Journal of Land Use Science

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tlus20

The agrarian transition in the Mekong Region: pathways towards sustainable land systems

Albrecht Ehrensperger, Vong Nanhthavong, Alice Beban, Christophe Gironde, Jean-Christophe Diepart, Natalia Scurrah, Anh-Thu Nguyen, Robert Cole, Cornelia Hett & Micah Ingalls

To cite this article: Albrecht Ehrensperger, Vong Nanhthavong, Alice Beban, Christophe Gironde, Jean-Christophe Diepart, Natalia Scurrah, Anh-Thu Nguyen, Robert Cole, Cornelia Hett & Micah Ingalls (2024) The agrarian transition in the Mekong Region: pathways towards sustainable land systems, Journal of Land Use Science, 19:1, 1-23, DOI: 10.1080/1747423X.2024.2288728

To link to this article: https://doi.org/10.1080/1747423X.2024.2288728

Published online: 28 Dec 2023.

JOURNAL OF LAND USE SCIENCE
2024, VOL. 19, NO. 1, 1–23
https://doi.org/10.1080/1747423X.2024.2288728

Taylor & Francis
Taylor & Francis Group

EDITORIAL

The agrarian transition in the Mekong Region: pathways towards sustainable land systems

Albrecht Ehrensperger[1], Vong Nanhthavong[2], Alice Beban[3], Christophe Gironde[4], Jean-Christophe Diepart[5], Natalia Scurrah[6], Anh-Thu Nguyen[2], Robert Cole[7], Cornelia Hett[8] and Micah Ingalls[9]

[1]Centre for Development and Environment (CDE), University of Bern, Switzerland; [2]Centre for Development and Environment (CDE), University of Bern, Vientiane office, Lao PDR; [3]School of People, Environment and Planning, Massey University, New Zealand; [4]Graduate Institute of International and Development Studies, Geneva, Switzerland; [5]The School for Field Studies, Siem Reap, Cambodia; [6]Regional Center for Social Science and Sustainable Development, Chiang Mai University, Thailand; [7]Mekong Region Land Governance, Vientiane, Lao PDR; [8]Asia Research Institute, National University of Singapore, Singapore; [9]Gembloux Agro-Bio Tech, University of Liège, Belgium

ABSTRACT

The agrarian transition, with its rapid growth in land-based investments, has radically altered agrarian and forest landscapes across the Mekong Region. These processes were enabled and accelerated by choices of actors in the public and private sectors with the aim of alleviating poverty and boosting socioeconomic development. We examine to what extent these goals were achieved and for whom, with a focus on poverty alleviation, gender equality, and forest conservation. Our descriptive assessment shows that the sustainability outcomes of the agrarian transition offer a highly variegated picture that is often not reflected in national level statistics used for monitoring the distance to target towards achieving the 2030 Agenda. Based on our findings, we sketch pathways for a more sustainable agrarian transition in the region. These pathways are explored in greater detail in three framing papers of the special issue "Agrarian Change in the Mekong Region: Pathways towards Sustainable Land Systems'.

KEYWORDS

Agrarian transition; Mekong region; 2030 agenda; customary tenure; poverty; gender

1 Background

Since the turn of the 21st century, the agricultural landscapes of the Mekong Region (Cambodia, Laos, Myanmar, Thailand, and Vietnam) have been profoundly transformed. The rapid growth in commercial agriculture and land-based investments, and changing national policies to accommodate and encourage these investments have radically altered agrarian and forest landscapes across the region (Diepart et al., 2023, this collection). These changes have become integral to Southeast Asia's agrarian transition, from predominantly rural, subsistence-oriented societies to increasingly market- and urban-oriented ones (De Koninck, 2004). This process has accelerated throughout the 2000s, with new waves of investments in large-scale commodity cropping and the transformation of smallholder farming, both fuelling the region's export sectors (To, 2023, this collection). As outlined

CONTACT Albrecht Ehrensperger albrecht.ehrensperger@unibe.ch Centre for Development and Environment (CDE), University of Bern, Switzerland

below, the agrarian transition took different paths across the countries of the region (Diepart & Middleton, 2022; Jansen & Kalas, 2023).

In Thailand, the transition was shaped by the country's capitalist development and began during the Green Revolution mainly through intensification for export-led production driven by improved technology, investments in inputs (fertilizers and pesticides), improved seed varieties and smallholder farming (Ingalls et al., 2018). Smallholder farmers engaged in upstream inputs, and downstream processing and marketing to increase productivity and value addition. In parallel, a policy restricting land accumulation and the resistance of smallholders against land dispossession pushed agri-businesses to cross borders and acquire land for investments in neighbouring countries, particularly Cambodia, Laos, and Myanmar (see chapter 8 by Philip Hirsch in Hirsch et al. (2022)).

In Vietnam, the transition started with land redistribution to smallholders in the mid-1980s followed by a shift towards market-oriented production (Ingalls et al., 2018; Jansen & Kalas, 2023; Scott, 2009). In the early 2000s, the government drove industrialization and modernization by changing the national land policy, allowing long-term leases and concessions of farmland for urban and industrial development (Tran et al., 2022, this collection). As a result, agricultural land availability decreased, leading to soaring land prices. To cope, state-owned and smaller enterprises sought land in Cambodia and Laos for commodity production, either importing back home or participating in global value chains. This shift brought both opportunities and challenges for businesses, requiring adaptation to foreign environments and potential economic vulnerabilities. Balancing industrial growth with agricultural support becomes crucial for sustainable development (Mellac & Dao, 2019) in (Hirsch et al., 2022).

In contrast, the governments of Cambodia, Laos, and Myanmar strongly encouraged (trans-) national export-oriented investments through land concessions, leases, and contract farming (Hirsch & Scurrah, 2015; Hirsch et al., 2016; Thein et al., 2018). Granting land to (trans-) national investors for agricultural purposes started in the early 2000s and skyrocketed in 2007–08 due to the global food, energy, and financial crises (GRAIN, 2008). The precise total area granted to (trans-) national investors for tree and agricultural purposes in the Mekong is still unknown, but it is estimated that at least 4.2 million hectares have been awarded over the last decades (Ingalls et al., 2018). Smallholder-led commercialization also significantly contributed to agricultural production towards export (Nguyen et al., 2023, this collection).

The agrarian transition has been a complex and multifaceted process, with both positive and negative impacts. Over the past 40 years, it has helped to increase productivity significantly, to improve food security, to boost exports, and to lift many millions of smallholder households out of poverty, particularly in Thailand and Vietnam (Scott, 2009). At the same time, it has raised concerns regarding environmental degradation, the rapid removal of natural habitats, and the increase of social disparities (Ingalls et al., 2018; Rigg et al., 2016; Scott, 2009). The boom in (trans-) national commercial investments has increased land dispossession while offering only inadequate alternative employment opportunities and access to markets or technology to former land users (Dell' Angelo et al, 2017; Nanhthavong et al., 2021). Further, smallholder-led agricultural commercialization has often focused on a narrow range of high-value crops, which has increased the market-related risks by smallholders who depend on them (Beban & Gironde, 2023, this collection; Praneetvatakul et al., 2016).

It is important to note that the benefits of the agrarian transition have been highly unequally distributed. Poorer and socially marginalized communities, particularly those living in rural areas with low land tenure security, in state forest areas, or in areas with a high proportion of ethnic minorities, have been excluded from wider gains in national development (Nguyen et al., 2023, this collection; Warr, 2016). Changes in the structure of national GDP are illustrative: while the contribution of the agricultural sector has grown, it has been substantially outpaced by the growth of industrial and service sectors such that agriculture's overall contribution to GDP has fallen off sharply. At the same time, the share of rural households who depend at least partly on agriculture has remained high (Ingalls et al., 2018). This suggests that there are not only significant rural-urban, but also rural-rural migrations. Part of this rural population is not fully integrated in other sectors and

therefore left behind in the development process. Thus, the dominant socio-demographic trend of the transition is a 'truncated and partial de-agrarianization' (Rigg et al., 2016).

These changes have been enabled and accelerated by the choices of social and economic actors in the public and private sectors. In the race for development and in a bid to attract investment, governments in the region have tilted the scales in favour of corporate and agribusiness actors. They do so by offering below-market rates for land, facilitating land acquisition through concessions, focusing tenure security enhancement in urban and peri-urban areas at the expense of rural and agricultural ones, and promoting monoculture systems and the export of commodity crops.

In 2018, the Mekong Region Land Governance project (MRLG) and the Centre for Development and Environment (CDE), University of Bern, Switzerland, produced the first-ever report on the *State of Land in the Mekong Region*. The authors, Ingalls, *et al* (Ingalls et al., 2018), identified a range of socioeconomic impacts of the agrarian transition, among which rising landlessness and the unequal distribution of land and forest resources is a central concern. Accordingly, they strongly advocated for the recognition and formalization of land rights as a way of securing rural livelihoods, reducing disparities, and promoting alternatives to the paradigm of agricultural commercialization. Further, the authors identified large-scale commercial investments as key drivers of deforestation and environmental degradation and raised alarm over the extreme simplification of agricultural landscapes, the loss of crop variety and ecosystem services, and growing threats to ecosystem stability.

2 Objectives and scope

2.1 Objectives

We describe the trends and distance to target for sustainability concerns that are particularly relevant in the context of the agrarian transition. We seek to disaggregate this overview to show the social and geographic differentiation of progress, asking who is left behind and who is not counted in national accounting of development progress. Based on this, we show how more equitable and inclusive transformation pathways in land systems could contribute to a sustainable future in the Mekong.

We use the United Nation's 2030 Agenda (United Nations, 2015) as a framework to organize our assessment, because it is today's main global aspirational consensus on sustainable development. The 17 sustainable development goals (SDGs) also represent a comprehensive common lexicon for development policymakers. Within the very broad scope of the 2030 Agenda, we focus our assessment on poverty reduction (SDG 1), questions of equity (SDGs 5 and 10) and impacts on terrestrial ecosystems (SDG 15).[1] These development issues emerged as critical concerns in a consultative process involving inputs from more than 100 thematic experts and policy-makers from around the region (Ingalls et al., 2018). The experts' concerns were particularly addressing the path of increased land-based investment taken by the agrarian transition in Cambodia, Laos and Myanmar, reason for which we give particular attention to this path of the agrarian transition. Further, they are central to the question of smallholder farming, which is on the frontlines of sustainable development issues in the Mekong Region.

2.2 Scope

This article is an introduction to a collection of contributions in the Journal of Land Use Science (JLUS) on the theme of the agrarian transition in the Mekong Region. The collection builds on the *State of Land in the Mekong Region* report (Ingalls et al., 2018) and explores key issues highlighted there in greater depth, updates the understanding of these, and proposes pathways towards more sustainable transformation. The collection is organized around three main sections, each covering a key theme of the agrarian transition: (1) agricultural commercialization, (2) the recognition and formalization of customary tenure, and (3) the environmental outcomes of ongoing transformations. The impacts of the agrarian transition on

livelihoods and poverty (SDG 1), disparities and gender equity (SDG 5), and the environment (SDG 15), which are central to the present article, are treated as transversal themes in the three sections of the collection. Each section is introduced by a framing paper co-authored by the guest editors of the collection and invited researchers and includes several case-study papers gathered through an open call in JLUS.

