



Land and the environment: pollution, deforestation, climate change, conservation zoning

Extended synopsis

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Overview

Land governance has become attached to environmental agendas in a number of ways. The best recognised of these is the cordoning off of forest land for conservation in national parks and other protected areas. In many parts of the Mekong Region, this has become an issue where conservation zones have been declared in areas previously settled, criminalising the largely ethnic minority farmers who find themselves living in such areas. More recently, "green grabbing" has become an issue as environmentally-inspired programs such as REDD+ assign recoverable value in forest carbon and hence give new incentives to acquire rights to forest land that is part of the livelihood domain of smallholders. Other environment-related issues include the pressures places on lowlands - especially delta areas - by climate change, the damage done to soils by industrial agriculture, and the environmental externalities of modern practices that impact on nearby smallholders.

Key trends and dynamics

Environmental protections in the Mekong region are frequently threatened by commodity markets. Most directly, an interest in timber products can lead to illegal deforestation, such as in a multi-million dollar smuggling industry in luxury rosewood to China (Environmental Investigation Agency 2014; Global Witness 2015; Singh 2013), and wood from around Indochina that is processed in

Vietnam to feed demand for cheap furniture in Europe and the US (Environmental Investigation Agency 2011; Environmental Investigation Agency and Telepak 2008). Commodification and associated crop booms place more indirect pressure on forests, such as in the expansion of rubber in the 2000s due to high prices, and the rise of tissue-culture banana in northern Myanmar since 2015 (Hayward et al. 2020). For example, in Lao PDR an estimated 14.43% of natural forest was converted to plantation forest between 2010-2017 (Wang et al. 2019). In Cambodia, nearly half of the concessions given out from 2000-2012 were forested in 2000, and there have been higher rates of deforestation within concession areas than in other areas (Davis et al. 2015). Some ELCs encroach into protected forest areas and wildlife sanctuaries (Cambodian Human Rights and Development Association 2014). In Thailand, Zheng et al. (Zeng, Gower, and Wood 2018) identify forest loss in the northern province of Nan due to increases in maize production.

There are other knock-on effects from timber extraction. The combination of deforestation and intensified agriculture, particularly monocropping, contributes to soil and landscape degradation (Lestrelin 2010). The shift to industrialised farming stresses freshwater ecosystems, threatening their ability to provide for agriculture and food security (Johnston et al. 2010; Thomas et al. 2012). A further linkage ties deforestation with concerns over the impacts of climate change. In particular, the increasing frequency and severity of natural disasters impact upon farmer strategies. An example is found in the aftermath of the 2011 floods in Thailand, and the resulting shift in crop choices (Panichvejsunti et al. 2018). Environmental disasters can also create new precarities in land tenure. Following the 2004 tsunami, there has been significant dispossession of land for indigenous communities in the south of Thailand (Neef et al. 2018).

The industrialised use of water in the region is having a profound impact upon supported ecosystems, including communities living in proximity to water sources or courses. Nowhere is this more apparent to see than in the plight of the Mekong, no longer a free-flowing but a human-managed river due to the extensive number of hydropower projects interrupting its route from China to Vietnam, with plans afoot for numerous further projects. Each venture has considerable environmental costs, both individually and cumulatively, with communities forcibly displaced to make way for new dams. A further threat to water provisions sees large-scale infrastructure projects on wetlands surrounding cities that provide a vital filtering service to waste-water. Contentious examples are the construction of Suvarnabhumi International Airport on the Cobra Swamp on the outskirts of Bangkok, and projects on That Luang Marsh in Vientiane. Meanwhile, a number of lakes in and around Phnom Penh have been filled in to create land for commercial developments. In the context of urbanisation processes, a lack of coordinated land use planning is creating a platform for precarity against environment disasters. Beringer and Kaewsuk (Beringer and Kaewsuk 2018) show how infrastructure development is increasing the risk of flooding risks in Khon Kaen city, northern Thailand.

