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# On the production of climate-related loss: land dispossession, indebtedness, and climate change in northeastern Cambodia

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**ABSTRACT**

This article examines the production of climate-related loss, specifically loss of access to land, among Indigenous and ethnic minority farming communities in northeastern Cambodia. We analyse how rapid socio-environmental and political-economic changes are eroding smallholder farmers' capacities to cope with climate impacts and can lead to what we call climate-related loss. We show how climate change compounds and reinforces longstanding patterns of marginalisation and environmental degradation that underpin land dispossession. We argue that interpreting climate-related loss as a product of contemporary *and* historical socio-environmental transformations of the land is necessary for advancing more situated and differentiated understandings of climate justice.

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Climate change; loss and damage; microfinance debt; land dispossession; swidden farming; Cambodia

## 1. Introduction

Narratives of destruction, abandonment, and loss are becoming increasingly salient in research on climate change in rural farming societies, especially in the Global South. Social groups whose livelihoods and lifeways depend more closely on the land, such as smallholders, Indigenous Peoples, and ethnic minorities, are considered particularly likely to suffer a greater burden of climate-related loss (Pearson, Jackson, and McNamara 2021). There is already growing evidence that widespread climate impacts compound injustices wrought by historical and current processes of extractive and industrial development that affect Indigenous Peoples' lands, rights, and lifeways in various regions (Reyes-García et al. 2024; Scheidel et al. 2023). While land has gained attention in climate policy debates on mitigation and adaptation, there has been limited engagement with loss of access to land as a form of climate-related loss in (non-coastal) rural-farming communities.

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In global climate governance, climate-related losses and the injustices they engender have given rise to the Loss and Damage policy framework.[1] In 2022, thirty years after the first proposal appeared in the international negotiations on climate change, the Fund for responding to Loss and Damage (FRLD) was established to provide financial assistance to those who are 'most vulnerable' and affected by climate change and related losses and damages (UNEP 2022; Warner and Weisberg 2023). Within Loss and Damage policy discussions, climate-related losses and damages have mainly been conceptualised as what occurs when adaptation to climate change does not happen or fails, and through distinct categories such as economic/non-economic or tangible/intangible (Chiba et al. 2018; Mechler et al. 2019; van der Geest and Warner 2015). These can range from lost crops and homes due to extreme weather events to the disappearance of entire territories, cultural practices, and ways of life (IPCC 2022). However, beyond archetypal cases of climate-related loss, such as 1-in-100-year extreme weather events and loss of territories due to sea-level rise, cases and localities where the influence of climate change is challenging to separate from other forms of socio-environmental change tend to remain on the margins.

Loss and Damage policy is increasingly perceived as a pathway to climate justice for harm affecting Indigenous and ethnic minority communities and their lands (Correia 2024; Land Portal 2024), yet scholars caution that current scientific framings often overlook the deeper social and political-economic conditions that make agrarian-rural contexts susceptible to climate-related loss in the first place (Ribot 2022). In a recent editorial, Borras et al. (2022) argue that any reflections on addressing climate change 'must employ a more expansive, historically informed analysis that situates "climate" within a wider set of environmental struggles in agrarian settings' (5). This includes understanding how climate change intertwines with the effects of capitalist agriculture on land conditions and relations, the distribution of and access to resources, and unequal power relations, to produce and exacerbate vulnerabilities to socio-environmental change and, thereby, the potential for loss to occur (Scoones et al. 2023). It also involves exposing how vulnerability becomes perpetuated as powerful institutions capitalise on climate change by 'appropriating the cause of the vulnerable, depoliticising the causes of vulnerability, and promoting innovations in finance and markets as solutions' (Barnett 2020, 1). In sum, understanding what climate-related loss and relatedly justice mean for rural-agrarian communities requires interrogating the multiple drivers and legacies of social and economic marginalisation and discrimination that are reinforced through broader processes and narratives of development, and how they reconfigure land relations in a changing climate.

In northeastern Cambodia, the layers of loss resulting from socio-environmental change have been widely experienced by the region's inhabitants. Over the past two decades, these transformations have occurred due to development interventions (e.g. economic land concessions (ELCs), dam constructions, and more recently, easy access to microfinance), land policies, and rapid integration into the market economy through the cultivation of globally demanded cash crops such as cashews and cassava. One can

[1]Loss and Damage (capitalized letters) or L&D refers to the term and political debate in global policy processes, whereas scholarship or research on 'loss and damage' (lowercase letters) refers to the body of knowledge on the losses and damages or harms to individuals, societies, or environment resulting from climate-related impacts. (IPCC 2022) In this paper, we refer to climate-related loss as encompassing both losses and damages.

easily observe the transformation of the biophysical environment, as the dense forest with patches of swidden field here and there, as described to us by village elders, is being replaced by mainly cashew and cassava fields (see Bourdier 2006; Matras-Troubetzkoy 1983; Padwe 2020; White 1996). The effects of deforestation, ELCs-induced land dispossession, rising levels of microfinance debt, and climate change – increasingly felt in the region through more extreme weather, in particular increasing temperatures and erratic rainfall – intersect and affect relations of production. For many of the communities, which mainly belong to Cambodia's Indigenous and ethnic minority groups, the land is not simply a productive asset; it embodies broader relations of guardianship and spirituality and can act as a technology of memory (Bourdier 2006; Leemann 2021; Padwe 2020; Scheer 2017). Thus, losing land means a possibility of losing collective memories and historical roots. There is, however, limited research on how climate change affects their experiences and what it means or implies for these communities' livelihoods, lands, and histories.

In this article, we examine the production of climate-related loss as loss of access to land, focusing on the intersecting processes and lived experiences of climate impacts, indebtedness, and land dispossession in northeast Cambodia. We explore how climate impacts intertwine with land and livelihood insecurity, shaped by the reconfiguration of land relations induced by private land tenure, deforestation, the expansion of the cash economy, and widened access to formal credit, focusing on people's interpretation of socioenvironmental change. This article is a collaborative effort and is based on research data collected by the two authors in different field sites across the provinces of Ratanakiri and Mondulkiri in northeast Cambodia.

Our argument is twofold. First, climatic conditions – shaped by climate change – accelerate loss of access to land by compounding and reinforcing longstanding patterns of marginalisation and environmental degradation that underpin land dispossession in northeast Cambodia. Second, we argue that the pursuit of climate justice must begin with *historicizing* climate-related loss – understanding it as an outcome of historical transformations of the land, rooted in colonial legacies, marginalisation, and capitalist modes of production that have reshaped the landscape and deepened agrarian communities' vulnerability to climate change.

The following sections outline our theoretical framework, introduce the research context, and describe our multi-method approach. We then present our analysis of climate-related loss produced through intertwined land and livelihood insecurity dynamics, climate impacts and debt-driven land dispossession. We conclude with the broader implications of the findings for research and policy.

## 2. Theoretical framework: historicising climate-related loss

We understand historicising as 'weaving' climate-related loss 'as an issue and as a context into the fabric of broader intellectual, political, and social histories' (Sörlin and Lane 2018). This means focusing not on the history of the word or concept, but on the relationships it describes and how these have evolved (Hulme 2009). That is, interpreting climate-related loss as a product of transformations of the land, arising from historical and contemporary drivers of socioecological change that manifest in and through the landscape. This includes examining how loss is produced materially and discursively in a changing

climate through interventions, policies, and various agendas and how these have conditioned and continue to condition life on land, the land itself and, thereby, vulnerability. It also involves considering the distinct spatial and temporal dimensions of climate change as its effects intersect with relations of production and land relations, and how this, in turn, can exacerbate rapid, intense, and disruptive episodes where landscapes, social worlds, and identities become altered and potentially transformed.