3 Materials

This objective requires zooming in on specific sub-national contexts to unravel complex realities that are often overlooked in national and regional development statistics. Hence, we use examples from such contexts to illustrate the three main themes addressed in the article. Our selection of examples was guided by their meaningfulness to illustrate the respective development concerns and the availability of data with sufficient quality and resolution to allow us to gain an in-depth understanding of the mechanisms and causal relationships between agrarian transition and selected development concerns:

First, we discuss the positive and negative poverty outcomes of the agrarian transition (SDG 1) in various parts of the Lao PDR based on village-level poverty data from the national census of 2005 and 2015 (Epprecht et al., 2018) and on a comprehensive assessment of land-based investments (Hett et al., 2018, 2020). To our knowledge both datasets are unique in terms of resolution, accuracy, and comprehensiveness in the Mekong Region. While the Lao PDR is not representative of the entire region regarding the poverty outcomes of the agrarian transition, it is illustrative of the differentiated impacts of agrarian transitions. Further, the insights and recommendations derived from this illustration are relevant for the entire region, particularly Cambodia and Myanmar, who have been a target for similar land-based investments.

Second, we discuss the effects of the agrarian transition on gender equity (SDG 5) based on a review of relevant global reports from non-governmental organisations and United Nations agencies (OECD, UNDP, FAO, and Care International), as well as a body of available scientific literature on the topic, mostly from Asian, Australian, and European scholars. Owing to the lack of data on gender disparities at sub-national scale in the Mekong Region, figures in this section are provided mostly at national level and subsequently illustrated with examples from the different countries.

Third, we analyse the impact of agricultural concessions on forest cover (SDG 15) in Cambodia using two publicly available and regionally consistent datasets: the Annual Continuous Fields of Woody Vegetation Structure in the Lower Mekong Region (Potapov et al., 2019) and the SERVIR-Mekong Regional Land Cover Monitoring System. To begin, we assess changes in primary forest cover between 2001 and 2017 based on the data from (Potapov et al., 2019) available at https://glad.umd.edu/dataset/mekong. Primary forest are defined as mature natural humid tropical forest that has not been completely cleared and regrown in recent history (Turubanova et al., 2018). Next, we use the SERVIR land cover data to identify land cover in 2017 in areas where primary forest losses were detected between 2001 and 2017. We focus on three categories (orchard and plantation, cropland, and rice) to single out agricultural commodity-driven deforestation. Finally, by utilizing the agricultural concessions layer of Licadho (www.licadho-cambodia.org/) we distinguish commodity-driven deforestation within and outside agricultural concessions areas. This study focuses on Cambodia due to the availability of spatially referenced concession data. While it may not represent all areas in the Mekong Region, the Cambodian case sheds light on important mechanisms also prevalent in other parts of the region, particularly Laos and Myanmar, offering valuable insights into identifying sustainability pathways.

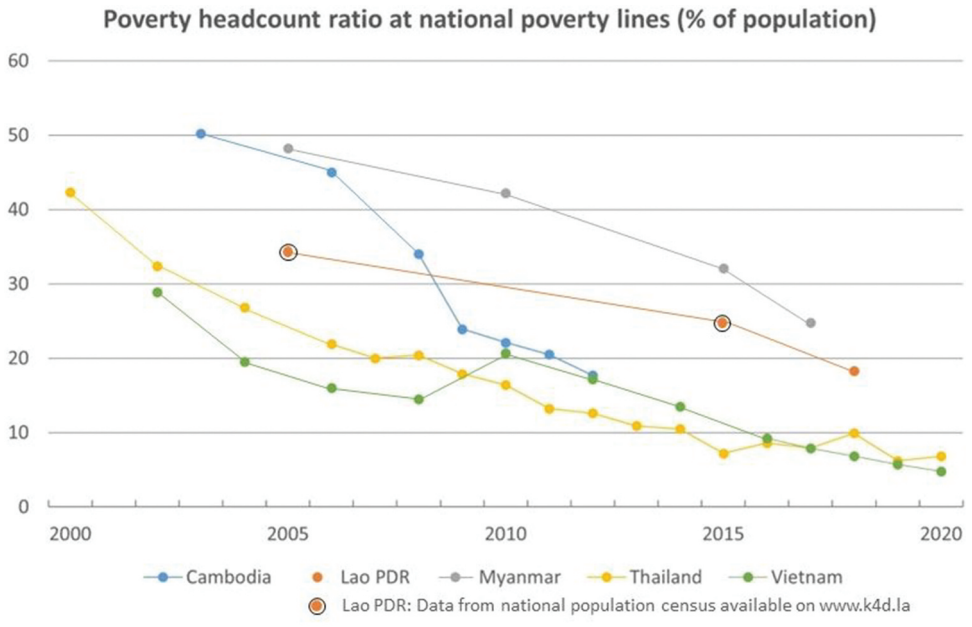

Figure 1. Poverty headcount ratio at national poverty lines (% of population) in the countries of the Mekong region. The World Bank, World development indicators used for this figure (https://databank.worldbank.org/) include only one entry for the Lao PDR in 2018. Two other datapoints were added based on the national population census data, found in Epprecht et al. (2018).

4 The agrarian transition and poverty reduction

4.1 Achievements at national and regional levels

SDG 1 of the 2030 Agenda targets the eradication of extreme and the reduction of multi-dimensional poverty, seeks to improve social protection, to guarantee equal rights to economic resources, and to strengthen the resilience of poor and vulnerable households to various shocks and hazards. Statistics show that the Mekong Region is on the way to reaching these targets: according to the World Bank, poverty – with reference to the nationally determined poverty line – declined dramatically over the past three decades (Figure 1). In Thailand and Vietnam, poverty rates dropped from over 50% to less than 10% between 1992 and 2020. In Cambodia, it reduced from 50% to 18% between 2003 and 2012. In Myanmar the trend was similar, with a decrease from 48% to 25% between 2005 and 2017. Finally, in Laos the poverty dropped from 35% to 18% between 2005 and 2018 (Epprecht, 2008 and The World Bank[2]). The optimism of these impressive trends has been tempered lately by assessments showing that a large share of the population has indeed escaped poverty but did not go very far beyond the national poverty line, as revealed by the surge of poverty across the region during the COVID-19 pandemic (UNSDG, 2020).

During the same period, national poverty reduction policies targeting rural areas strongly relied on market integration and commodity production for regional and global markets through smallholder commercialization and investment by domestic and foreign investors. Hence, the question arises whether there is indeed a relation between the agrarian transition and the impressive improvement of the poverty situation in the region. A closer look at such possible links is of particular significance to assess whether rural communities, particularly smallholder farmers, who are most affected by land-based investments, also benefited from reduced poverty and if so, through what processes.

Addressing this question at regional or national scales provides only partial answers, as SDG monitoring figures or the above-presented World Bank statistics hide complex realities, which

strongly depend on the particularities of various contexts. Among others, these data hide disparities in the way various segments of the population benefit from poverty reduction. Below, we aim to illustrate these complex relations between the agrarian transition and poverty trends in Lao PDR with the help of openly accessible national census data (www.k4d.la) and data from a comprehensive assessment of land based investments (Hett et al., 2018, 2020).

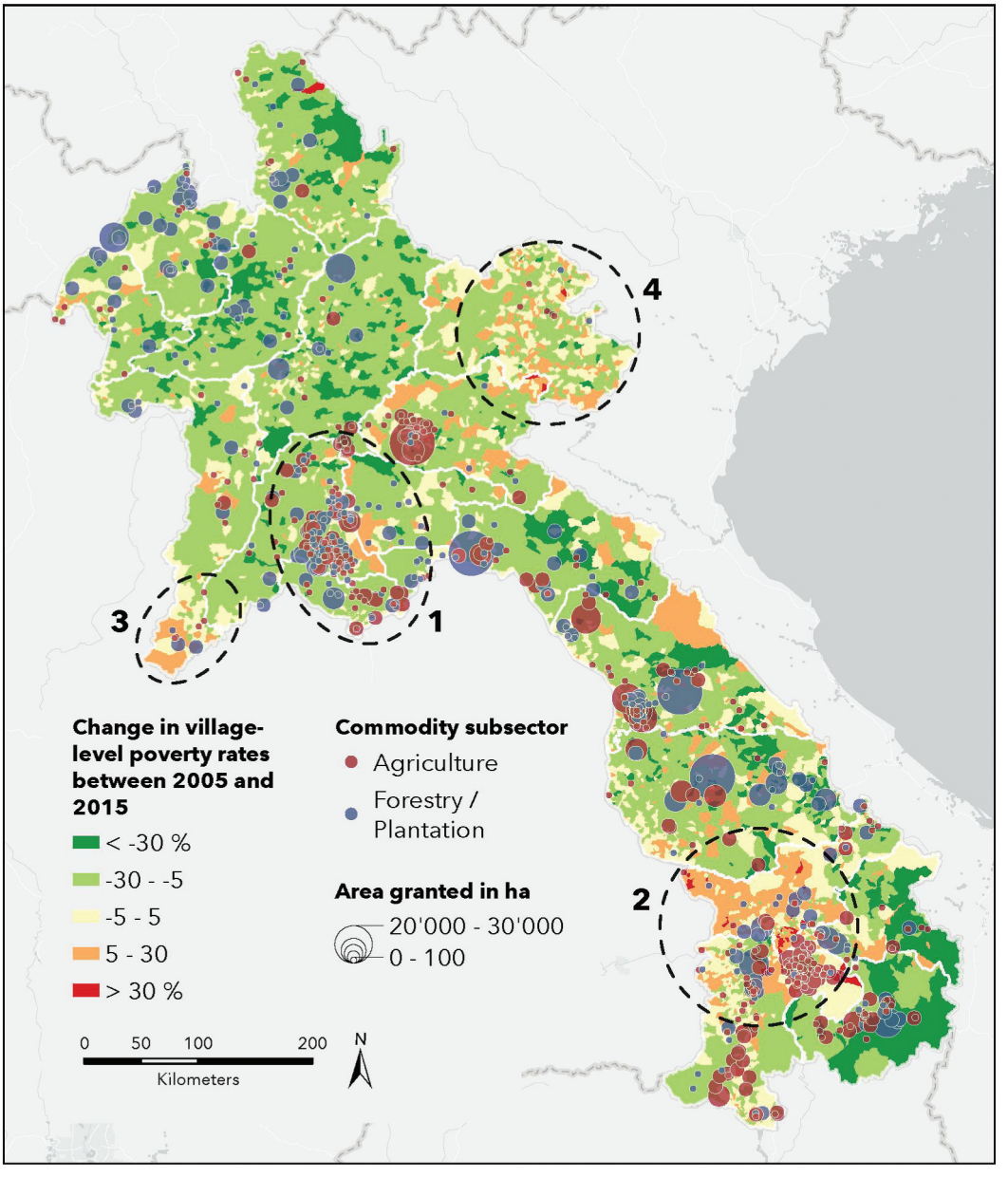

Figure 2. Changes of poverty rates between 2005 and 2015 and land-based investments in agricultural commodities and tree plantations in the Lao PDR (Nanhthavong et al., 2021).