Climate-change mitigation policies in Myanmar, combined with resource investment through concessions and other large-scale land acquisitions, are creating overlapping disputes on land. In Myanmar, this exacerbates rather than alleviates tensions within the peace process (Woods 2015). Work and Thuon (Work and Thuon 2017) note how in Prey Lang, Cambodia, industrial tree plantations qualify as forest restoration, and local communities are unable to access areas of land around ELCs that have been mapped as protection zones. A key strategy to identify and address drivers of deforestation and degradation, and incorporate them into climate change mitigation, has

been the UN-backed REDD program in its various iterations (Broadhead and Izquierdo 2010). There are concerns that REDD projects are re-centralising forest management as opposed to promoting decentralised governance that can more easily strengthen local resource tenure security (Baird 2014). Claims on forest carbon are reorienting power relations and property rights in forest areas, potentially creating new fields for dispute (Mahanty et al. 2013). Such programs are also seen to justify and help promote commercial farming. For example, the promotion of rubber plantations by the Vietnamese government is aligned with REDD+ and Forest Law Enforcement, Governance, and Trade (FLEGT) programmes (To Xuan Phuc and Tran Huu Nghi 2014b). However, Work (Work 2015) shows how REDD carbon-capture programs in Cambodia are being restricted due to a monopoly on the timber trade by domestic elites.

Rather than compound tenure issues, there is evidence that for REDD schemes to be successful, they first need to directly address potential areas of dispute, otherwise deforestation may continue. Bourgoin and Castella (Bourgoin and Castella 2011) provide an example of such a process in the use of participatory land use planning as part of a REDD project in northern Lao PDR. Approaching the topic from a different angle, the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT) recognise that strong support for the tenure of vulnerable and marginalised people can also help protect them from the impacts of climate change, including climate-induced displacement (Food and Agriculture Organization of the United Nations 2012).

Both environmental degradation and projects to mitigate against it can have a significant impact on the livelihoods of communities living in proximity to such areas as forests or water courses. Ratner (Ratner 2011) highlights need to prioritise community-based management in forestry and fisheries against public and private sector investment. He suggests that policies supporting access to common-pool resources will help in their sustainable management. Community freshwater fisheries in Cambodia have been highlighted as being under threat from commercial use, to the further detriment of fish stocks (Diepart et al. 2015; Sneddon 2007). A number of commentators make explicit links between climate change projects and forest plantations as a driver for the global land grab (Fairhead, Leach, and Scoones 2012; Hunsberger et al. 2015, 2017; Zoomers 2010). Yet so-called green grabbing does not merely concern forests, as seen in the example of ocean-grabbing in northern Tanintharyi, Myanmar, for access to fish stocks and offshore gas (Barbesgaard 2018).

One area of governance linking local tenure rights and environmental needs is that of community forestry. In Vietnam, the implementation of the Law on Forest Protection and Development in 2004 has increased the potential scope for community-based projects (Huy 2006). Sikor and Tan (2011) contend that community forestry can contribute to sustainable forest management, poverty reduction, grassroots democracy and the preservation of local cultures. Yet there are other ways of involving community members in natural resource management regimes. Fischman (Fischman 2012) assesses conflict over land and forest access and usage in Doi Mae Salong, northern Thailand, between local communities representing different ethnic groups, army, agricultural and forest departments. A Payment for Ecosystem Services (PES) scheme is put forward as a solution, which could allow shared management of natural resources, and include land tenure security for participating communities.

Key actors, interests

State agencies

There are different types of state policies that engage both land and other aspects of the environment. On the one hand, land-related policy can impact upon the environment. For example, the formation of Special Economic Zones around the region can result in the dilution of legal protections for the environment. This is seen in the cases of SEZs and the Eastern Economic Corridor (EEC) in Thailand (International Commission of Jurists 2020). In Lao PDR, policies encourage the conversion of degraded forest to agricultural and plantation concessions that might give some support to rural livelihoods (Van der Meer Simo, Kanowski, and Barney 2019). However, the policies frequently underestimate the 'environmental income' that could be derived from such areas without having to resort to conversion.