In climate change research, loss and damage has generated proposals of a science and sociology of loss (Barnett et al. 2016; Elliott 2018). Climate-related loss is broadly conceptualised as arising when climate change and variability put at risk attributes, objects, and phenomena that people value, which may be incommensurable (Barnett et al. 2016; Tschakert et al. 2017). More broadly, loss is associated with disruptive episodes that may involve displacement from, destruction, or disappearance of valued landscapes, ecosystems, places, and ways of life (A. Thomas and Benjamin 2020; McNamara, Westoby, and Chandra 2021; Tschakert et al. 2019; van der Geest et al. 2019). To make sense of the many facets of climate-related loss, scholars typically examine the experiences of communities affected by or at risk from climate change impacts and how various actors understand and ascribe meaning to these phenomena (Tschakert et al. 2017; 2019). Studies of disruptive and adverse socioenvironmental shifts and events affecting relations to valued landscapes and resources often focus on the individual through notions of grief, distress, and trauma, as well as the role of self, place, identity, values, and relations in shaping diverse experiences of climate-related loss (Ayeb-Karlsson, Chandra, and McNamara 2023; Azfa et al. 2020; Marshall et al. 2019; McNamara, Westoby, and Chandra 2021; Tschakert, Tutu, and Alcaro 2013). These have given rise to concepts such as ecological grief and solastalgia (Albrecht et al. 2007; Head 2016; Marshall et al. 2019). Many of these concepts, however, centre on the self and emotional responses to specific forms of socioenvironmental change and are thus not necessarily applicable across socio-economic and geographical contexts. Recent contributions have engaged more deeply into the social construction of climate-related loss as a matter of knowledge, politics, and practice (Elliott 2018). Nevertheless, theorisations of climate-related loss as a distinct phenomenon beyond the realm of global climate governance remain in their infancy.

The conditions that shape people's exposure to and ability to deal with socioenvironmental risks and change – also conceptualised as vulnerability – constitute the historical material context of climate-related loss. Scholars in peasant and agrarian studies have long shown that vulnerability to environmental hazards and climate events (e.g. droughts and famines) in agrarian settings does not just 'fall from the sky' but is instead deeply rooted in historical processes of unequal distribution of and access to resources (Ribot 2013; 2014). Such analyses examine *how* conditions of precarity and (in)security emerge for various social groups in agrarian settings through their embeddedness in a global political-economic system and their limited ability to influence its effects and those that govern them (Blaikie and Brookfield 1987; Sen 1983; Watts 2013). In rural-agrarian settings, the outcomes of colonial and post-conflict legacies, as well as processes of state formation and broader socioeconomic development, most often determine who has access to, owns, and uses the land and natural resources, and for what purpose (Baird 2009; Li 2001; 2010). Vulnerability is thus situated and relational, shaped through power dynamics and social identities, often along the lines of gender, race, wealth, and ethnicity (K. Thomas et al. 2019).

Understanding vulnerability to climate change in rural-agrarian settings requires uncovering the multiple layers of social, economic, and political marginalisation that some social groups are subjected to and how these are discursively and materially produced and experienced. Climate change and the socioecological shifts it engenders intertwine and exacerbate the multidimensional uncertainties related to capitalist agriculture through shifts in land conditions and relations of production (Matthan 2022; Scoones et al. 2023; Taylor 2014). Climate impacts can gradually diminish the ability of smallholder farmers to sustain a living from the land, pushing them into poverty (Chandra et al. 2017). Such processes occur in contexts where cash crop production and the influence of financial institutions and instruments in the rural economy, such as microfinance loans, have expanded rapidly and are reconfiguring debt relations (Green 2020a; 2020b; Padwe 2011). The ability to navigate and cope with climatic changes is often closely tied to opportunities to diversify livelihoods and conditions of access to a larger set of socio-environmental resources (Marty et al. 2022). Though central to many empirical analyses of climate vulnerability and agrarian change, loss remains largely implicit and is often approached as a material phenomenon.

Climate-related loss in rural-agrarian contexts must be situated within people's experiences and locally grounded interpretations of socioecological change and disruptions on and through the land, extending beyond the lens of capitalist relations. Loss directs our attention to how people relate to, value, and ascribe meaning to their environments and how these evolve. The ascribed values can be intrinsic, instrumental, or relational (Arias-Arévalo, Martín-López, and Gómez-Baggethun 2017; Chan et al. 2016). Land is increasingly considered central to research on climate change and socio-environmental change that affect Indigenous Peoples, ethnic minorities, and rural-agrarian communities. In their study of climate impacts among First Nation communities in Canada, Galway, Esquega, and Jones-Casey (2022) found that explicitly centring on land, relationships, and relationality allowed for a deeper understanding of the relationship between climate change and health among Indigenous Peoples communities. Through ethnographic research in northeast Cambodia, Padwe (2020) demonstrates how viewing the landscape as neither inert nor merely a productive asset but instead as animated and potent allows us to understand its role as a technology of memory for communities that depend on it. The socio-ecological shifts that climate change engenders span multiple temporal and spatial scales, from local to global, and are often particularly challenging to discern. Therefore, to understand both the production of climate vulnerability *and* how climate-related loss arises in our research context, in the analysis that follows, we pay particular attention to the diverse ways that people relate to the land, the distinctive role of climate change in accelerating dynamics of socioecological change and their generative potential.

## 3. The northeastern highlands of Cambodia

The northeast region constitutes a part of the highlands of Cambodia and borders Vietnam to the east and Laos to the north. Centred largely in the mountainous plateau, the region has historically been inhabited by most of Cambodia's Indigenous population and ethnic minorities whose languages, religion, and culture are traditionally distinct from the lowland Khmer majority population. In general, the people of Cambodia's uplands have historically enjoyed relative autonomy, with traditional lifestyles based on

swidden agriculture and forest products, with minimal cash in the economic exchange. Life and land were strictly governed by taboos and spirits. For example, the spirits were invoked for agricultural activities, marriages, and funerals, while the spirits had to be appeased when the taboos (e.g. incest, premarital pregnancy) were violated. Since at least the early twentieth century, the land and forests in the northeast of Cambodia have been subjected to various forms of capitalist exploitation, including rubber plantations, timber extractions, large-scale economic land concessions for agribusiness, and dam construction, accompanied by high levels of migration into the region. However, the changes brought to the northeastern landscape and the communities that depended on it accelerated since Cambodia reopened for a free market economy in the early 1990s. Cambodia has one of the highest rates of deforestation in the world (FAO 2020). A report by Oxfam shows that approximately 65% of the land granted as Economic Land Concessions in the country was concentrated in five provinces – Kratie, Pursat, Mondulkiri, Preah Vihar, and Ratanakiri – which are predominantly located in the northeast (Oxfam 2019). A recent study finds that Ratanakiri lost 51.3% of its natural forests between 1989 and 2018 (Nguyen and Lai 2021).

Amidst these socio-environmental transformations, climatic impacts are becoming increasingly prominent. Cambodia's tropical monsoon climate typically consists of two distinct seasons: a wet or rainy season (May to October) and dry season (November to April), with subtropical conditions at higher elevations. The El Niño-Southern Oscillation (ENSO) influences these patterns interannually. At the regional level, evidence suggests that climate change already affects monsoonal seasonal changes observed in temperatures and precipitation patterns across Southeast Asia (Sentian et al. 2022). Cambodia already has some of the highest temperatures worldwide, with an average of approximately 64 days per year when the maximum temperature surpasses 35°C, and it ranks among the twenty countries most impacted by extreme weather events between 1999 and 2018 (Eckstein et al. 2019; The World Bank Group and Asian Development Bank 2021). Recent studies suggest a continuing trend of rising temperatures, more frequent and intense droughts, increasingly unpredictable rainfall patterns with heavier downpours, and shifts in seasonal cycles (Murphy, Irvine, and Sampson 2013; Thilakarathne and Sridhar 2017; Thoeun 2015).