4.2 Various outcomes of land-based investments on poverty trends

In the last two decades, the GoL has promoted commercial investments in land through its 'Turning land into capital' policy (Kenney-Lazar et al., 2018). Today, there are more than 1,000 commercial investments in the agriculture, tree plantations, mining, and hydropower sectors in the country. They cover an area of more than 1,000,000 hectares[3] (roughly 4% of the country's territory) and directly affect people in 20% of the country's villages (Hett et al., 2020). The poverty outcomes of these land-based investments, is highly context dependent, as illustrated in the examples below, which refer to the areas highlighted in Figure 2.

4.2.1 Resilience through diversification

There is a concentration of agricultural investments in the vicinity of Vientiane Capital (area 1 in Figure 2), mainly rubber, grain, flex crops, and livestock. Proximity to transport infrastructure, other services, and centres of political power have attracted investments, mainly by small-scale domestic investors through state land leases and concessions. With some exceptions, poverty has reduced in this area between 2005 and 2015. However, assuming a causal relation between land-based investment and positive poverty trends is too simplistic, since, in such an area, foreign direct investment in land might represent only a small fraction of total investments (at national level in the Lao PDR they represented 12% in 2016). In places where land-based investments had a direct impact, the resilience of local communities is largely due to the fact that smallholder farmers had started diversifying their livelihoods prior to the wave of land-based investments (Epprecht et al., 2018). From mainly subsistence-oriented livelihoods, they went into off-farm employment, trade, or cash crop cultivation, thus reducing their dependency on land and natural resources and being better equipped to compensate for the loss of access to land and resources (Nanhthavong et al., 2021).

4.2.2 Poverty through land dispossession

Area 2 in Figure 2, particularly the Bolaven Plateau, was mainly targeted for coffee plantations owing to its favourable climate, good accessibility, and the GoL's policy on coffee and horticultural production for export (Epprecht et al., 2018; Nanhthavong, 2017). Unlike area 1, poverty incidence increased in many villages in the South, particularly in the provinces of Salavan and Champasak, which also experienced a strong increase of economic inequality (Epprecht et al., 2018). The average poverty on the plateau increased by almost 4% between 2005 and 2015. The underlying cause is land dispossession triggered by the wave of investments (Baird, 2020; Laungaramsri, 2012; Obein, 2007), coupled with high competition for land through smallholder commercialization, large-scale land-based investments, mining, and hydropower (Delang et al., 2013). As a result, there are only limited options for displaced communities to re-establish on vacant land elsewhere in the region. The area also offers fewer employment opportunities outside agriculture compared to the greater Vientiane region. This dynamic has contributed to push peasants, who were living on marginal incomes, back into poverty.

The diversity of poverty outcomes can also be observed at local scale: out of the 109 villages[4] on the Bolaven Plateau, 48 experienced a decrease in poverty while the remaining 61 villages became poorer (Figure 3). The ones worst hit experienced up to 30% increase in poverty incidence among their population from 2005 to 2015. Again, accessibility seems to be an important – though not exclusive – precondition for positive poverty outcomes at the local scale. The villages that were able to benefit from the opportunities offered by the wave of investments are mainly located in the more accessible surroundings of the city of Paksong, while those who suffered from it are – with some exceptions – found in remoter corners of the plateau.

4.2.3 Poverty through resource depletion

The south-western tip of Xayabouri and parts of Huaphan and Xieng Khuang Provinces (areas 3 and 4 in **Figure 2**) experienced an increase of poverty in some villages, while counting only few large-scale

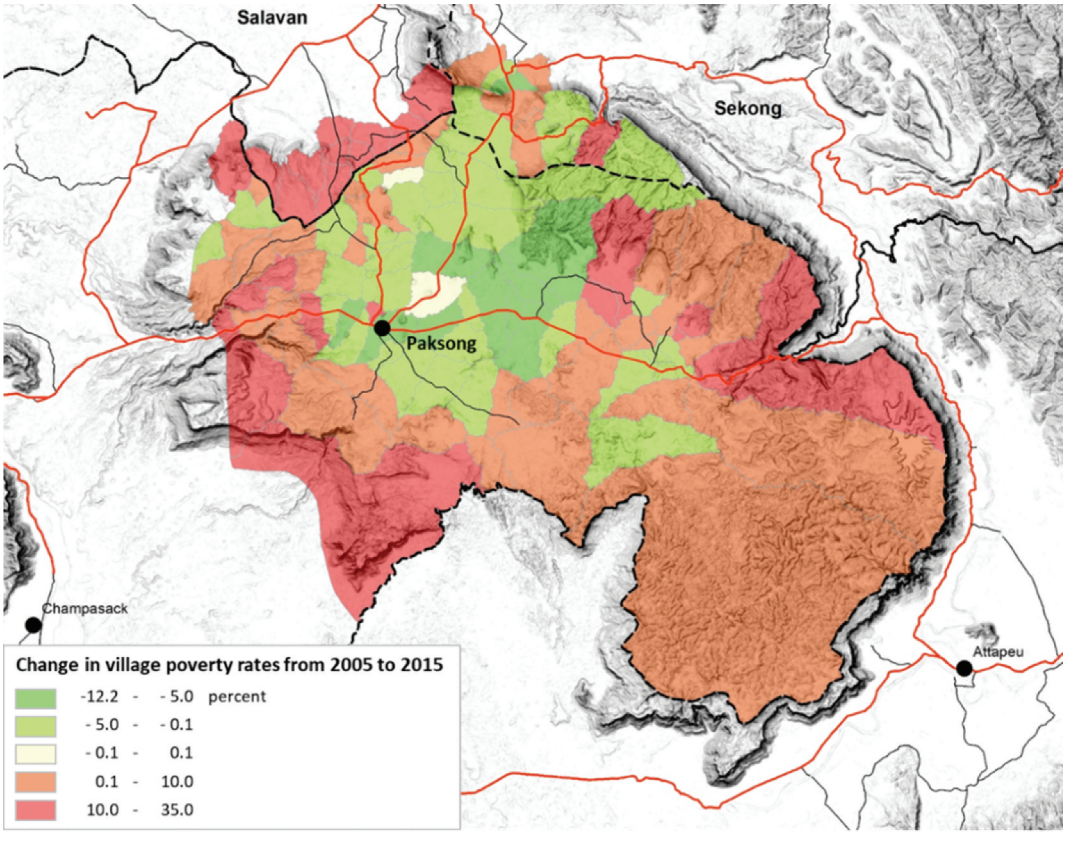

Figure 3. Changes in poverty incidence from 2005 to 2015 in 109 villages on the Bolaven Plateau in southern Laos. Data source: Lao statistics Bureau.

investments. However, due to the proximity of the Thai, Vietnamese, and Chinese markets, cross-border commodity production, often via informal contract farming, has catalysed the shift from subsistence to annual cash crops, mainly maize, in these areas over the past two decades (Castella et al., 2012; Cole & Rigg, 2019; Epprecht et al., 2018). Smallholders who embraced commercial crops enjoyed high returns in the initial years but experienced a dramatic decline of yields because of soil degradation and weed competition. To maintain the same level of returns in later years, they had to farm larger areas, or increase ploughing and the use of fertilizers and herbicides. Many farmers have been pushed into debt and subsequently into poverty by trying to cover these additional inputs with expensive bank and private loans (Castella et al., 2012; Lestrelin & Castella, 2011; Nanhthavong, 2012; Viau et al., 2009; Vientiane Times, 2013)

4.2 Insights for the Mekong Region

The purpose of the above illustration is to emphasize the diverse and complex nature of poverty outcomes resulting from agricultural commercialization. It highlights that establishing a simple and consistent causal relationship between the two is challenging. For example, in Area 1 of Figure 2, the impact of agricultural commercialization on poverty trends appears to be minimal compared to the influence of various other economic developments. However, it is worth noting that the diversification of livelihood strategies in this region likely played a crucial role in mitigating the adverse effects of land dispossession, which was a significant driver of increased poverty on the Bolaven Plateau.

Areas 3 and 4 shed light on the debt trap that accompanied the agrarian transition (Beban & Gironde, 2023, this collection), further illustrating the intricate interplay between agricultural commercialization and poverty. Overall, the illustration underscores the need for a nuanced understanding of the factors affecting poverty outcomes in the context of agricultural commercialization, recognizing that multiple variables and dynamics contribute to the overall picture (Nguyen et al., 2023, this collection).

The illustration focusses on the Lao PDR because of availability of adequate data. While the presented insights cannot be generalized to the entire region, they are representative of certain areas that have been targeted by (trans-) national investments in a similar way, such as Cambodia and Myanmar (Diepart et al., 2023, this collection). Investments in these areas are comparable in terms of contractual arrangement and impacts regarding dispossession of land and local resources, as well as impacts on the local environment (Castella et al., 2012; Hirsch & Scurrah, 2015; Ingalls et al., 2018). Positive wellbeing outcomes also follow similar patterns and vary depending on smallholders' type of commercial engagement and their contractual arrangements (concession, contract farming, or smallholder production), as well as on alternative development opportunities available in the region prior to the onset of land-based investments.

More generally, the example from the Lao PDR shows that a **multi-scale and context sensitive approach** is crucial in understanding positive and negative poverty outcomes of land-based investments. Likewise, it is also important to **look at various poverty dimensions** – such as food security, livelihood resilience to various economic or environmental shocks, and access to resources – as monetary poverty is an insufficient indicator for an accurate assessment of wellbeing (Beban & Gironde, 2023, this collection). For example, a survey conducted between 2014 and 2016 in 294 villages in the Lao PDR (Nanhthavong et al., 2021) showed that non-monetary indicators of wellbeing did not perform as well as monetary indicators in villages affected by land investments.

Since land and resource dependency characterize a large share of the rural population in the Mekong Region, land dispossession and loss of access to forest resources combined with lacking alternative options such as employment generated by land-based investments are key drivers of negative poverty outcomes of commercial agricultural investments (Hunt & Leonard, 2023, this collection; Lewis et al., 2023, this collection) In areas with land loss, both monetary and multidimensional poverty increase. Reduced access to land and other natural resources pushes peasants to depend increasingly on food markets, which results in higher cash expenditures (Friis & Nielsen, 2016; Junquera & Grêt-Regamey, 2020; Nanhthavong et al., 2021, 2022). Income from employment in commercial agriculture is often not sufficient to cover these additional costs because food prices on the market might outweigh households' own production. Seen from a different perspective, multidimensional poverty and land dispossession are both an expression of the simplification of commercial agricultural landscapes, which are fully geared towards the intensification of production and leave little room for those who depend on more diversified livelihoods (Hett et al., 2023, this collection).

5 Agrarian change and gender equity

Access to and control over land is deemed essential to achieve gender equality and empower all women and girls (SDG 5). Yet, it is difficult to provide a thorough overview of progress because corresponding statistics are scarce. Datasets on agriculture and food security are not sex disaggregated (CARE, 2022) and there is a dearth of information on SDG target 5.a (women's equal rights to ownership and control over land and natural resources). Also, there is a lack of indicators on engagement in wage labour, education, access to credit, and participation in market transactions and networks, which have become increasingly important for women's power and status.