On the other hand, environmental policy can have significant impacts upon land relations. In Vietnam, wetland policy within Kien Giang Biosphere Reserve places significant attention on the involvement of local communities, allowing them to maintain access areas in the reserve and derive sustainable sources of food and income (Hoang Huu Nguyen et al. 2017). In a less positive way, recent policy in Thailand has tightened up on community access to forest areas. This includes reclamation policy under the 2014 junta and the 2019 National Parks Act, potentially prohibiting community access to certain protected areas, and allowing authorities the ability to impose harsh punitive measures where the new rules are violated.

State responses to environmental issues are not consistent, and there is frequent and ongoing competition between different ministries and departments. Conflict takes place through differing aims in the utilisation of land, such as for agriculture or industrial development as opposed to protectionist aims in forest conservation. Broegaard et al. (Broegaard, Vongvisouk, and Mertz 2017) expose competing agendas in relation to land use and rights in Lao PDR. On the one side is an aim to provide tenure security, intensifying agricultural production while protecting forest areas. On the other side are policies that promote agribusiness and look to change land use and access practices. A further study from the Huaphan Province in the northeast of the country specifies competition between land use for maize cultivation, to supply the Vietnamese market, and government provisions to implement REDD+ (Vongvisouk et al. 2016). Yet forest programs can also be seen to justify and help promote commercial farming. For example, the promotion of rubber plantations by the Vietnamese government is seen to align with REDD+ and Forest Law Enforcement, Governance, and Trade (FLEGT) programmes (To Xuan Phuc and Tran Huu Nghi 2014b).

Civil Society

Environmental degradation and the consumption of resources is frequently associated with those living in and close to rich and biodiverse areas. Many land-related projects look to limit this impact, ideally looking at sustainable production practices that can provide market opportunities for the community, and also contribute to local resource management including forest protection. An example links sustainable bamboo forestry management to communal land titles in Vientiane Prefecture, Lao PDR (International Fund for Agricultural Development, PROCASUR Corporation, and Asia Indigenous Peoples Pact 2013). There have been different generations of such projects, labelled as community-based resource management, Payment for Ecosystem Services (PES), and community forestry, the latter promoted by regional non-governmental forestry organisation such as RECOFTC and CIFOR.

There are many ways that different civil society groups network in order to promote their efforts. Roberts (2016) highlights how local community networks with NGOs and local officials can bolster efforts by marginalised groups (in this case, the Black Lahu in Chiang Rai Province, northern Thailand) to resist central state attempts to impose forestry regulation or enforce eviction from forest areas. However, there are also disputes between different groups of civil society. A rising urban-based middle class frequently takes on environmental causes, questioning the practices of rural and forest dwellers against conservation needs.

Inter-governmental Organisations

There are many international mandates, actively promoted by IGOs, that link environmental causes with equitable land rights. The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT) recognise that strong support for the tenure of vulnerable and marginalised people can help protect them from the impacts of climate change, including any need for climate-induced displacement (Food and Agriculture Organization of the United Nations 2012). They propose that secure tenure can be placed together with sustainable land use, looking for an inclusive space for both social and environmental needs. The Food and Agriculture Organisation of the United Nations continues to use the VGGT to frame its work in countries around the globe, including Southeast Asia.

A more recent mandate is the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UN General Assembly 2018). In calling to strengthen the rights of rural people, the declaration affirms the need to concurrently fight against climate change, and the conservation of biodiversity, in order to protect smallholder farming.

Key contestations and debates

There are different ways to look at the relationship between poverty and environment, such as in how poverty has a bearing upon the environment or whether the environment (and degradation) influences poverty. Tong and Sry (Tong and Sry 2011) study the latter, namely the impact of floods, drought and land erosion on poverty in Cambodia. They note unexpected benefits in the case of flooding due to improvements in the wealth of biodiversity to support communities. Much recent research takes a more nuanced view of this debate, noting a more complex interrelation between poverty and the environment. One report suggests that REDD in Cambodia has an important role to try and achieve a balance between community and conservation needs (Biddulph 2012). By doing so, it can address poverty alleviation for local communities, with related projects able to supply land tenure options through the provision of agricultural plots in forests. Trædal and Vedeld (Trædal and Vedeld 2018) challenge the dichotomy between forests and agriculture, instead promoting the notion that conservation and livelihood activities, within a context of sustainable use of forests, can be mutually beneficial for all. This is particularly relevant for the poorer segments of communities.