Such changes make it increasingly difficult for farmers to plan the planting and harvesting of their crops. Distinguishing climate projections at the provincial or local level remains a challenge, particularly regarding the micro-climatic effects of deforestation in mountainous areas and localised rainfall patterns. K. Dorkenoo met with the provincial meteorology department in Ratanakiri, which confirmed that data quality and availability were an issue due to a lack of financial resources. Until 2021, only one weather station was available for the entire province. Since then, additional stations have been built in the various districts. Despite being identified as having particularly high levels of vulnerability to climate impacts, provinces in the northeast have typically received limited attention from state or non-governmental programmes focused on climate risks and climate change (IOM 2009).

## 4. Methodology

To construct our analysis, we follow an approach similar to the one used by Beban and Work (2014) by bringing together and drawing from our respective research and

experiences from different sites across northeastern Cambodia. The data are derived from K. Dorkenoo's five months of fieldwork examining experiences of climate-related loss through land relations and P. Res' ten months of fieldwork examining the link between microfinance expansion and land security.

K. Dorkenoo's research activities were conducted across eleven villages in four districts of Ratanakiri province between January and April 2022, with follow-up activities and discussions conducted in April 2023. These activities involved key informant interviews (6), semi-structured interviews (21), and group discussions (8) with 75 participants across four villages. The analysis also draws on descriptive statistical data from a survey questionnaire conducted with 295 households, which includes demographic information, livelihood activities, assets, values associated with land, and climate impacts on livelihoods.[2] For the survey questionnaires and interviews, households were selected randomly. For the group discussions, four villages were selected – one in each district – representing a diversity of socio-economic and geographical conditions across the province. The structure of the exercise conducted during the group discussion was derived from a methodology developed by Bachmann, Providoli, and Harari (2018), where participants assess the extent of change that has occurred in their village over the past two decades and their expectations for that change five to ten years in the future. Participants discussed and agreed on the degree of severity (on a scale of 0–5), frequency, or intensity of change in aspects such as soil fertility, erosion, forest cover, rainfall patterns, and heat. The individual interviews primarily focused on climate impacts on crops and livelihoods, as well as the feelings associated with these. Key informant interviews centred on broader patterns of change in land use, agricultural activities, and climate. Recognising the limited availability of climate data for the region and the importance of integrating diverse knowledges in climate sciences, our analysis draws heavily from people's experiences and knowledge of the local climate (Iwama et al. 2021). The research was conducted in villages predominantly inhabited by indigenous groups, including Brao, Kachok, Kavet, Kreung, and Tampuan, as well as other ethnic minorities, specifically Lao. One of the four villages has a collective form of land tenure known as Indigenous Communal Land Titles (ICLTs), and another was attempting to begin the process of obtaining it.

P. Res' fieldwork was conducted from December 2021 to September 2022 in seven village sites across four Indigenous groups: the Bunong, Jarai, Kreung and Tampuan. P. Res spoke to 281 households in these two northeastern provinces of Cambodia, namely Mondulkiri and Ratanakiri. Of the 281 households, 209 (74%) were women speaking alone, 54 (20%) were men speaking alone, and 18 (6%) spoke as a couple. 5 out of 7 villages have ICTLs. Households were selected using convenience sampling, where P. Res and her research assistants walked around the village, talking to anyone available and willing to be interviewed. P. Res had no prior knowledge of whether households were in debt. The interviews were open-ended and revolved around four themes: demographic information, agricultural activities and customary practices related to farming and hunting, indebtedness (to microfinance institutions (MFIs), banks, and informal lenders), and savings activities. In this way, participants were free to share other

[2]The survey questionnaires have been analysed separately and in greater detail as part of another article by the first author that focuses on a statistical analysis of the relationship between extreme weather events and sense of loss amongst research participants. In the present article, the analysis focuses on qualitative data from interviews, and group discussions on changes in land use and climate.

difficulties or any memories and testimonies if they wished. In addition to interviewing households, P. Res was able to participate in the social and agricultural activities of the villages for the non-Christians and Christians. Those activities included marriages, funerals, burials, conflict mediation, Sunday church services, the celebration of the first harvest, and the celebration of Easter. While staying in the villages, she also witnessed how financial institutions (such as MFIs and banks) interact with Indigenous households. Her participation in agricultural activities and following her informants out into the swidden fields and secondary forest has taught her to see the landscape through the eyes of the swidden farmers.

K. Dorkenoo is not a native Khmer speaker. Before the fieldwork, she learned Khmer for 1.5 years and attained low-intermediate proficiency. Although she could not conduct interviews independently, she could understand a large part of the conversations. Research activities were performed with the support of research assistants who translated from Khmer to English. Data from interviews and key informant discussions were transcribed and translated into English. P. Res is a native Khmer speaker, while the informants Bunong, Kreung and Tampuan speak Austro-Asiatic languages, and the Jarai speak an Austronesian language. Most of the informants, mostly men, had no difficulty communicating with her in Khmer. However, in all cases, several village assistants accompanied her in the field who helped translate from the Indigenous languages (Bunong, Kreung, Tampuan and Jarai) into Khmer on the spot. Various Indigenous languages were translated into Khmer and, later, from Khmer into English.

## 5. The production of land and livelihood insecurity

### *5.1. Patterns of exclusion of swidden farming in the northeast of Cambodia*

This section examines patterns of exclusion of the swidden farming system in the northeast highlands from the early to the late twentieth century. Swidden agriculture, or shifting cultivation, is the art of space-making in which a section of forestland is cleared to co-crop upland rice alongside diverse crops, including leafy vegetables, spices, tubers, and medicinal herbs. The cleared field was cultivated for several years before the land was left to regenerate. As the forest regrew in the abandoned field, the land returned to the spirits' domain. Thus, in this farming system, land has never been an object of possession; however, swidden farmers maintain a perpetual right to land use and management through consultations with spirits via various agrarian rites. During the French colonial period, the colonial administration issued various royal decrees that excluded the swidden farming system, namely the 1903 and 1908 Royal Decrees (Guérin 2008). The 1903 Royal Decree subjected highland farmers to taxes on forest clearing, whereas the 1908 Royal Decree excluded swidden farmers from land ownership claiming processes (ibid.). Despite the issuance of these royal decrees, the majority of highland ethnic minorities (except Stieng swidden farmers) continue to practice swidden agriculture (ibid.). Indeed, during the rubber boom in the 1920s, the Stieng swidden farmers were dispossessed as thousands of hectares of their red soil in Snoul, Pravanh and later Memot were confiscated for rubber plantations (ibid.). From 1940, French power was weakened by the outbreak of the Second World War, and in 1954, France was forced out of Indochina with the signing of the Geneva Accords (Chandler 2008). In 1959 and 1962,

respectively, the provinces of Ratanakiri and Mondulkiri were created and placed under the direct administration of the Cambodian army (Padwe 2020). As part of nation-building, various Khmerisation programmes such as education, Khmer immigration, and the reorganisation of village spaces along roads were used as tools to assimilate and acculturate the highland ethnic minorities into Khmer culture and society (Baird 2008).

In the late 1950s and early 1960s, a large area of the Tampuan and Brao in Ratanakiri was taken over for the state rubber plantation (Baird 2008; Matras-Troubetzkoy 1983). This rubber plantation constricted the affected Brao swidden farmers to farm the same plot of land for longer than usual, from a maximum of four to seven years (Matras-Troubetzkoy 1983). Excessive taxation, land confiscation for the state rubber plantation, corvée labour for the rubber plantation, the arrival of Khmer settlers and abuses by the local police and military have led to incidents of social unrest among the highland northeastern minorities (Baird 2008; Colm 2009; Padwe 2020). This also led some ethnic minorities to join the underground communist movement that had been active in the northeastern forest since the early 1960s (Baird 2008, 2020; Bourdier 2020; Padwe 2020).