A recent review of 126 cases of agricultural land use change in Southeast Asia (Appelt et al., 2022) found that outcomes for gender equality were negative in 62% of cases and had positive outcome in only 15% of cases, even where outcomes for poverty were positive. Because of economic land

concessions in particular, the loss of access to commons and the shift from a shared economy to a cash economy frequently advantage men who have greater access to wage work and more control over income to purchase land (Maharani et al., 2019; McCarthy & Cramb, 2009). Growing rural land scarcity resulting from land enclosures also transforms customary inheritance patterns, which can erode the social and economic status held by women in these communities that previously practiced matrilineal land transmission or held high economic status (FAO, 2019; Frewer, 2017). Even when women do own land, this does not always equal control over land nor control over decisions related to land use (Jacobs, 2009; Park, 2015). Assessing gender relations cannot be limited to the issue of access and control over land; the transformation and division of labour, political engagement and representation, and family food provisioning must be considered.

5.1 Ownership and control over land

All the Mekong countries have legally enshrined gender equality in land in some form, and all have ratified the Convention on the Elimination of Discrimination against Women (CEDAW), which expressly details governments' obligations to eliminate discrimination against women in family and home life, including inheritance rights and the right to own land (Article 16). A search through global development databases and academic literature reveals the complexities of assessing women's land access and control (*Appendix 1*). Overall, data suggest that on a national level, promotion of joint land titles has been widespread in Cambodia and Myanmar, with Lao PDR also showing a significant increase following the promulgation of the 2003 Land Law. In Vietnam, a survey across nine provinces found a low rate of joint ownership, suggesting that the social norm amongst applicants and administrators may still be toward male ownership (Cam et al., 2013). In Thailand, agricultural land is often registered under the name of the household head, and women make up only around 27% of agricultural land holders (OECD, 2019).

Regarding the percentage of men and women with documented evidence of land tenure (SDG indicator 5.a.1), the distance to the SDGs is huge, as noted by Nhat Lam Duyen et al. (2021) in the case of Vietnam where female farm owners only constitute 9% of the total, while women represent 60% of the agricultural labour force. The table in *Appendix 1* reveals the generally unequal state of land ownership across the region.

Furthermore, data on numbers of titles can paint an overly rosy picture of reality (Diepart et al., 2023, this collection). For example, while land titles in women's names are high in Cambodia (at 18% compared with 13% held by men), this is due largely to the high proportion of Female Headed Households (FHH) with no male spouse. Taking land size rather than numbers of titles into account, FHH own only 12.4% of agricultural land (National Institute of Statistics, 2016). Recent changes to land laws may also be retrenching gender equality. Myanmar's 2012 Farmland Law, which includes only one name under land registration, usually defaulting to the male (NAMATI, 2016); and in Lao PDR, joint titling or specifying ownership for women is not addressed in the 2019 Land Law, a noticeable change from the 2003 version (MRLG & LIWG, 2021).

Despite the legal guarantees of gender equality in property law, exclusion persists, enacted through multiple institutions and deeply rooted gender norms that view women as upholders of family and community harmony. This is exacerbated in the case of less educated women and those from ethnic minority groups (Cam et al., 2013; NAMATI, 2016). Customary law still influences decision-making in rural areas in ways that may advantage or disadvantage women's access to land, property, and inheritance. Given men's greater political power and mobility, mediation of disputes over land also tends to favour men over women (Menon et al., 2017). For example, in Thailand, many decisions in rural communities regarding the distribution and use of land continue to be made based on customary practices that can severely disadvantage women, given patriarchal social norms (FAO, 2020). The process of mapping and registering land can put women, ethnic minority groups and those without financial and political resources at risk of eviction when

occupancy is opposed by powerful interests, and titling campaigns have also been linked to the enclosure of communal land (Beban, 2021).

Beyond individual land holdings, the loss of access to communal forests due to expansion of large-scale land concessions is particularly detrimental for rural women, who are often responsible for collecting forest products from such areas and thus have to search longer and harder to collect the same amount as before (Daley et al., 2013).

5.2 Gender inequality in labour

Rural women in the Mekong Region continue to assume the bulk of unpaid care and domestic work while taking on new roles in transitional economies. Firstly, the time women and men spend on unpaid work is highly unequal in all Mekong countries: for example, in Cambodia, women spend ten times more time than men on unpaid care and domestic work, in Lao PDR 4.2 times, in Thailand 3.5 times, and in Vietnam 1.5 times (OECD, 2021). Women also perform higher rates of unpaid family labour on farms than men, as men are more likely to gain wage work and to migrate for employment and education opportunities, leaving women and older people to tend family farms (Mercado et al., 2020). Women's ability to work on the farm is constrained by the time they spend on caring tasks, which is not adequately recognized nor valued. Therefore, women continue to be regarded as secondary farm labour despite their principal contributions, while men are considered 'farmers' and thus key decision makers in agriculture, as shown by studies from Myanmar and Vietnam (Faxon, 2017; Nguyen et al., 2019). Moreover, women's economic participation is confined to the lower levels of agricultural value chains, with research on rice value chains in the Mekong finding that 80% of traders and collectors are middle-aged men (Chen, 2013).

Women are also at a disadvantage vis-à-vis men when it comes to increased opportunities for wage labour (Nguyen et al., 2023, this collection). Employers consider men to have greater physical strength and prefer workers with their own machinery, which are mostly used by men. Women are further discriminated when they are mothers of young children (Gironde et al., 2021). It is also in the agricultural sector where the highest wage gap is found: women earn 75% of a male wage on average in the Mekong Region (NAMATI, 2016; UNDP, 2021). Underpinning these inequalities are social norms that continue to position women as homemakers and men as the appropriate breadwinners. In Thailand, for example, in 2018, 73% of the population declared that children suffer when a mother works for pay outside of the home (OECD, 2021), and women's intense care responsibilities leaves them less time for engaging in paid work or leisure (Yokying et al., 2016).

While many of these labour-related gender inequalities are long-standing, the separation of households across rural-urban spheres that underpin agrarian transitions, the increasing squeeze on rural families due to enclosure of commons, reduction of farming landholdings, rising debt levels and uncertain market and weather fluctuations is putting pressure on rural families to find off-farm wage work in order to cover expenses (Beban & Gironde, 2023, this collection; Beban & Bourke Martignoni, 2021). Despite the above-mentioned barriers, then, women's engagement in wage labour is nevertheless on the rise out of necessity (Frewer, 2017), a trend which may contribute to providing women some autonomy (Gironde et al., 2021) and making gender norms more 'fluid' (Derks, 2008), but is also intensifying women's labour burden (Beban & Gironde, 2023, this collection).

5.3 Gender inequality in power and responsibility

In many agrarian governance structures, women have little or no leadership positions and minimal participation, as exemplified by community forestry management (Gilmour, 2016; Thuy et al., 2012), while many laws simply do not address gender aspects in the makeup of local or village level institutions. At higher levels, the gender gulf in political representation remains, despite efforts to increase representation of women: seats held by women in national parliament varies from one quarter in Laos (27.5%) and Vietnam (26.8%) down to one sixth in Thailand (16.8%) and Myanmar (15.8%).

Women across the region have been active in advocacy over land rights and are often at the frontlines of protests (Beban & Bourke Martignoni, 2021; Hennings, 2019; Park, 2019). However, traditional patriarchal structures of authority prevail when formal governance structures are reinstated following land conflicts (Lamb et al., 2017). In cases where initiatives have been taken to enable women's political participation, as in Laos and Vietnam through the national women's unions, this translates into a depoliticised participation that rarely challenges state practices (Faming, 2018; Waibel & Glück, 2013). Furthermore, women affairs ministries and administrations often lack financial resources to enact political change (Prügl & Joshi, 2021).

These national-level political inequalities in power and responsibility are also mirrored at the household level, as illustrated by the case of food provisioning for the household. Women are generally responsible for feeding the family, a responsibility that has provided some status (Mi Young Park & Maffii, 2017) and which can be interpreted as power. However, this power is relative as women are partly dependent on men to provide them with money, and because men generally earn more cash than women. Moreover, it is expected from women that they make good use of money and do not waste it, whereas such behaviour is tolerated for men when they spend money for drinking or eating out (Gironde et al., 2021).

More importantly, women suffer stress from not having enough money to buy food of adequate volume and quality (Gironde et al., 2021). They also lack the time to collect food from the forest, which have reduced in size and quality due to economic land concessions. When it comes to daily food provision, it is women who are responsible for borrowing money from other families and purchasing on credit from shop-owners (Gironde et al., 2021), which provides them some scope for decision-making. Women may enjoy recognition for their ability to get by on little money and little time, but they also bear the daily stress that comes with it.

In sum, despite laws promoting better gender equality and women's rights related to land, there is mounting evidence that contemporary processes of agrarian change are overall negative for gender equality in the region. Women bear a high 'triple burden' of unpaid care work, unpaid family farm work, and wage work, which limits their potential to benefit from agricultural commercialisation. And the responsibilities they have with regards to family care cannot be interpreted as them having power.

6 The agrarian transition and transformations of forest landscapes

The agrarian transition in the Mekong Region is associated with significant environmental transformations that have a lasting impact on its rich and highly diverse ecological systems (Hett et al., 2023, this collection). The sustainable development goal relating to these issues (SDG 15 – life on land) is wide-ranging. In this article, we focus on target 15.1 aligned with the conservation, restoration, and sustainable use of terrestrial (and inland freshwater) ecosystems and target 15.2, which aims to promote the implementation of sustainable management of all types of forests.

6.1 Loss of primary forest (2001–2017)

The rate of deforestation has been unprecedented over the last two decades in the Mekong Region (Figure 4). Between 2001 and 2017, the region lost 6.2 million hectares of its primary forests, equivalent to 10.8% percent of the total land area (Potapov et al., 2019). The rates of primary forest reduction were different among the countries. Thailand lost only 4.1% of its primary forests, Cambodia lost almost 28.6%. These results offer a systematic country breakdown, which are fully consistent with aggregate results presented in Potapov et al. (2019). These authors also suggest that forest dynamics include net gain, particularly in Vietnam and Thailand; but these gains are far outweighed by forest loss.