However, there are critiques of payment for environmental services. These are in part based on the institutional and property rights challenges in implementing them, and in part on their neo-liberal basis that marketises "nature" and other values that have previously been off-limits to commercial reasoning. This fits into a perspective where governments continue to employ protected area demarcation as means of territorial and resource control (Ganjanapan 1998), retaining power over the permission for large scale commercial activities to operate within such areas. Indeed, the near-

universal under-regulation and under-enforcement of environmentally damaging practices by industrial agriculture in the Mekong region receives much media attention, but with little government reaction to date. Milne (Milne 2015) notes how illicit logging in Cambodia goes unaccounted for due to the endgame of attracting finance for Chinese-backed hydropower, and Vietnamese-backed rubber concessions. National policy has long promoted investment, thereby disincentivising protectionary measures for the environment, particularly for forests (Yasmi et al. 2010). In this sense, there is no surprise that Environmental Impact Assessments when setting up projects are ineffective. Peluso and Vandergeest go on to question the assumption that forests should be put into the hands of state authorities, using the notion of “protection”, and therefore taken away from local people (Peluso and Vandergeest 2001).

Debate over the continued settlement, resource extraction and farming in protected areas continues to pit different civil society groups against one another, depending on their orientation toward livelihoods or more "dark green" objectives. Conflict is exacerbated by the sense of ambiguity in overlapping rights. For example, when setting out boundaries for protected areas, Thai authorities failed to account for large numbers of people already residing within such areas, leading to continuing disputes to this day on access rights and land use for cultivation (Fujita 2003; Sato 2000). A key argument in this debate is that forest-dwelling communities contribute to environmental destruction through agricultural practices of rotational farming, most clearly seen in its framing as ‘slash-and-burn’, or in the identification of such groups as forest destroyers. Ethnic minorities in the northern highlands of Thailand have been vilified for encroachment into protected areas, deforestation and opium production by a growing environmental lobby (Ayuttacorn 2019; Hares 2009). In a similar way, government policy in Lao PDR has been geared to eradicating slash-and-burn techniques (Ducourtieux, Laffort, and Sacklokham 2005).

An opposing view postulates that environmental destruction occurs from the commercialisation of farming around monocropping, or deforestation for commercial land use, and that rotational farming by ethnic groups is not extensive enough to match regional burning (Guttal 2011). For example, swidden agriculture practices in Lao PDR have decreased since 2010, and so are disproportionately held accountable for environmental degradation (Ornetsmüller, Verburg, and Heinemann 2016). The Kachin Development Networking Group (Kachin Development Networking Group 2010) show how cassava, sugar and jatropha plantations have undermined Hukawng Valley Tiger Reserve in northern Myanmar. Even where deforestation is associated with shifting cultivation, the impact can be traced back to commercial agricultural practices. For example, in the Central Highlands of Vietnam deforestation through shifting cultivation has indirectly resulted from the expansion of coffee production and other mono-cropping activities, thereby pushing ethnic minorities further into the forest margins (Meyfroidt, Vu Tan Phuong, and Hoang Viet Anh 2013).

Various reports highlight positive outcomes from shifting cultivation compared to industrial agriculture. For example, Fox et al. (Fox, Castella, and Ziegler 2011) suggest that it can be carbon neutral in certain conditions. They argue that for projects relating to climate change, rather than focus on enforcing forest boundaries, much can be achieved by looking closer at land use with an emphasis on both sustainable livelihoods and environmental services, including carbon release. Local knowledge is frequently promoted not only to support the citizenship and land use rights of ethnic minorities around the region, but also for the inclusion of communities in forestry management regimes (Kane et al. 2017; Virapongse 2018). There is a growing body of work claiming the

community involvement in environmental projects is critical for success, and socially just land policies are more likely to reinforce climate justice (Borras Jr. and Franco 2018). MRLG warns that the '70 Percent Forestland Policy' of the Lao PDR may not be successful while it fails to include communities both in land mapping and zoning of forest and land use areas, and in forest management regimes that can provide access and sustainable use of forests (MRLG 2019).