From the late 1960s to 1973, northeastern Cambodia became a base for the US bombing campaign that drove more highlanders from their villages into the forest, where they had to live with the Khmer Rouge (Colm 2009). Uk (2011) reported that more than two and a half million tons of bombs were dropped on Cambodia, the Lao People's Democratic Republic, and the Ho Chi Minh Trail. Such bombing destroyed large tracts of forests, notably along the Cambodia–Vietnam border (Westing 1975). Some houses and rice granaries were burnt to the ground, and, in one case, the bomb killed an entire village (Padwe 2020). As the Khmer Rouge took control of the Northeast region in 1973, they began experimenting with their political ideology of the collective life and agriculture, which bore no resemblance to the social organisation and labour arrangements of the swidden farmers. Although the Khmer Rouge leaders (e.g. Pol Pot) idealised the highland societies as 'pure' and 'uncorrupted' by capitalism (Colm 2009), the swidden system was banned during the regime. Instead, swidden farmers were forced to participate in lowland wet rice cultivation (see also Colm 2009). All forms of religious celebration and agrarian rites embedded in swidden agriculture were forbidden. Food consisted of rice mixed with banana stalks or wild tuber roots. Even some of those (e.g. Brao and Tampuan) who were initially involved in the Khmer Rouge communist movement were later purged for being too 'close' to the Vietnamese (Baird 2020; Colm 2009). These examples show that although the northeastern hills were used as a base for the Khmer Rouge, the treatment of the inhabitants was no less cruel once the Khmer Rouge took over the region and the country as a whole.

In late 1978, the Khmer Rouge leadership was pushed to the western part of Cambodia by Vietnamese soldiers led by the Khmer Rouge defectors, including the Brao and Tampuan (Baird 2020). From 1979 to 1989, Cambodia was mainly run by a Vietnam-backed socialist regime – the People's Republic of Kampuchea (PRK). Under the PRK, land and labour were managed by a system of solidarity groups (*krom samaki* in Khmer), in which 10–15 families farmed together on a piece of state-owned agricultural land (Diepart 2015). Again, the system of solidarity groups bore no resemblance to the land tenure and labour arrangements of the swidden farming. From 1979 to the late 1990s, revenue from timber extraction allowed the PRK, the Khmer Rouge, and various armed factions to sustain their operations while prolonging the violent conflicts in

Cambodia (Le Billon 2002; Slocomb 2002). The timber extraction during the political transition and post-war period significantly contributed to the deforestation in Cambodia. To illustrate, between 1975 and 1986, it was estimated that forest cover decreased by 8.6% from 75.8% in 1975 to 67.2% in 1986 (Le Billon 1999). However, the reduction in forest cover was almost twice as much between 1986 and 1997, from 67.2% to 52.9% (ibid.).

### 5.2. From open access to private land tenure

Forest exploitation not only leads to deforestation but also impacts land relations. Examining forest exploitation in the northeast villages in the mid-1990s, Bottomley (2009) asserts that some villagers resisted, while others participated in the logging. Such participation transformed the highlanders' relationship with 'nature' from reciprocal to viewing 'nature' as a resource from which monetary value could be extracted (Bottomley 2009). Although the realisation that trees hold monetary value may have impacted land relations in the northeast highlands, we argue that the shift in customary land tenure and land relations, from 'open and common'[3] to private property, has only occurred over the past two decades. Such transformation occurs at the intersection of large-scale land dispossession and the integration into the market economy through cash crops cultivation and microfinance expansion. In this section, we explore how such a shift began when the perennial crops (mainly cashew) were planted in the fallow fields instead of leaving land to regenerate.

In the late 1980s, as more and more swidden farmers returned to their original villages, at least for the non-Christian converts under the scrutiny areas, social relationships with the spirits of the land and forest were resumed. However, the land tenure and relations embedded in the swidden agriculture have rapidly changed since Cambodia issued a series of laws, including the 2001 Land Law, the 2002 Law on Forestry, and the 2005 Sub-Decree No. 146 on Economic Land Concessions (ELCs). Under these laws, millions of hectares of Indigenous territories were granted for concession companies (Diepart and Schoenberger 2016), and more land was allocated for state-protected areas (Baird 2009; Bourdier 2024).[4] While this series of laws and sub-decrees facilitated the granting of millions of hectares of land to various concessionaires, the 2001 Land Law includes a legal provision for the recognition of Indigenous Peoples' land through a process known as Indigenous Communal Land Titling (ICLT). It is the first legislation to recognise the existence of Indigenous Peoples and their land in Cambodian history, which also made Cambodia the first country in Southeast Asia to legally recognise Indigenous Peoples' land (Baird 2013).

Although NGOs and development agencies working on Indigenous Peoples' land rights had hoped that communal titling would help to maintain the customary land tenure, in practice, it has become merely a tool of state territorialisation (see also Dwyer 2015). In fact, communal land titling was not

[3]Here, the concepts of common and open resources do not adhere to a strict definition; instead, this notion refers to the absence of individual land ownership. Unlike gongs and jars, land had not been an object of possession in the past. However, ownership of crops (e.g., rice and fruit trees) on land existed, so when land was left for regeneration, the abandoned plots returned to the domain of spirits

[4]Up until 2012 when the Cambodian former Prime Minister Hun Sen imposed a moratorium on the granting of new ELCs, LICADHO (2024) estimated that 2.1 million hectares of arable land, mostly in the northeastern hills, had been granted to various concession companies, representing more than 50% of Cambodia's arable land (World Bank 2025).

implemented until 2009.[5] To be eligible for communal land titling, the northeastern ethnic minorities (except Lao) must pass a state ethnicity verification process to prove that they belong to a specific Indigenous group, known in Khmer as *chun chiet daeum pheak tech*. Baird (2019) reports that the assessments were carried out by central government officials, mainly from the Khmer majority, and the assessment criteria included speaking ethnic languages, dancing, and performing songs. In one case, the Brao were trained for certain dance moves that were not historically theirs (Baird 2019). Once recognised as Indigenous Peoples, the Bunong, Brao, Kavet, Kachok, Kreung, Jarai, Tampuan, and other ethnic minorities (except Lao) in the northeast can apply for ICLTs. Ironside (2013) seems to claim that ICLTs recognise customary land rights, but we argue otherwise. In practice, ICLTs fall far short of customary land tenure as a common and open resource. Rather, it functions as a legal instrument to confine Indigenous communities to a tribal slot, in the words of Li (2000), and to prevent them from expanding their agricultural fields outside the demarcated ICLTs.

In March 2022, one of the authors followed the team of Land Department officials who were carrying out GPS registration to produce preliminary ICLT maps, she learned that the officers had used a 'leopard skin strategy' (*yŭttasăh sbêk khla* in Khmer) for mapping, a method commonly employed in land registration across Cambodia (Milne 2013). Using this strategy, the officers only included what they considered to be 'active' agricultural fields. As a result, the secondary forest around the current swidden or cashew fields was excluded from this mapping process. While the community saw this secondary forest as part of their swidden farming system, the officials saw it as state land. This has left community members at a crossroads over what to do with the secondary forest that is so essential to their system of swidden agriculture. A male community representative expressed this dilemma as follows: 'If we clear the forest to grow cashew, the land can be included in the mapping, but this may put an end to our swidden farming (*châmka vĭl chum* in Khmer)'.