The reduction of primary forest has resulted in a significant loss of ecosystem services and biodiversity, the fragmentation and degradation of natural habitats, but also a spectacular re-duction of terrestrial and wetland resource systems that are central in the life of forest-dependent

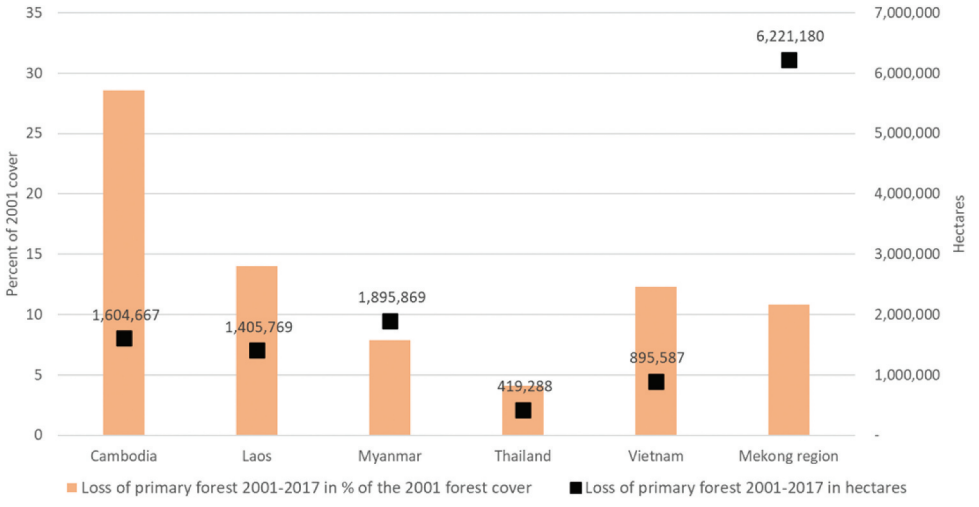

Figure 4. Loss of primary forest in the countries of the Mekong region (2001–2017). Sources: Global land analysis and discovery lab (GLAD): https://glad.umd.edu/dataset/mekong.

populations (Diepart et al., 2023, this collection; Hett et al., 2023, this collection). It also increases the likelihood of land degradation, notably through soil erosion and depletion of soil organic carbon (Pacheco et al., 2021; Tenneson et al., 2021).

Forest loss and forest degradation feature centrally in the agrarian transition because the key driver of deforestation across the region is the expansion of agricultural areas. Forest clearance gives way to agriculture to meet the need for land of the growing rural population and the appetite of agribusiness actors investing in crop plantations (Hurni & Fox, 2018; Hurni et al., 2017). Infrastructure projects (road construction, dams, special economic zones) act as secondary drivers of deforestation. They are instrumental in opening agricultural frontiers and paving the way for the expansion of boom crops (Castella & Phaipasith, 2021; Kong et al., 2019)

As in the case of poverty, it is necessary to zoom into smaller areas and to combine different layers of information to unravel some of the intersecting dynamics between agrarian transition, loss of forest cover and associated loss of ecosystem services and biodiversity. We do this by taking the example of forest loss in Cambodia between 2000 and 2017.

6.2 Commodity-driven deforestation in Cambodia

Deforestation in Cambodia is mainly an outcome of modernization policies that promote agricultural commercialization to boost the export of commodity crops. It is further facilitated by Cambodia's increasing integration in regional and global agricultural commodity chains. Such commodity-driven deforestation takes shape through different processes, some of which we detail below.

The government directly encouraged a movement of forest pioneering into the upland region by granting large-scale concessions to domestic and international companies for agro-industrial development in rubber, cashew, sugar cane, cassava, pulpwood, etc (Diepart & Middleton, 2022). In conjunction with the agricultural commodity price spikes of 2007–8, this policy was a powerful incentive for regional investors to acquire a significant chunk of land (Figure 5, frame A). However, even if the land to be developed was deemed vacant by the government, it included significant areas already under usage by smallholders and their communities for rotational or permanent agriculture or as a source of non – timber forest products (ibid). The conflicts resulting from these overlapping land claims have pushed the government to issue a moratorium on new concessions in 2012 (ibid).

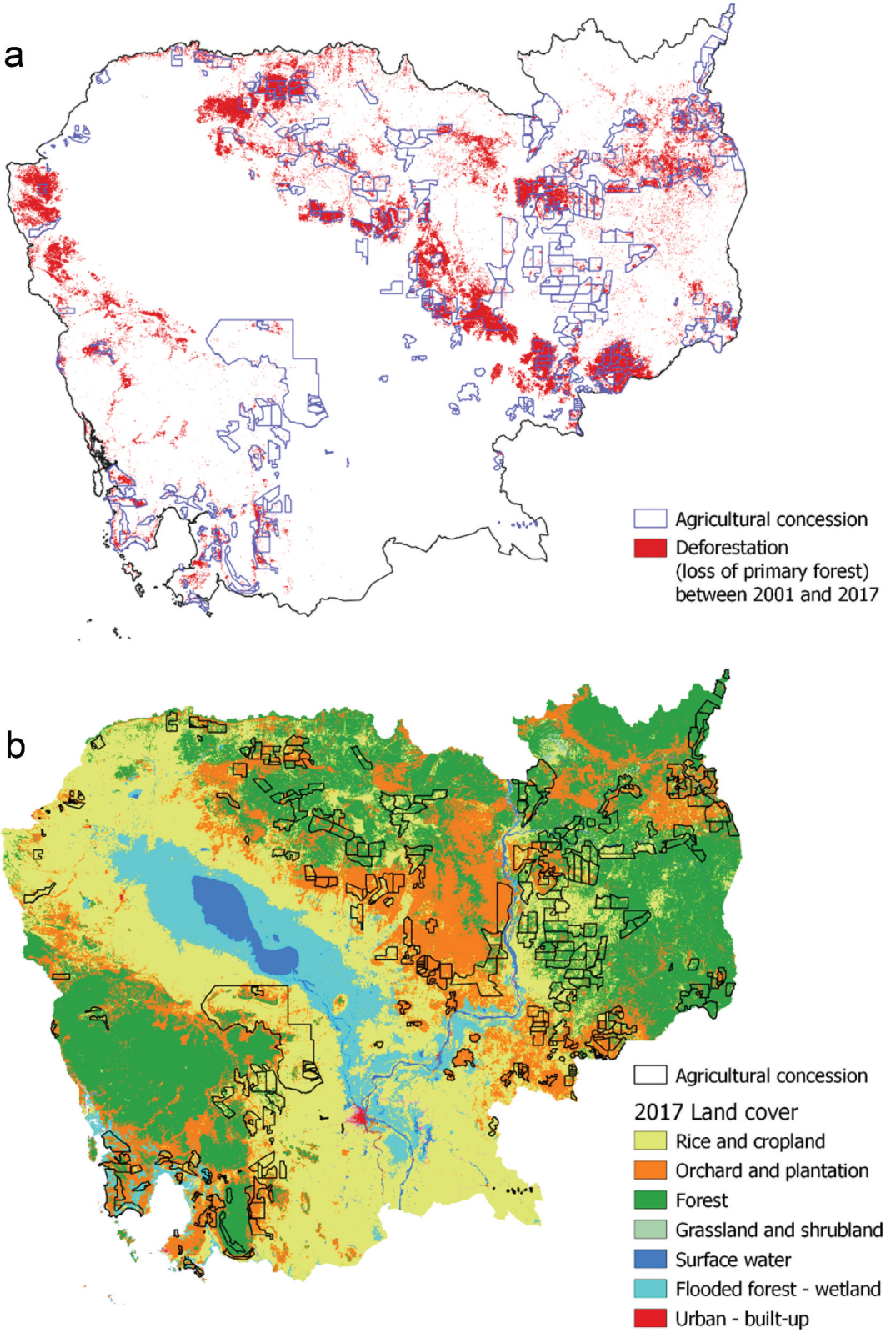

Figure 5. Deforestation (loss of primary forest) in Cambodia between 2001–2017. Sources: (1) land use 2017: SERVIR www.landcovermapping.org/en/landcover (2) deforestation: Potapov et al. (2019). (3) agro-industrial concessions (as of 2012): www.Licadho-cambodia.Org/ Mapping and data computation by the authors.

Since then, the rate of deforestation inside concessions has declined, but overall, concessions have been important drivers of deforestation in Cambodia (Davis et al., 2015).

Deforestation is also driven by migrant families. The combination of land poverty in densely populated lowlands and the uneven transition of the economy from agriculture to industries and services pushes lowland farming households to migrate to upland areas in search of new agricultural landholding allowing them to make a living (Diepart & Ngin, 2020). The increase in boom crops has played an important role in incentivizing these migrations processes. The reduction of land available to farmers in areas where concessions have been granted, combined with the expropriation of smallholder farmers, has pushed the latter to migrate and clear land for commercial or subsistence agriculture in areas with available land but with less secure land tenure. As a result, a considerable population is now living on land acquired after 2001, on which they have virtually no land tenure security under the 2001 Land Law.

Altogether, commodity-driven deforestation accounted for 76% of deforestation in Cambodia between 2001 and 2017 (Figure 5). However, our data computation shows that deforestation outside agro-industrial concession areas accounts for 50% of the total deforestation, i.e. nearly twice the deforestation inside the concessions (26% of total deforestation). These results are very consistent with the analysis conducted by Hayward and Diepart (2021). In other words, it would be misleading to attribute deforestation entirely to policies promoting large-scale agricultural development. The situation is much more complex, a fact that must be taken into consideration by researchers, policy makers and practitioners alike, who often produce narratives of the agrarian transition that are too narrow and sectoral, and therefore fail to propose sustainable solutions.

In sum, addressing deforestation in Cambodia and elsewhere in the Mekong Region requires variegated approaches wherein issues of land tenure security should be centre-stage to recognize customary tenure arrangements and the livelihoods of forest-dependant people who are losing access to land and forests and thus displacing deforestation issues to other areas. However, as large-scale commercial agriculture is often not possible without causing land dispossession of smallholders, who migrate to clear forest elsewhere in search of new agricultural land holdings, the large-scale agricultural development model needs to be reconsidered in the first place. Sustainable alternatives are needed that provide greater diversity of ecosystem services and livelihood opportunities within sustainable and multi-functional landscapes.

7 Pathways towards sustainable agrarian transition

The three illustrations presented above serve as focal points for the discussions in the framing papers of the three thematic sections in the current special issue on '*Agrarian Change in the Mekong Region: Pathways towards Sustainable Land Systems*'. These framing papers outline potential paths towards a more sustainable agrarian transition, or at least of certain processes that constitute this transition – within the Mekong Region. Overall, they underscore the importance of comprehending the nuances of agrarian change and its implications on sustainable land systems in the Mekong Region. By delving into these insights, we can develop informed strategies to foster a more sustainable agrarian transition and address the critical issues emerging from it. Here, we offer a concise summary of the key insights derived from these illustrations:

7.1 Equitable commodity production for rural development and poverty reduction

Policy objectives towards commercial, export-oriented production of agricultural commodities lie at the heart of the contemporary agrarian transition in the Mekong Region and in other parts of Southeast Asia. Domestic policies have enabled the reach of the private sector into once remote areas, engaging smallholder communities in commercial production for growing urban populations both at home and abroad. These trends have in turn contributed to substantial economic growth and poverty reduction, but long-term negative impacts have emerged and alarmed national and

sub-national governments, as well as development partners in the region. Research on and documentation of these impacts have increased awareness among these actors about the need to move beyond a narrow focus on economic growth targets, to prioritise the inclusion of vulnerable communities, and to reduce negative impacts, whether they are due to unequal sharing of benefits or the degrading ecological impacts of monocultures. We identify four complementary lines of action to foster more equitable commodity production for rural development and poverty reduction:

(1) **Securing land tenure rights** is a fundamental policy requirement to foster equitable agro-commodity production that includes local management of land and forest resources, as well as investment by and for smallholder farmers in more sustainable and diversified practices (Diepart et al., 2023; Hunt & Leonard, 2023; Lewis et al., 2023, all three in this collection).
(2) **Targeted support** for vulnerable groups and collective platforms such as farmer networks and cooperatives can help to reverse the poverty-inducing consequences of land-based investments and rapid uptake of cash crops in the context of weak governance and legal enforcement (Do et al., 2022, this collection).
(3) **Regulation of land-based agro-investments** should be strengthened, and their enforcement monitored and secured to promote responsible and inclusive land-based investments that do not undermine long-term sustainability of agri-food systems (To, 2023, this collection).
(4) **Differentiated assessments** of the impacts of agricultural commercialization processes, based on varied evidence at multiple scales are extremely important in understanding the competing interests vested in agricultural commercialization processes and to understand their impacts (Nguyen et al., 2023, this collection). This includes the move away from monetary to multidimensional, gendered wellbeing outcomes, especially in terms of access to land and resources.

