating village". *Radio Free Asia* 4 January <https://www.rfa.org/english/news/cambodia/eviction-01042019150151.html> (last accessed 21 December 2023)
- Mahanty S, Chann S and Suong S (2023a) The emotional life of rupture at Cambodia's Lower Sesan 2 hydropower dam. *Environment Planning E: Nature Space* <https://doi.org/10.1177/25148486231162087>
- Mahanty S, Milne S, Barney K, Dressler W, Hirsch P and To P X (2023b) Rupture: Towards a critical, emplaced, and experiential view of nature-society crisis. *Dialogues in Human Geography* 13(2):177–196
- Malkki L (1992) National geographic: The rooting of peoples and the territorialization of national identity among scholars and refugees. *Cultural Anthropology* 7(1):24–44
- Manorom K, Baird I G and Shoemaker B (2017) The World Bank, hydropower-based poverty alleviation, and indigenous peoples: On-the-ground realities in the Xe Bang Fai river basin of Laos. *Forum for Development Studies* 44(2):275–300
- Martin N and Rosello M (2016) Disorientation: An introduction. *Culture, Theory and Critique* 57(1):1–16
- Meynell P J (2017) Wetlands of the Mekong River basin, an overview. In C M Finlayson, G R Milton, R C Prentice and N C Davidson (eds) *The Wetland Book* ([https://doi.org/10.1007/978-94-007-6173-5\\_244-2](https://doi.org/10.1007/978-94-007-6173-5_244-2)). Dordrecht: Springer
- Miller F, Ha T T P, Da H V, Thuy N T T and Ngo B H (2022). Double displacement: Interactions between resettlement, environmental change, and migration. *Geoforum* 129:13–27
- Miller M A, Alfajri, Astuti R, Grundy-Warr C, Middleton C, Tan Z D and Taylor D M (2021) Hydrosocial rupture: Causes and consequences for transboundary governance. *Ecology and Society* 26(3) <https://doi.org/10.5751/ES-12545-260321>
- Ng W X and Park E (2021) Shrinking Tonlé Sap and the recent intensification of sand mining in the Cambodian Mekong River. *Science of the Total Environment* 777 <https://doi.org/10.1016/j.scitotenv.2021.146180>
- Nixon R (2011) *Slow Violence and the Environmentalism of the Poor*. Cambridge: Harvard University Press
- Parsons L and Lawreniuk S (2018) Seeing like the stateless: Documentation and the mobilities of liminal citizenship in Cambodia. *Political Geography* 62:1–11
- Pokhrel Y, Shin S, Lin Z, Yamazaki D and Qi J (2018) Potential disruption of flood dynamics in the Lower Mekong River Basin due to upstream flow regulation. *Scientific Reports* 8 <https://doi.org/10.1038/s41598-018-35823-4>
- Roth R (2009) The challenges of mapping complex indigenous spatiality: From abstract space to dwelling space. *Cultural Geographies* 16(2):207–227
- Sabo J L, Ruhi A, Holtgrieve G W, Elliott V, Arias M E, Ngor P B, Räsänen T A and Nam S (2017) Designing river flows to improve food security futures in the Lower Mekong Basin. *Science* 358(6368) <https://doi.org/10.1126/science.aao1053>
- Saroeun B (2001) Floating villagers protest eviction order. *The Phnom Penh Post* 5 January <https://phnompenhpost.com/national/floating-villagers-protest-eviction-order> (last accessed 22 December 2023)
- Schmidt di Friedberg M (2018) *Geographies of Disorientation*. London: Routledge

- Seiff A (2020) Did Cambodia's most famous river stop changing course? *Vice* 16 October <https://www.vice.com/en/article/dy8gv7/did-cambodias-most-famous-river-stop-changing-course> (last accessed 22 December 2023)
- Smith R (2021) Relocating floating communities in Cambodia: Kampong Chhnang. *Human Rights Quarterly* 43(2):290–312
- Sneddon C (2007) Nature's materiality and the circuitous paths of accumulation: Disposition of freshwater fisheries in Cambodia. *Antipode* 39(1):167–193
- Sok S (2014) Limited state and strong social forces: Fishing lot management in Cambodia. *Journal of Southeast Asian Studies* 45(2):174–193
- Sokhean B (2015) In Vietnamese floating villages, a precarious life. *The Cambodia Daily* 12 October <https://english.cambodiadaily.com/editors-choice/in-vietnamese-floating-villages-a-precarious-life-97111/> (last accessed 22 December 2023)
- Soukhaphon A, Baird I G and Hogan Z S (2021) The impacts of hydropower dams in the Mekong River Basin: A review. *Water* 13(3) <https://doi.org/10.3390/w13030265>
- Sperfeldt C (2020) Minorities and statelessness: Social exclusion and citizenship in Cambodia. *International Journal on Minority and Group Rights* 27(1):94–120
- Stimson (2022) “Mekong Dam Monitor.” The Stimson Center <https://www.stimson.org/project/mekong-dam-monitor/> (last accessed 22 February 2022)
- Turner M D (2016) Political ecology II: Engagements with ecology. *Progress in Human Geography* 40(3):413–421
- UNESCO (2019) “Tonle Sap Biosphere Reserve, Cambodia.” United Nations Educational, Scientific and Cultural Organization <https://en.unesco.org/biosphere/aspac/tonle-sap> (last accessed 22 December 2023)
- Vida T (2018) River relocation request rejected. *Khmer Times* 19 November <https://www.khmertimeskh.com/551914/river-relocation-request-rejected-2/> (last accessed 20 December 2023)
- Walker P A (2005) Political ecology: Where is the ecology? *Progress in Human Geography* 29(1):73–82
- Wylie J (2021) Dislocation: Disorientation: Disappearance: Distance. In D Bissell, M Rose and P Harrison (eds) *Negative Geographies: Exploring the Politics of Limits* (pp 189–205). Lincoln: University of Nebraska Press
- Yong M L (2020) Reclaiming community spaces in the Mekong River transboundary commons: Shifting territorialities in Chiang Khong, Thailand. *Asia Pacific Viewpoint* 61(2):203–218
- Ziv G, Baran E, Nam S, Rodríguez-Iturbe I and Levin S A (2012) Trading-off fish biodiversity, food security, and hydropower in the Mekong River Basin. *Proceedings of the National Academy of Sciences* 109(15):5609–5614