Thus, across our study sites, as swidden farmers have come to understand that *dei prey* (forestland) is considered 'state land', efforts to convert forestland into fields for perennial crops are increasing. The adoption of perennial crops in response to various forms of land insecurity and encroachment caused by ELCs, protected areas, and the arrival of Khmer and Cham migrants and settlers has been observed at least since the early 2000s. At a group dinner in Banlung in mid-2022, a young Jarai man who was frustrated by years of land encroachment by a rubber concession company said: 'This mapping process [of this rubber concession] started around 2000, they mapped all the forest as theirs without consulting any of the villagers who live and farm in the area'. He continued: 'In 2000, the forest was everywhere because we could only cultivate one hectare per family. When we saw this, around 2003, we started planting cashew trees because we also wanted to have *dei thum* (large agricultural land)'.

This finding is consistent with the findings of Padwe (2011), Ironside (2013) and Bourdier (2019) that the decision to clear larger land for cashew cultivation was not only a response to market opportunities, but also a way of fighting land encroachment, concessions, and other forms of land insecurity. The cultivation of a permanent tree crop, initially inspired by the realisation that the abundance of land was coming to an end, had

[5]It was when the Sub-Decree No. 83 on the Registration Procedures of Indigenous Communities' Land was issued.

contributed to the end of land as open and common in itself as a piece of land is individually claimed (see Li 2014 for the case in Indonesia). Indeed, the cultivation of permanent cash crops such as cashew and rubber also increases land value. This makes land more visible to land brokers and speculators, thus accelerating land loss through the market mechanism. Simultaneously, the increase in land values also allows the highlanders to actively participate in the land market in a way that benefits them. In several cases, highlanders sold cashew fields at about US$ 5000 per hectare to buy cheaper pieces of forestland elsewhere, albeit far from their current village, at around US$ 1000–1500 per hectare. Highlanders' active participation in the land market, needless to say, complicates the processes of land loss and also reveals that land loss does not always occur passively.

### *5.3. Cash economy as the new order*

Cultivating permanent cash crops not only increases land values but also facilitates the gradual integration of the swidden farmers into the cash economy through the sale of nuts. As the way of living increasingly shifts from subsistence to cash economies, land and labour relations are adapted to the new economic order. For example, as documented in the past, the land was never part of the items of wealth in northeastern societies (except for Lao); instead items such as gongs, jars, buffaloes, and jewellery used to indicate wealth status (Bourdier 2006; Matras-Troubetzkoy 1983; Padwe 2020; White 1996). To this day, land acquires its economic and social value through the process of wealth recognition. Relationships with land are increasingly seen as determined by production. Villagers (Christian and non-Christian) are beginning to see the uncultivated forbidden space, such as burial grounds, as idle, whereas traditionally, such a thought might have angered the dead, resulting in illness or accident. To illustrate, during a visit to a burial ground in a Kreung village, one of the authors was accompanied by her village assistant, whom she calls Lor. Lor pointed out the recently cleared forest next to the graves and the remains of the graves and said that this was the old burial site because when they cleared the forest, they found jars and a broken piece of a jar (*péang* in Khmer). One of the authors asked, 'Is it OK to farm on the burial ground?' He replied, 'The dead are dead'.

In a Tampuan village, one of the authors attended a funeral ceremony for a baby girl. Once inside the burial forest, one must face forward without turning one's head. The ritual was to ensure that the dead did not become attached to the living. Upon entering the burial forest, the author overheard the following conversation in Khmer between a Tampuan and a non-Tampuan man:

- Tampuan: This burial forest (*prey káb khmaôch* in Khmer) covers about seven hectares.
- Non-Tampuan: If it were converted into a field (*châmka* in Khmer), it would be a lot.
- Tampuan: Right, if it is converted into a rubber field, tonnes of rubber can be extracted. Many villagers could earn money by collecting rubber. Then the rubber sales can be shared among the villagers. It is like a communal rubber field.

In terms of labour relations and arrangements, these have not been entirely replaced by capitalist relations, as described by Li (2014), where paid labour replaces the practices of labour exchange or mutual aid for certain agricultural activities. The labour relations of the subsistence economy continue to be practised, but in ways that are integrated into the

cash economy. For example, the task of cutting the grass to maintain the cashew fields during the rainy season, when cash is limited, is still mainly managed by the labour exchange, known in different local expressions as *do dai*, *vé dai* and *provăh dai*. In contrast, during the cashew harvest season, family and village members are hired to pick the cashew nuts at the market price of 1000 riels (approximately US$ 25 cents) per kilogram of nuts they can pick.

## 6. Climate change, indebtedness, and land dispossession

### 6.1. Shifting socio-ecologies on the land

Climate change impacts manifest *through* shifts in land and labour relations under the new economic order. As agricultural production becomes increasingly linked to global commodity markets, relations of reciprocity change, and the intricate socio-ecological shifts associated with deforestation and climate impacts reverberate more strongly throughout people's livelihoods.

Farmers often refer to the landscape and the different ways they relate to it to describe and explain changes in weather and climate. Prayers and offerings to forest spirits are common practices to both request favourable weather and remedy undesirable weather. For instance, one villager explained that once, the land had become extremely dry, which was a sign of the spirits' discontent and that only after the proper ritual had been performed could the land return to its normal state. Such accounts often co-exist with understandings of climate change as anthropogenically driven: 'We may pray for more rainfall, but this climate change is not caused by our ancestor's spirit. We do pray to our ancestors before the cultivation by making prayers and offerings on our farmland' (Male Tampuan farmer, March 14, 2022). The techniques farmers often use to predict weather patterns are derived from knowledge intrinsically linked to the natural environment. Largely, villagers attributed the changes in the climate to deforestation in the province.[6] This is illustrated in the words of one elderly Lao couple:

> Traditionally, we observe the tail of the Bengal monitor. If there are redder on the tails, this year, it will be dry. If there are more black on the tails, this year there will be more rain. […] Black, rain. Red, no rain. We observe the child of the Bengal monitor because it gives birth once a year. We can know as long as we have the Bengal monitor. I have observed, so I think it is correct. […] Either raining at the beginning or at the end of the year, we also know. […] Based on my observations, I guess rain will decrease in the future. I assume that because when I was young, there were many forests. In the rainy season, there was regular rain. Currently, because of forest loss, the weather is irregular and changes from day to day. Let's say in 1992, there was regular rain. After the elections in 1998 or 1999, when they started to deforest, it started changing. In July, we used to finish sowing the rice field, and some people started to sow in June, but now it is delayed to July or August to finish sowing. Therefore, it has changed too much. It's not regular anymore. (April, 2022)

Across the villages, farmers observed distinct changes in temperature and precipitation patterns and seasonality over the last twenty years. More than single events, people often described multiple 'small' and 'unusual' weather events occurring successively. The results of group discussions on changes in land use and climate show that most reported types of

[6]According to the FAO, between 2000 and 2020 forest cover in Cambodia decreased from 61.1% to 45.7% (FAO 2020).

events include erratic rainfall (early, delayed, or heavy), dry weather, droughts, storms, and high temperatures, while occurrences of low temperatures are becoming rarer. Episodes of rainfall were described as becoming more frequent. Such observations are consistent with observed and projected climate trends in Cambodia. Over the period 1971–2020, the country's average temperature increased by 0.29°C per decade, with the greatest mean temperature changes most widespread in the northern provinces (The World Bank Group and Asian Development Bank 2021). A key informant from the provincial agronomy department stated that the annual quantity of rain had not changed on average (2200 mm) compared to twenty years ago, but it had become much more intense and shorter. On several occasions, farmers described how their inability to predict weather patterns negatively affected their yields:

> Since the weather is unpredictable, farmers can no longer able to accurately predict the rainfall patterns. They will start seedling once the rain starts to pour. However, rain sometimes only pours for a few days and stops for more than a week, which usually causes the seedlings to be damaged or unable to grow into stems. (Elder Lao farmer, March 20, 2022)

Extreme weather and climate impacts affecting agricultural production are no new phenomena in the region, but the way people face such events has changed. In the past, inhabitants of the region used their swidden farming systems, the forest, and various forms of reciprocal exchange. Research by Guérin (2001) on highland farming systems in the 1900s showed how, during years with heavy rainfall episodes, there used to be a rice surplus exchange between Cambodia's lowland and upland regions. Our own data confirm that historically, highlanders heavily relied on their access to the forest, collecting products such as tubers and honey, hunting wild game, and fishing. This enabled them to subsist for several months when facing extreme climate events. As part of their swidden farming systems, communities also left some of the land to fallow and recover for 5–10 years.