7.2 Recognition and formalization of customary tenure

Customary land tenure arrangements of Indigenous Peoples and local communities are varied and complex, having evolved in a wide range of local and national contexts and aiming to address several development and conservation goals such as livelihood improvement and sustainable management of natural resources. Their central force is that they are embedded, flexible, locally accountable, and responsive to the changing relationships among and between people and the environment. While reckoning that they represent a crucial ingredient and pathways for shaping a more sustainable agrarian transition, we identify the following three key elements towards recognizing and formalizing customary tenure arrangements (Diepart et al., 2023, this collection):

(1) **Embrace complexity**: Recognizing customary tenure arrangements, which is a moral imperative, requires institutions of the state to understand, consider, and valorise their complexity. Formalization that introduces too many simplifications leads to changes in the very nature of customary tenure systems and undermines their positive attributes. Simplification includes efforts to identify bounded or 'traditional' communities (whereas heterogeneity and migration are increasingly the norm), establishing boundaries and rules that don't overlap with customary lands or serve the interests of communities, and failing to consider that land uses and livelihoods are in flux.
(2) **Ensure transparent and 'light' formalization processes**: At the same time, formalization of community land rights often leads to bureaucratization and the intensification of rules, procedures, and conditions, which are often imposed by the state and difficult to see through for local communities. Further, formalization may also increase land-related tax burdens on rural populations. Thus, transparency, simplicity, and affordability of such processes are a key aspect towards their successful implementation.

(3) **Empower communities**: Formalization should aim to give communities more decision-making power and strengthen their rights to manage their land and resources (Tran et al., 2022, this collection). These rights need to be backed by law and accountability mechanisms to ensure they are upheld, including processes for addressing grievances and conflict resolution mechanisms. With active involvement from communities and assistance from other actors, the state needs to create an enabling environment to ensure that local customary tenure institutions are protected, but also downwardly accountable so that decisions are inclusive, gender sensitive and pro-poor (Hunt & Leonard, 2023; Lewis et al., 2023, both in this collection).

In conclusion, there is no easy technical fix to recognition or formalization. Recognition inevitably needs to be responsive to different contexts which means taking a variety of approaches. In the Mekong Region, where customary tenure is not generally well recognized or protected, strengthening legal frameworks is a priority.

7.3 Environmentally positive agricultural landscapes

The transformation of historic multifunctional landscapes through agricultural commercialization and the intensification of large monocultures has had severe environmental impacts in the Mekong Region, including loss of habitats, uniformization of landscapes with dwindling biodiversity, degradation of soils and vegetation, etc. These negative impacts need to be addressed by fostering environmentally positive agricultural landscapes as an integral part of the agrarian transition (Hett et al., 2023, this collection). The following approaches could contribute to that goal:

(1) **Build on and improve existing systems**: Approaches that embrace local crop-fallow-forests systems, their agrobiodiversity, and local knowledge of indigenous communities need to be factored into the reflections and development plans of future agricultural production and food systems. Such approaches build on existing genetic resources and knowledge in ways that may be more equitable and enhance, rather than erode, the ecosystem services on which local people depend.
(2) **Holistic approaches**: A shift is required from disciplinary perspectives focusing narrowly on either productivity or economic viability as the only measures of success. Holistic approaches that integrate complementary solutions at farm, landscape, value-chain, and policy level, are more suitable to foster diversification and to achieve economic, social and environmental sustainability at landscape level (Tim et al., 2023, this collection).
(3) **Gender-sensitive approaches**: Whichever solutions are being used, women need to be included in their selection and implementation right from the start. Schemes designed specifically for women and gender differentiated design are important not only for the success of environmentally positive agricultural landscapes, but also to avoid reproducing patriarchal power dynamics (Hett et al., 2023, this collection).
(4) **Out-scaling**: Research and practice need to invest in developing out-scaling of the above-mentioned approaches. This includes amongst other activities the co-development of new methods to perform out-scaling in an efficient and durable manner; reform of national strategies on the out-scaling of sustainable agricultural practices (Tim et al., 2023, this collection).

As mentioned earlier, the above outlined pathways are addressed in more details in three framing papers of the special issue on the 'Agrarian Change in the Mekong Region: Pathways towards Sustainable Land Systems' (Nguyen et al., 2023; Diepart et al., 2023; Hett et al., 2023, all three in this collection).

Notes

1. The exact names of SDGs and of their targets can be found on https://sdgs.un.org/goals.
2. World Development Indicators: https://databank.worldbank.org/indicator
3. This does not include the investments in mineral prospecting and exploration that cover an area of nearly 11 million hectares (Hett et al., 2020)
4. Those having major part of their territory above 800 m.a.s.l. and therefore falling into the agroclimatic zone targeted by investors.

Acknowledgement

This work was supported by the Mekong Region Land Governance project (MRLG). MRLG is a project of the Government of Switzerland, through the Swiss Agency for Development and Cooperation (SDC), with co-financing from the Government of Germany and the Government of Luxembourg.

Disclosure statement

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

Funding

This work was supported by the Direktion für Entwicklung und Zusammenarbeit; German Cooperation; LuxDev.

ORCID

Albrecht Ehrensperger http://orcid.org/0000-0002-2880-4049
Alice Beban http://orcid.org/0000-0001-9618-9669
Jean-Christophe Diepart http://orcid.org/0000-0001-8979-0632
Anh-Thu Nguyen http://orcid.org/0000-0003-1606-540X
Cornelia Hett http://orcid.org/0000-0001-5828-7794

References

Appelt, J.L., Garcia Rojas, D.C., Verburg, P.H., & van Vliet, J. (2022). Socioeconomic outcomes of agricultural land use change in Southeast Asia. *Ambio*, *51*(5), 1094–1109. https://doi.org/10.1007/s13280-022-01712-4

Baird, I.G. (2020). Problems for the plantations: Challenges for large-scale land concessions in Laos and Cambodia. *Journal of Agrarian Change*, *20*(3), 387–407. https://doi.org/10.1111/joac.12355

Beban, A. (2021). *Unwritten rule: State-making through land reform in Cambodia*. Cornell University Press.

Beban, A., & Bourke Martignoni, J. (2021). "Now the forest is over": Transforming the commons and remaking gender in Cambodia's uplands. *Frontiers in Sustainable Food Systems*, 5. https://doi.org/10.3389/fsufs.2021.700990 5

Beban, A., & Gironde, C. (2023). Surviving cassava: Smallholder farmer strategies for coping with market volatility in Cambodia. *Journal of Land Use Science*, *18*(1), 109–127. https://doi.org/10.1080/1747423X.2023.2190744

Cam, H., Sang, L.T., Cham, N.T.P., Lan, N.T.P., Tran, N.T., & Long, V.T. (2013). *The women's access to land in contemporary Vietnam*. United Nations Development Programme.

CARE. (2022). *Final-Version-Food-Security-And-Gender-Equality.Pdf*. https://www.care.org/wp-content/uploads/2022/08/Final-Version-Food-Security-and-Gender-Equality.pdf

Castella, J.-C., Jobard, E., Lestrelin, G., Nanthavong, K., & Lienhard, P. (2012). Maize expansion in Xieng Khouang province, Laos: What prospects for conservation agriculture ? 304.

Castella, J.-C., Lestrelin, G., Hett, C., Bourgoin, J., Fitriana, Y.R., Heinimann, A., & Pfund, J.-L. (2012). Effects of landscape segregation on livelihood vulnerability: Moving from extensive shifting cultivation to Rotational agriculture and natural forests in northern Laos. *Human Ecology*, *41*(1), 63–76. https://doi.org/10.1007/s10745-012-9538-8

Castella, J.-C., & Phaipasith, S. (2021). Rural roads are paving the way for land-use intensification in the uplands of Laos. *Land*, *10*(3), 1–19. https://doi.org/10.3390/land10030330

Chen, K.Z. (2013). Rice value chains in China, India, Lao PDR, and Viet Nam: 2012 survey results, interpretations, and implications for policy and investment. *Asian Development Bank*. file:///C:/Users/aehrensp/Downloads/p15738coll2_128018.pdf

Cole, R., & Rigg, J. (2019). Lao peasants on the move: Pathways of agrarian change in Laos. *The Australian Journal of Anthropology*, *30*(2), 160–180. https://doi.org/10.1111/taja.12312

Daley, E., Osorio, M., & Park, C. (2013). The gender and equity implications of land-related investments on land access and labour and income-generating opportunities. *A Case Study of Selected Agricultural Investments in Lao PDR*, i–vi, 1–67.

Davis, K.F., Yu, K., Rulli, M.C., Pichdara, L., & D'Odorico, P. (2015). Accelerated deforestation driven by large-scale land acquisitions in Cambodia. *Nature Geoscience*, *8*(10), 772–775. https://doi.org/10.1038/ngeo2540

De Koninck, R. (2004). The challenges of the agrarian transition in Southeast Asia. *Labour, Capital and Society/Travail, capital et société*, *37*(1/2), 285–288.

Delang, C.O., Toro, M., & Charlet-Phommachanh, M. (2013). Coffee, mines and dams: Conflicts over land in the Bolaven Plateau, southern Lao PDR. *The Geographical Journal*, *179*(2), 150–164. https://doi.org/10.1111/j.1475-4959.2012.00481.x

Dell'angelo, J. D'Odorico, P. & Rulli, M.C. (2017). Threats to sustainable development posed by land and water grabbing. *Current Opinion in Environmental Sustainability*, *26–27*, 120–128.

Derks, A. (2008). *Khmer women on the move: Exploring work and life in urban Cambodia*. UH Press. https://uhpress.hawaii.edu/title/khmer-women-on-the-move-exploring-work-and-life-in-urban-cambodia/

Diepart, J.C., & Middleton, C. (2022) Land commodification, state formation, and agrarian capitalism: The political economy of land governance in Cambodia. In P. Hirsch, K.M. Woods, N. Scurrah, & M. Dwyer (Eds.), *Turning land into capital. Development and Dispossession in the Mekong Region*. University of Washington Press. www.csds-chula.org/publications/2022/9/9/book-chapter-land-commodification-state-formation-and-agrarian-capitalism-the-political-economy-of-land-governance-in-cambodia

Diepart, J.-C., & Ngin, C. (2020). Internal migration in Cambodia. In M. Bell, A. Bernhard, E. Charles-Edwards, & Y. Zhu (Eds.), *Internal migration in the countries of Asia. A cross-national comparison* (pp. 137–162). Springer.