Key differences and commonalities among Mekong countries

There is a certain disparity when comparing the state of the forests in countries around the Mekong region. Myanmar (with the largest coverage at around 29 million hectares) and Cambodia have both seen decreases in coverage over the past 20 years, primarily due to timber extraction and clearances for other land uses (Ingalls et al. 2018). In Myanmar, exploitation was particularly high during the 2000s before a transition towards a quasi-democratic process, in particular feeding a demand for timber products. This transition offered hope to conservationists (Cosier et al. 2017), yet a legacy of exploitative crony capitalism acts to the detriment of both forests and local communities living around forest areas.

Thailand has stabilised its forest area at around 32% national coverage, influenced by an earlier period of agricultural expansion than other countries, and a logging ban from 1989. There have been various schemes in Thailand both for reforestation and to offer leasehold rights for land use on forest reserve land (Hirsch 1990). There was a failure to enact a community forestry law in the mid-2000s (Fisher 2011), while new legislation in 2019 threatens to criminalise the continued presence of forest dwellers.

Over the two decades, both Vietnam and Lao PDR have shown an expansion in their forest coverage. The case of Vietnam suggests that it is at the end of a forest transition curve, in that rapid deforestation is now reduced, and regrowth is possible (Pham Thu Thuy et al. 2012). There is an established Forest Land Allocation (FLA) policy, attempting to regulate protectionary measures and place consideration upon community access (To Xuan Phuc and Tran Huu Nghi 2014a). In 2010, Vietnam introduced a Payment for Ecosystem Services (PES) scheme, even if subsequent evidence points to the maintenance of strict state control over forest areas rather than an equitable relationship with civil society for the access to and management of forest areas (Phuc To and Dressler 2019). In Lao PDR, forest cover remains over 70% of total national land area according to FAO figures. However, due to differences in how forests are defined, this differs significantly from official government figures, set at nearly 45% (Ingalls et al. 2018).

When compiling data on forest cover, the figures commonly include tree plantations, such as monocropping in rubber and oil palm. It is disputed whether such data should be included, with plantations of this kind not supporting the rich biodiverse ecosystems commonly associated with primary non-industrial forests. In Cambodia, tree plantations have been set up in the name of sustainable forestry and climate programs, cloaking a corporate land grab that is leading to the destruction of primary forest (Scheidel and Work 2016).

Key links and interactions across borders and across scales

Regional trade and investment is a key factor in the exploitation of natural resources, often superseding national conservation policies. For example, long-standing relations between Kachin State in northern Myanmar, and Yunnan Province in China have yielded the movement of resources across the border, most recently timber, jade, and the setting up of rubber plantations. The latter case highlights how acquisition of land for cross-border land investment incurs large-scale changes to the landscape. As well as the resulting change and loss of biodiversity, industrialised agricultural processes can have profound environmental effects. The use of chemical inputs that enter water sources threatens the health of humans, livestock and wider biodiversity. Land clearances or seasonal preparation for new crops may involve a burning process, which contributes to issues of haze that also crosses national borders. The exploitation of rivers, such as the Mekong, can affect downstream ecosystems and resource provisions with no consideration for national borders.

Key reform issues and strategic openings

- Co-management arrangements that recognise sustainable agricultural practices within protected areas
- Benefit sharing through payment for environmental services
- Progressive tenure reforms to ensure that returns to REDD+ go to the rural poor rather than wealthy investors
- Adaptation programs in areas vulnerable to sea level rise and other climate change impacts
- Setting and enforcement of environmental legislation to control agricultural practices with environmental externalities for surrounding farms
- Promotion of principles of Responsible Agricultural Investment that call for environmental protections alongside inclusive sharing of benefits from agribusiness ventures.

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