Today, in the context of land scarcity and insecurity, such practices can no longer be used. Swidden farming is mostly confined to smaller areas and with shorter fallow periods (2–3 years). The cashew trees, which can produce continuously for as long as twenty years, contribute to changing how land is valued (Padwe 2011). During our research, villagers often described cashews as a 'good' crop because it is relatively 'easy' (unlike rice) and does not require much labour. In addition, villagers explained that the lack of forest space and land had led them to stop growing mountain rice. One key informant, who had worked with agricultural extension services for farmers for over twenty years, described how when he first arrived in the province, as much as 30,000 ha were dedicated to rice production compared to only 9000 today. He attributed this to the expansion of cashew production, which now covers approximately 50,000 ha (Figure 1). Meanwhile, farmers described how paddy rice, though crucial for their families, has become particularly difficult to grow in current climatic conditions, and even small shifts in weather conditions could cause significant damage to rice seedlings. This, in turn, increases their need for cash to purchase rice and, thereby, their dependence on cash crop cultivation. This was also reflected in the household questionnaire results, which showed a trend towards intensification of production.

**Figure 1.** Photo of a villager working through a field of cashew trees in Ratanakiri.

During the fieldwork in 2022, when visiting the fields in the villages, we observed a large amount of not yet fully formed cashew flowers and dead fruits covering the fields (Figure 2). The remaining fruits and flowers on the trees also showed clear signs of pests and decay. When asked about the state of the trees, villagers explained that the high temperatures during the flowering period had caused the cashew flowers to over-burn (*khlaôch* in Khmer): 'The cashew bears little fruit. When the temperature increases, it does not bear much fruit. Its flowers will fall from the tree or dry out' (Female Tampuan farmer, March 6, 2022). This was also reported in national news outlets as occurring in other provinces across the country (see Chhum 2023; Chhum and Phuong 2022). Beyond high temperatures, excessive rain had also caused fruits to rot in some years.

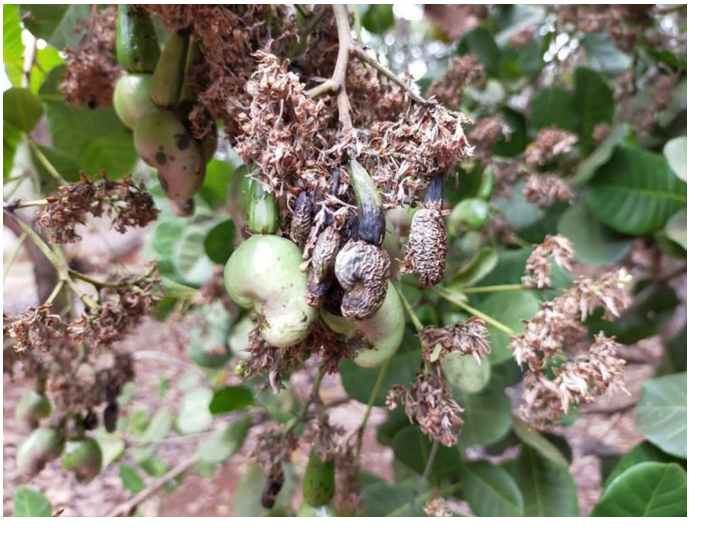

**Figure 2.** Photo of *khlaôch (over-burned)* cashews on a tree in Ratanakiri.

Additionally, farmers explained that the number of pests and diseases had significantly and steadily increased in recent years. This can be partly explained by the expansion of cashew monoculture in the region. However, evidence shows that climate change is already influencing the incidence of agricultural pests and disease infestations in other areas (IPCC 2019). Farmers had increased their use of pesticides and chemical inputs to face infestations. As one farmer explained, if they did not use such products, they would not even save 40% of the yield. Many farmers believed that if their cashew tree was not producing well, it was because they did not use these products, especially among households that could not afford them. Concerns about their ecological impacts were widely shared among villagers who felt they had no other choice, despite being worried about the health of the land and their own.

Even if some form of reciprocal labour exchange persists, the redistribution of surplus through collective feasts and animal sacrifices that allowed rice and meat to be consumed and exchanged can no longer be pursued. Descriptions of current yields and soil fertility often contrasted starkly with those of the abundance of forests and animals in the past, where people shared their produce with the community 'without charge', as one villager described. As one focus group participant explained when discussing the impacts of extreme weather events: 'Back then [10–20 years ago], we would not have much concern even if our crops died. However, the situation has changed. If our crops die, it is likely to impact the overall livelihood of our family' (Male Lao farmer, March 16, 2022). When asked how they dealt with the impacts of extreme weather, almost all responded that they would do ad-hoc work as cashew collectors (*reuh chanti* in Khmer). Oftentimes, villagers expressed feelings of hopelessness (*aôh sangkhœm* in Khmer) and a sense that, in the future, if climatic and land conditions worsened, they would not be able to grow anything.

### *6.2. Rising household indebtedness*

Feelings of hopelessness are worsened when combined with indebtedness. When we entered our fieldwork in 2021 in the northeast of Cambodia, microfinance debt had become essential in the way Bunong, Kreung, Tampuan, Jarai, and other ethnic minority groups organised their economic, social, and cultural life. A research article indicates that at the national level, the average household credit-to-GNI per capita ratio was 42.66% in 2000, increasing to 240.32% in 2015 (Bylander et al. 2019). In the northeast region, a series of household surveys conducted by the Wildlife Conservation Society ($N = 622$ in 2012, $N = 620$ in 2017, $N = 890$ in 2022), mainly among the Bunong in Mondulkiri, show that debt to microfinance institutions (MFIs) and banks was 8.4% in 2012, rising to 29.8% in 2017 and 47.8% in 2022 (Res 2024).

Debt and indebtedness are not new to human societies, as Graeber (2011) has shown that various debt systems have existed in most rural societies around the world for thousands of years. However, microfinance debt, driven by development ambitions to alleviate poverty, is the most contemporary form of debt among other forms of debt that exist in Cambodian societies. The development of the microfinance sector in Cambodia is characterised by an evolution from non-governmental organisations (NGO, *angkar* in Khmer) to banks or commercial MFIs that currently hold US$ 11.2 billion in microloans (National Bank of Cambodia 2022), rising to US$ 16 billion by March 2023, which is almost half of

Cambodia's GDP (LICHADO 2023), serving more than 2.6 million borrowers across Cambodia (LICHADO 2020). To this day, most rural Cambodians, including Indigenous households, refer to banks or MFIs as *angkar,* which simply means 'organisation'. Unlike other forms of debt that exist in Cambodia, microfinance does not rely solely on moral sanction (Mauss 1925). It also relies on collateral (land and house titles), as well as legal and bureaucratic sanction through its physicality in the form of loan contracts (*kech sonya khchei luy* in Khmer). Local authorities, mainly the commune police, commune chief and village chief (sometimes the district office), are key actors in enforcing this loan contract to ensure that the debt is repaid, often at any cost (see also Green 2020b). Another feature of *luy angkar* (MFI/bank loans) is the rigidity of debt repayment terms; the debt must be repaid at a fixed date with a fixed amount of interest.