Diepart, J.-C., Scurrah, N., Beban, A., Gironde, C., & Campbell, N.Y. (2023). The recognition and formalization of customary tenure in the forest landscapes of the Mekong region: A Polanyian perspective. *Journal of Land Use Science*, *18*(1), 211–226. https://doi.org/10.1080/1747423X.2023.2206814

Do, T.H., Patton, I., & Catacutan, D. (2022). Towards pro-poor and voluntary PES: Assessment of willingness to pay and willingness to accept PES contract in central Vietnam. *Journal of Land Use Science*, *17*(1), 505–522. https://doi.org/10.1080/1747423X.2022.2127953

Epprecht, M., Bosoni, N., Ehrensperger, A., Nagasawa, H., Lu, J., Studer, D., Vollmar, P., & Sisoulath, V. (2018). *Socio-economic atlas of the Lao PDR. Patterns and trends from 2005 to 2015*. Centre for Development and Environment (CDE), University of Bern.

Epprecht, M., Minot, N., Dewina, R., Messerli , P., Heinimann, A. (2008). The Geography of poverty and inequality in the Lao PDR. In *Swiss national centre of competence in research north-south*. University of Bern, International Food Policy Research Institute (IFPRI), Bern: Geographica Bernensia.

Epprecht, M., Weber, A.-K., Bernhard, R., Keoka, K., Saphangthong, T., Manivong, V., Ingxay, P., Vongsamphanh, P., Bosoni, N., Hanephom, S., Vanmeexai, P., Kaungbounhieng, A., Sisouvan, H., Khounthikoumman, S., Xaichounorxoa, P., Ingalls, M., Nanhthavong, V., Lu, J., Norasingh, I. … Breu, T. (2018). *Atlas of agriculture in the Lao PDR: Patterns and trends between 1999 & 2011*. Centre for Development and Environment (CDE), University of Bern. and Ministry of Agriculture and Forestry (MAF), Lao PDR, with Bern Open Publishing (BOP). https://boris.unibe.ch/116598/

Faming, M. (2018). Big (wo)man politics: Gender equality in Laos? *Asian Anthropology*, *17*(2), 116–134. https://doi.org/10.1080/1683478X.2018.1463595

FAO. (2019). *Women's land rights and agrarian change: Evidence from indigenous communities in Cambodia* (Vols. i–x).

FAO. (2020). *Gender and Land Rights Database: Thailand, Gender and Land Rights Database* [Data set]. http://www.fao.org/gender-landrights-database/country-profiles/countries-list/customary-law/en/?country_iso3=THA

Faxon, H.O. (2017). In the law & on the land: Finding the female farmer in Myanmar's national land use policy. *The Journal of Peasant Studies*, *44*(6), 1197–1214. https://doi.org/10.1080/03066150.2017.1324424

Frewer, T. (2017). The gender agenda: NGOs and capitalist relations in highland Cambodia. *Critical Asian Studies*, *49*(2), 163–186. https://doi.org/10.1080/14672715.2017.1300861

Friis, C., & Nielsen, J.Ø. (2016). Small-scale land acquisitions, large-scale implications: Exploring the case of Chinese banana investments in northern Laos. *Land Use Policy*, *57*, 117–129. https://doi.org/10.1016/j.landusepol.2016.05.028

Gilmour, D. (2016). *Forty years of community-based forestry. A review of its extent and effectiveness*. Food and Agriculture Organization of the United Nations.

Gironde, C., Reysoo, F., Torrico Ramirez, A., & Suon, S. (2021). No cash, no food. Gendered reorganization of livelihoods and food security in Cambodia. *The Journal of Peasant Studies*, *48*(7), 1485–1506. https://doi.org/10.1080/03066150.2021.1960826

GRAIN. (2008). *Seized: The 2008 Landgrab for Food and Financial Security*. https://grain.org/article/entries/93-seized-the-2008-landgrab-for-food-and-financial-security

Hayward, D., & Diepart, J.-C. (2021). *Deforestation in Cambodia. A story of land concessions, migration and resource exploitation*.

Hennings, A. (2019). The dark underbelly of land struggles: The instrumentalization of female activism and emotional resistance in Cambodia. *Critical Asian Studies*, *51*(1), 103–119. https://doi.org/10.1080/14672715.2018.1547881

Hett, C., Aye, Z.C., Gironde, C., Beban, A., Castella, J.-C., Bernhard, R., & Ehrensperger, A. (2023). Agroecological initiatives in the Mekong region: A systematic literature review and mapping reveals their implications for transitioning to sustainable food systems. *Journal of Land Use Science*, *18*(1), 334–355. https://doi.org/10.1080/1747423X.2023.2248980

Hett, C., Nanhthavong, V., Hanephom, S., Phommachanh, A., Sidavong, B., Phouangphet, K., Lu, J., Shattuck, A., Ingalls, M., Bernhard, R., Phathitmixay, S., Phomphakdy, C., Heinimann, A., & Epprecht, M. (2020). Land leases and concessions in the Lao PDR: A characterization of investments in land and their impacts, based on field data of 2014-2017. i–xviii, 1–130.

Hett, C., Nanhthavong, V., Kenney-Lazar, M., Phouangphet, K., & Hanephom, S. (2018). Assessing land investment quality: A methodology to assess the quality of land concessions and leases in the Lao PDR. *i–viii*, 1–26.

Hirsch, P., Mellac, M., & Scurrah, N. (2016). The political economy of land governance in Viet Nam. *24*.

Hirsch, P., & Scurrah, N. (2015). The political economy of land governance in the Mekong region. 52.

Hirsch, P., Woods, K.M., Scurrah, N., & Dwyer, M.B. (2022). *Turning land into capital: Development and dispossession in the Mekong region*. University of Washington Press.

Hunt, G., & Leonard, S.N. (2023). The struggle for forest tenure in Myanmar: Voices from the 2019 forest rules consultation. *Journal of Land Use Science*, *18*(1), 296–314. https://doi.org/10.1080/1747423X.2023.2241456

Hurni, K., & Fox, J. (2018). The expansion of tree-based boom crops in mainland Southeast Asia: 2001 to 2014. *Journal of Land Use Science*, *13*(1–2), 198–219. https://doi.org/10.1080/1747423X.2018.1499830

Hurni, K., Schneider, A., Heinimann, A., Nong, D.H., & Fox, J. (2017). Mapping the expansion of boom crops in mainland Southeast Asia using dense time stacks of landsat data. *Remote Sensing*, *9*(4), 320. Article 4. https://doi.org/10.3390/rs9040320

Ingalls, M.L., Diepart, J.-C., Hayward, D., Neil, T., Phomphakdy, C., Bernhard, R., Fogarizzu, S., Epprecht, M., Nanhthavong, V., Vo, D.H., Saphangthong, T., Inthavong, C., Hett, C., & Tagliarino, N. (2018). *State of land in the Mekong region* M. L. Ingalls & J.-C. Diepart (Eds.). Centre for Development and Environment (CDE), University of Bern. and Mekong Region Land Governance (MRLG) www.mrlg.org/publications/state-of-land-in-the-mekong-region-2/

Jacobs, S. (2009). Gender and land reforms: Comparative perspectives. *Geography Compass*, *3*(5), 1675–1687. https://doi.org/10.1111/j.1749-8198.2009.00257.x

Jansen, L.J.M., & Kalas, P.P. (2023). Improving governance of tenure in policy and practice: Agrarian and environmental transition in the Mekong region and its impacts on sustainability analyzed through the 'tenure-scape' approach. *Sustainability*, *15*(3), 1773. Article 3. https://doi.org/10.3390/su15031773

Junquera, V., & Grêt-Regamey, A. (2020). Assessing livelihood vulnerability using a Bayesian network: A case study in northern laos. *Ecology and Society*, *25*(4), art38. https://doi.org/10.5751/ES-12049-250438

Kenney-Lazar, M., Dwyer, M., & Hett, C. (2018). Turning land into capital: Assessing a decade of policy in practice. *i–v*, 1–35.

Kong, R., Diepart, J.-C., Castella, J.-C., Lestrelin, G., Tivet, F., Belmain, E., & Bégué, A. (2019). Understanding the drivers of deforestation and agricultural transformations in the Northwestern uplands of Cambodia. *Applied Geography*, *102*, 84–98. https://doi.org/10.1016/j.apgeog.2018.12.006

Lamb, V., Schoenberger, L., Middleton, C., & Un, B. (2017). Gendered eviction, protest and recovery: A feminist political ecology engagement with land grabbing in rural Cambodia. *The Journal of Peasant Studies*, *44*(6), 1215–1234. https://doi.org/10.1080/03066150.2017.1311868

Laungaramsri, P. (2012). Frontier capitalism and the expansion of rubber plantations in southern Laos. *Journal of Southeast Asian Studies*, *43*(3), 463–477. https://doi.org/10.1017/S0022463412000343

Lestrelin, G., & Castella, J.-C. (2011). Opportunities and challenges for the adoption of conservation agriculture in maize production areas of Laos. 43.

Lewis, S.R., Faure, N., Leonard, S., Pen, R., Ba Ngai, N., & Phengsopha, K. (2023). Safeguarding customary forest tenure in the Mekong region: A legal analysis. *Journal of Land Use Science*, *18*(1), 84–108. https://doi.org/10.1080/1747423X.2023.2184513

Maharani, C.D., Moeliono, M., Wong, G.Y., Brockhaus, M., Carmenta, R., & Kallio, M. (2019). Development and equity: A gendered inquiry in a swidden landscape. *Forest Policy and Economics*, *101*, 120–128. https://doi.org/10.1016/j.forpol.2018.11.002

McCarthy, J.F., & Cramb, R.A. (2009). Policy narratives, Landholder engagement, and oil palm expansion on the Malaysian and Indonesian frontiers. *The Geographical Journal*, *175*(2), 112–123. https://doi.org/10.1111/j.1475-4959.2009.00322.x

Mellac, M., & Dao, N. (2019). *Chapter 10. Land from the Tiller: The politics of "land recovery" in Vietnam*. University of Washington Press. https://shs.hal.science/halshs-02368510

Menon, N., Rodgers, Y., & Kennedy, A. (2017). Land reform and Welfare in Vietnam: Why gender of the land-rights holder matters. 1–44.

Mercado, L., Naciri, M., & Mishra, Y. (2020). *Women's unpaid and underpaid work in the times of COVID-19*. UN Women. https://asiapacific.unwomen.org/en/news-and-events/stories/2020/06/womens-unpaid-and-underpaid-work-in-the-times-of-covid-19

Mi Young Park, C., & Maffii, M. (2017). 'We are not afraid to die': Gender dynamics of agrarian change in Ratanakiri province, Cambodia. *The Journal of Peasant Studies*, *44*(6), 1235–1254. https://doi.org/10.1080/03066150.2017.1384725

NAMATI. (2016). *Gendered Aspects of Land Rights in Myanmar: Evidence from Paralegal Casework*. https://namati.org/wp-content/uploads/2016/03/Namati-Gender-policy-brief-FINAL-1.pdf

Nanhthavong, V. (2012). *Impact of cash crop development on food security in rural areas: Case study from Oudomxay province, northern Lao PDR*. The Graduate Institute of Geneva.

Nanhthavong, V. (2017). *Characterization and Contextualization of agricultural transition patterns in the Lao PDR*. University of Bern.

Nanhthavong, V., Bieri, S., Nguyen, A.-T., Hett, C., & Epprecht, M. (2022). Proletarianization and gateways to precarization in the context of land-based investments for agricultural commercialization in Lao PDR. *World Development*, *155*, 105885. https://doi.org/10.1016/j.worlddev.2022.105885

Nanhthavong, V., Oberlack, C., Hett, C., Messerli, P., & Epprecht, M. (2021). Pathways to human well-being in the context of land acquisitions in Lao PDR. *Global Environmental Change*, *68*, 1–28. https://doi.org/10.1016/j.gloenvcha.2021.102252

Nguyen, H., Mortensen, S., & Pravalpruksukul, P. (2019). *Pathways for women's empowerment in agriculture in south and Southeast Asia*. Stockholm Environment Institute. https://www.jstor.org/stable/resrep22985#metadata_info_tab_contents

Nguyen, A.-T., Oya, C., Beban, A., Gironde, C., Cole, R., & Ehrensperger, A. (2023). Agricultural commercialization in the Mekong region: A meta-narrative review and policy implications. *Journal of Land Use Science*, *18*(1), 128–151. https://doi.org/10.1080/1747423X.2023.2191599

Nhat Lam Duyen, T., Rañola, R.F., Sander, B.O., Wassmann, R., Tien, N.D., & Ngoc, N.N.K. (2021). A comparative analysis of gender and youth issues in rice production in North, central, and South Vietnam. *Climate and Development*, *13*(2), 115–127. https://doi.org/10.1080/17565529.2020.1734771

Obein. (2007). *Industrial Rubber Plantation of the Viet-Lao Rubber Company, Bachiang District, Champasack Province—OD Mekong Datahub*. https://data.opendevelopmentmekong.net/library_record/04industrialrubberplantationoftheviet—_laorubbercompanybachiangdistrictchampasackprovince6may2007

OECD. (2019). *Gender, Institutions and Development Database (GID-DB). Access to Productive and Finan-Cial Assets*. [Data set]. http://stats.oecd.org

OECD. (2021). *SIGI 2021 regional report for Southeast Asia*. Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/development/sigi-2021-regional-report-for-southeast-asia_236f41d0-en

Pacheco, P., Mo, K., Dudley, N., Shapiro, A., Aguilar-Amuchastegui, N., Ling, P.Y., Anderson, C., & Marx, A. (2021). Deforestation fronts: Drivers and responses in a changing world. *Evidensia*. https://www.evidensia.eco/resources/1124/deforestation-fronts-drivers-and-responses-in-a-changing-world/

Park, C.M.Y. (2015, May 18). *New 'Webs of Power' and Agrarian Transformations in Cambodia: Where are the Women?* Transnational Institute. https://www.tni.org/en/publication/new-webs-of-power-and-agrarian-transformations-in-cambodia-where-are-the-women

Park, C.M.Y. (2019). "Our lands are our lives": Gendered experiences of resistance to land grabbing in rural Cambodia. *Feminist Economics*, *25*(4), 21–44. https://doi.org/10.1080/13545701.2018.1503417

Potapov, P., Tyukavina, A., Turubanova, S., Talero, Y., Hernandez-Serna, A., Hansen, M.C., Saah, D., Tenneson, K., Poortinga, A., Aekakkararungroj, A., Chishtie, F., Towashiraporn, P., Bhandari, B., Aung, K.S., & Nguyen, Q.H. (2019). Annual continuous fields of woody vegetation structure in the lower Mekong region from 2000-2017 landsat time-series. *Remote Sensing of Environment*, *232*, 111278. https://doi.org/10.1016/j.rse.2019.111278

Praneetvatakul, S., Phung, T.D., & Waibel, H. (2016). Agricultural diversification and vulnerability to poverty: A comparison between Vietnam and Thailand. In S. Klasen & H. Waibel (Eds.), *Vulnerability to poverty: Theory, measurement and determinants, with case studies from Thailand and Vietnam* (pp. 189–215). Palgrave Macmillan London. https://doi.org/10.1057/9780230306622_8

Prügl, E., & Joshi, S. (2021). Productive farmers and vulnerable food securers: Contradictions of gender expertise in international food security discourse. *The Journal of Peasant Studies*, *48*(7), 1439–1458. https://doi.org/10.1080/03066150.2021.1964475

Rigg, J., Salamanca, A., & Thompson, E.C. (2016). The puzzle of east and Southeast Asia's persistent smallholder. *Journal of Rural Studies*, *43*, 118–133. https://doi.org/10.1016/j.jrurstud.2015.11.003

Scott, S. (2009). Agrarian transformation in Vietnam: Land reform, markets and poverty. *The Political Economy of Rural Livelihoods in Transition Economies*, 175–200.

Tenneson, K., Jadin, J., Patterson, M.S., Rosenstock, T., Mulia, R., Kim, J., Quyen, N., Poortinga, A., Nguyen, M.P., Bogle, S., Dilger, J., Marlay, S., Nguyen, Q.T., Chishtie, F., & Saah, D. (2021). *Commodity-driven forest loss: A study of Southeast Asia*. USAID. https://servir.adpc.net/sites/default/files/public/publications/attachments/Commodity%20Driven%20Forest%20Loss%20Study%20SE%20Asia%20-%20full%20report_0.pdf

Thein, U.S., Diepart, J.-C., Moe, & Allaverdian, C. (2018). Large-scale land acquisitions for agricultural development in Myanmar: A review of past and Current processes. i–vi, 72.

Thuy, P.T., Moeliono, M., Hien, N.T., Tho, N.H., & Thi Hien, V. (2012). The context of REDD+ in Vietnam: Drivers, agents and institutions. pp. i–xiv, 1–79.
Tim, S., Providoli, I., Sien, T., Yim, S., Kim, S., & Liniger, H. (2023). Strengthening climate resilience of rural communities by co-producing landscape-specific integrated farming systems in Cambodia. *Journal of Land Use Science*, *18*(1), 152–175. https://doi.org/10.1080/1747423X.2023.2190740
To, P. (2023). Powers of exclusion: A case study of state-led large scale rubber development in Vietnam's north-western region. *Journal of Land Use Science*, *18*(1), 249–262. https://doi.org/10.1080/1747423X.2023.2220330
Tran, T.A., Tran, H.V., Pittock, J., & Cook, B. (2022). Political ecology of freshening the Mekong's coastal delta: Narratives of place-based land-use dynamics. *Journal of Land Use Science*, *17*(1), 471–486. https://doi.org/10.1080/1747423X.2022.2126907
Turubanova, S., Potapov, P.V., Tyukavina, A., & Hansen, M.C. (2018). Ongoing primary forest loss in Brazil, Democratic Republic of the Congo, and Indonesia. *Environmental Research Letters*, *13*(7), 074028. https://doi.org/10.1088/1748-9326/aacd1c
UNDP. (2021). *The Gender Wage Gap in Cambodia*. https://www.undp.org/cambodia/publications/gender-wage-gap-cambodia
United Nations. (2015) . *Transforming our World: The 2030 Agenda for sustainable development A/RES/70/1*.
UNSDG. (2020). *Policy Brief: The Impact of COVID-19 on South-East Asia*. https://unsdg.un.org/resources/policy-brief-impact-covid-19-south-east-asia.
Viau, J., Keophosay, A., & Castella, J.-C. (2009). Impact of maize expansion on traditional rice production systems in northern Lao PDR. A case study in Xiengkhor district, Huaphan province. *Environmental Technology*, *30*(8), 825–30. https://doi.org/10.1080/09593330902990113
Vientiane Times. (2013) . *Xayaboury to limit maize production*.
Waibel, G., & Glück, S. (2013). More than 13 million: Mass mobilisation and gender politics in the Vietnam women's union. *Gender & Development*, *21*(2), 343–361. https://doi.org/10.1080/13552074.2013.802148
Warr, P. (2016). Agricultural growth and rural poverty reduction in mainland Southeast Asia. In Cramb, R.A., Gray, G.D., Gummert, M., Haefele, S.M., Lefroy, R.D.B., Newby, J.C., Stür, W., & Warr, P. (Eds.), Trajectories of Rice-Based Farming Systems in Mainland Southeast Asia. *Australian centre for international agricultural research*.
Yokying, P., Sangaroon, B., Sushevagul, T., & Floro, M.S. (2016). Work-life balance and time use: Lessons from Thailand. *Asia-Pacific Population Journal*, *31*(1), 87–107.

Appendix 1. Gender-disaggregated land ownership and land use data

Sources

(a) Cam et al. (2013): survey with 1253 people
(b) Committee on the Elimination of Discrimination against Women (CEDAW), 2019
(c) Demographic and Health Survey
(d) FAO Land Rights Database
(e) Lastarria-Cornhiel 2007
(f) OECD (2019)
(g) UN-DESA
(h) World Bank Gender Data Portal
(i) World Bank Land Administration Project (2008)
(j) World Bank LTP II Project

	Vietnam	Cambodia	Lao PDR	Thailand	Myanmar
Laws on land ownership	Art. 98 of 2013 Land Law stresses joint use rights	Art. 168–174 of 2001 Land Law stress equal rights to land	Art. 43 of 2003 Land Law stresses joint land titles. 2019 Land Law is gender neutral	Art. 33, 41 of constitution stipulates equal rights to land and non-land assets	2016 National Land Use Policy stipulates equal rights to land
Land titles/land use certificates by gender (Sources below)	Rural land use certificates by gender: 52% men, 17% women, 16% joint,15% other. (*a*) 60% of joint titles among 3.4 million issued land use certificates. (*i*) In 2018, 9% of agricultural landowners were women. (*f*)	>2.3 million land certificates issued 2013–19: 18% to women, 60% joint, 13% to men. *(b)* 10.2% of women and 8.5% of men own land individually. *(c) 2014; (h)*. 55.2% of women own agricultural land. *(g) 2014* In 2018, 9% of women owned agric. land. (f)	9% of LUC held by women. *(d), 1999 Census* LUC by gender included: 38% women, 23% men, 30% joint titles. *(j)* 2006 study of 9 provinces found women's names on 40% of LUC. *(c)*	28.7% of agricultural landholders in Northern regions are women. *2013 Census*. 23% of agricultural land holders are women; 76% men. *(d), 2003 Census*. Share of women among owners of agricultural land in 2018 is 27%. *(f)*	27.3% of men and 14.4% of women own land individually. *(c) 2016* Share of women owning agricultural land: 56.9%. *(g) 2016* Share of women among owners of agricultural land 2018: 15%. *(f)*