Farmers across Cambodia usually take out a loan at the beginning or middle of the growing season (rainy season), which begins in May and repay during the harvest season. In the northeast of Cambodia, depending on the loan amount, the borrower may ask to repay the loan in one or two instalments. In the case of two repayments, the first repayment is made during the cassava harvest in January or February, and the second is made during the cashew nut collection in March or April. The interest is usually repaid in advance up to the time of harvest (cassava or cashew). This means that between 5 and 10 months of interest is paid in advance. For example, a 23-year-old Bunong woman in Mondulkiri said she took 2 million riels (approximately US$ 500) from a major MFI in August 2022 and used the borrowed money to pay the interest five months in advance. Ultimately, she had 1.75 million riels (approximately US$ 437.5) left to buy gasoline for the motorbike and a grass-cutting machine, herbicide for maintaining her cashew field, and the rest was used for household consumption. Her case is not unique in Cambodia. At the national level, the 2021 National Socio-Economic Survey revealed that in rural areas, 20.4% of loans were used for agricultural activities (National Institute of Statistics 2022).

### 6.3. Climate impacts and debt-driven land sales

Many villagers described the cyclical relationship between extreme weather events, poor yields, and risks of debt failures: 'If our crops are damaged and we are unable to repay this year, some people will need to borrow further to repay the old loan' (Female Lao farmer, March 16, 2022). As one farmer explained, it was only when he took out a microfinance loan that he began to worry about the changes in the climate; he observed year after year how the rain patterns had become unpredictable. The impacts of delayed and heavier precipitation had significantly damaged his cassava, leaving him with only a portion of the usual and expected yield; he worried that he would be unable to repay his loan. Nearly 60% of interviewed households declared finding it difficult or very difficult to repay their loans. When asked to discuss the impacts of extreme weather on farming, villagers often expressed unease about the situation. They referred to rumours of people losing their land in other villages and even getting arrested because of defaulting on microfinance debt.[7]

[7]In the past, the risk of losing land through debt, in the form of money or consumer goods advances issued by Khmer traders and shop owners, was not uncommon in the northeast highlands. However, threats presented by microfinance debt can be more severe and have larger impacts in scale, as microfinance institutions have much larger access to the

Our survey results indicate that households have minimal support to deal with the impacts of extreme weather events. Several farmers observed an overall decrease in cashew yield in the last 5–7 years, with some reporting a drop in income from US$ 1000 to 1500 per hectare to about US$ 350 to 500 per hectare. In addition, several reported that most often, approximately 50% of the cashew yields could be damaged during one severe weather event. One household would lose approximately 500,000 riels (approximately US$ 125), and to compensate for the loss, households would sometimes revert to selling animals (e.g. pigs). Cashew collection, one of the most common practices undertaken to compensate for these losses, pays approximately 1000 riels (US $ 0.25) per kilogram of collected nuts, and farm labour or weeding work pays, on average, 25,000 riels per day (US$ 6). Work opportunities for cashew collection are, however, quite competitive and variable. Experienced collectors could collect up to 80–100 kg per day, while less experienced ones could get between 20 and 30 kg per day. However, collection speed is not the only factor determining how many kilograms of cashew nuts a collector can get; it also depends on the yield of the cashew fields. Often, it means that people need to juggle multiple activities to get by. As one single mother explained, she would rotate between her cultivation on her small plot of land (1 ha) and labour work on others' farms:

> They would give half a hectare of their land for rice cultivation. When all the forests are cleared from their farmland, they no longer allow me to use their land for cultivation. The owner just uses their land to cultivate something else. […] Then, I move to the next farm and help to clear the forest on the land in return for a small piece of land inside the farm for cultivation. […] I was pitied by the farm owners. I do labour work almost every day for a whole year. In the dry season, I pick cashew fruit. In the rainy season, I get hired to clear the weeds, grow beans and cassava, and get 20,000 riels [US$ 5] per day. I am tired because I don't get enough sleep, as I have to do labour work every day. (Tampuan female farmer, March 6, 2022)

When it comes to default, microfinance borrowers have minimal choice. Based on 119 microfinance borrowers in Cambodia's lowland provinces, Res (2021) classifies debt repayment strategies at the time of default into three levels. The primary and secondary strategies include reducing household food consumption, depleting savings/or selling personal assets and livestock, circulating interest-free loans among kinship circles, and rotating loans with informal or formal lenders that charge interest. The coping strategies that can have devastating effects are distress migration, withdrawal of children from school, child labour and sale of productive assets such as land. In northeastern Cambodia, Indigenous households struggling to meet debt obligations are often instructed by their credit officers to borrow from informal lenders at interest rates between 5 and 10% per month to repay the debt, to add more loans to the current loan (refinancing), and to sell their personal belongings and any assets, including land.

Cross-border migration is not yet common among Indigenous households. However, in late 2022, one of the authors began to observe seven Indigenous households in one of her study sites migrating to Thailand as a direct response to debt pressure. When she returned

pool of capital than any of these traders/shop owners could have. In turn, moneylenders/shop owners/traders can finance their (money or consumer goods) advancing businesses with microfinance loans. Indeed, across Cambodia, it is becoming common that moneylenders/traders/shop owners take out microfinance, to relend or to provide harvest advances to farmers (Green 2025).

to the village in April 2023, she found that more and more households had left, mainly due to debt pressures but also because of opportunities to earn higher cash incomes (300 baht per day, approximately US$ 10) in fruit orchards in Thailand. Out-of-province migration, for instance, which is a prevalent debt-coping mechanism for households in other parts of the country (Bylander 2015), was found to be marginal among surveyed households, with only 7% (out of 295 households) declaring that they had a member who engaged in out-of-province migration. Interviewees referred to their inability to migrate outside the province due to low Khmer language skills and illiteracy (35.8% of respondents had no education). For some groups, beliefs also play a significant role in limiting migration as one Kreung woman explained: 'We believe that our people will be made sick if the house spirit cannot find us when we are out of home for over a month. That is why we do not dare to travel across provinces' (March 12, 2022).

When other repayment strategies are exhausted (e.g. borrowing from informal lenders or selling personal belongings), selling a piece of land to repay the debt is expected by debt collectors *and* by the close relatives of the defaulting borrowers. Those borrowers who do not contest this practice often sell a piece of land to repay the debt when their loan approaches 30 days past due. Some found it preferable to sell their land in advance rather than waiting for MFI/bank staff to sell it as pledged collateral. For example, 57-year-old Tampuan sold all her agricultural land, mainly to repay a US$ 4000 loan she had taken from the fourth largest MFI in Cambodia when she realised that she was struggling to repay the monthly interest, which was between US$60 and US$70. She decided to sell the land before it became too difficult so that she could use the small amount of money left over to buy a *dei prey* (forest land) in another district. Defaulting borrowers who refused to sell their last productive assets were summoned to meetings with the village chief, the commune chief and even the district governor. Defaulting borrowers received constant threats of being taken to the police, jailed, and brought to court. Most defaulters gave up after being summoned to the commune chief (*mé khum* in Khmer).

A study of farming communities in Cambodia reveals that households have taken on more debt or sold land to repay existing debt due to failed or poor harvests resulting from erratic weather patterns (Guermond et al. 2022, 10). It showed that over the past 10 years, 5.2% of indebted households sold agricultural land to repay debt. When P. Res started her field research on microfinance in 2017, she observed that a big bank directly put a 'land for sale' sign on a piece of land pledged as collateral without a court order. However, such an act is considered unethical and is therefore rare, especially given the widespread publications on land loss due to microfinance debt (see Bliss 2022; Green and Bylander 2021; LICADHO and Sahmakum Teang Tnaut 2019).

### 6.4. Land sales and Indigenous communal land titling

> However, in the future, it will not be good if the land title as the common property is modified into individual land titles, since it will create a risk of losing the land for those who are unable to pay back their loan on time. The land will either be sold by those who cannot afford to pay the loan or be taken by the bank as collateral. (Male Tampuan interviewee, March 6, 2022)

Risks of debt failure and land sales reconfigure land relations and affect communal land tenure arrangements. Across the villages inhabited by Indigenous groups, discussions

around the effects of extreme weather impacts on crops and livelihoods often referred to ICLTs as a way to counter the risk of land sales and loss related to over-indebtedness. This was also mentioned several times by interviewees working in local NGOs, who felt this was the best available mechanism to 'protect' the communities from losing their land. However, after over 10 years of ICLT implementation since 2009, it was reported that only 40 out of 458 Indigenous communities received the ICLTs, which accounted for less than 10% (De Lange, Raj, and Yun 2023). Not only is the rate of ICLT issuance slow, but even the 40 ICLTs that have already been issued are at risk of being dissolved, as members of the ICLT communities use the land titles overlapping with ICLTs as collateral for loans from MFIs and banks. To illustrate, in one of the study sites, a third of the community members whose ICLTs were in the final stage demanded the dissolution of this title. In another ICLT community, five households requested to leave the ICLTs. The request to dissolve the ICLTs is also observed elsewhere in Ratanakiri (Baird 2023). More than a decade ago, Milne (2013) documented that some Bunong households in Mondulkiri had opted for individual titles in exchange for the possibility of using them as collateral for microfinance loans. These findings reveal that widespread access to microfinance loans threatens the only available mechanism (ICLTs) for protecting Indigenous communities' land.

As life is deeply intertwined with microfinance debt and increasingly integrated into the cash economy, the restriction on selling land through the ICLT can be seen as a burden. For example, a 30-year-old Bunong woman in Mondulkiri stated that collective titles are *yab* (difficult), while individual titles are easier. When Indigenous people engage in the land market on their own terms by selling a piece of land or shifting their alliance to the Christian God, they are seen as 'un-Indigenous'. These actions can be seen as 'un-Indigenous', especially by outsiders who are helping communities in northeastern Cambodia to gain legal status as Indigenous. To illustrate, an Indigenous woman who worked in the Rural Development Department on the project that facilitated the ethnicity verification process so that ethnic minority groups could obtain legal status as Indigenous Peoples under a Cambodian land law shared her frustration. She said that her boss was very negative (*ak kě tě* in Khmer) about the ethnicity verification work, saying that the department should not continue with the ethnicity verification work because more and more ethnic minority people (using the word *chun cheat* in Khmer) had converted to Christianity or sold their land. She remarks: 'Because of this attitude, my boss rejected two projects that focused on ethnicity verification'. She shares her perspective:

> Just because people have converted to Christianity or sold their land does not mean we should stop working on ethnicity verification. Instead, we should find a basic way to verify ethnicity. And for those who are selling land, is there any way we can help them not to sell their land?'

Indeed, her boss's attitude is rooted in land policy, where the definition of Indigenous Peoples is relatively narrow. Article 23 of the 2001 Land Law defines Indigenous communities as:

> a group of people residing in the territory of the Kingdom of Cambodia, whose members manifest ethnic, social, cultural and economic unity, and who practice a traditional way of life and cultivate the land they own according to customary rules of collective use.

In this sense, the loss of land through the land market, caused by climate impacts and repeated crop failures, health emergencies, and indebtedness, can lead to the loss of the opportunity to be recognised as 'Indigenous' by the Cambodian government.

## 7. Conclusion

In this paper, we examined the production of climate-related loss amongst Indigenous and ethnic minority farming communities in northeastern Cambodia. Our analysis shows that the social, economical, and political marginalisation of swidden farming systems since the early twentieth century through land policies, and the attitudes of state elites, bureaucrats and the Khmer majority, have led to a drastic decline in communities' access to land natural resources, which accelerated in the post-war period when Cambodia transitioned to a free market economy in the 1990s. In turn, the end of customary land tenure, combined with the integration into the market economy and rapid deforestation, produced land and livelihood insecurity that diminished people's ability to cope with climate impacts. As extreme weather events and changes in seasonality become increasingly vivid and affect agricultural productivity, the socio-ecological consequences of shifts from crops essential for subsistence to perennial cash crops, reduced access to forest resources, and rising levels of household debt through microfinance loans create conditions for debt-driven land dispossession and climate-related loss.

By calling debt-driven land sales as climate-related loss, we do not intend to deny or depoliticise their political-economic roots. Instead, we wish to emphasise how current climatic conditions – influenced by climate change – *precipitate* loss of access to land and contribute to *perpetuating* historically rooted patterns of marginalisation that lead to land dispossession. Such cases of climate-related loss are firmly embedded within remnants of colonialism and contemporary forms of capitalism that transform(ed) the landscape, relations of production, and people's lives in the region. Nevertheless, we argue that the effects of climate change can no longer be ignored, relegated as a distant possibility or dissociated from other socioenvironmental changes occurring in rural-agrarian areas. This echoes arguments made by critical agrarian studies scholars in the recent book edited by Scoones et al. (2023). The case illustrates how climate-related loss, like other forms of socio-environmental disruptions, does not always happen in catastrophic ways but often slowly and hidden from view – a form of slow violence Nixon (2011) – as climate impacts interact with the effects of financialisation and indebtedness in agrarian settings (Brickell et al. 2018; Green 2020a). Excavating the role of climate change in land dispossession processes presents an opportunity to make such cases of debt-driven land sales, or 'voluntary' dispossession, more visible, with implications for land and climate politics.

Our analysis reveals how multiple forms of loss coexist and co-produce one another, with land at the centre. In our research context, loss of access to land was accompanied by adverse effects on well-being, collective forms of land tenure, and identity. Analytically and methodologically, centring on land can be a productive way to bridge approaches that focus on historical-material analysis of socio-environmental change and those that focus on the subjective and experiential dimensions of climate-related loss, especially in agrarian contexts. It helped us decentre from the individual and grasp the collective dimensions of climate-related loss. These findings are relevant to ongoing advocacy

efforts that emphasise land and livelihood security as key to addressing climate-related loss and damage in farming communities in Asia (Oxfam 2023).

Several policy implications emerge from these reflections. Our findings highlight the need for a more expansive understanding of causality in framings of loss and damage, foregrounding colonialism, capitalism, and climate change as fundamentally linked not only at the global level, as recent scholarship has shown (Agarwal and Narain 2019; Singh, Corvino, and Andina 2023; Sultana 2021), but *also* at the subnational and local level. This would enable more scrutiny of financial institutions' roles and responsibilities and, consequently, more holistic measures to address such forms of climate-related loss. Although perceived as promising, interest in using attribution science to inform loss and damage policy can also contribute to 'invisibilising' locations and communities for whom climate data availability and other resources necessary for building an evidence base are lacking (King et al. 2023). Greater attention to and development of measures to prevent and address the linkages between climate impacts, farming household indebtedness and land sales in Loss and Damage policy forums is needed. This, we argue, is necessary to ensure that farming communities, such as those in northeastern Cambodia, can receive the support that they need. Failure to do so would, at best, result in misguided efforts, and at worst, exacerbate existing injustices.

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## Author contributions

CRediT: **Kelly Dorkenoo:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing; **Phasy Res:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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## Ethics declaration

The research does not involve the types of activities or data (i.e. personal sensitive or biological material) that require formal ethical permission from the Swedish Ethics Review Authority or research ethics committees in France. To ensure the safety of our participants, all names used in this manuscript are pseudonyms and verbal consent was obtained before the interviews. Participants were also informed of their right to withdraw from the research at any time or not to answer any questions they did not wish to without consequences.

## Data availability statement

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

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