

Lao's Deforestation Commitments: Gaps and Prospects in REDD+ Implementation

Estafetta Chrysantina Murakabhi

Universitas Sebelas Maret

E-mail: estafettamurakabhi@student.uns.ac.id

Septyanto Galan Prakoso

Universitas Sebelas Maret

E-mail: septyantogalan@staff.uns.ac.id

Hasna Dherin Syakira

Universitas Sebelas Maret

E-mail: hasnadherinsyakira@student.uns.ac.id

Rahma Sintya Devi

Universitas Sebelas Maret

E-mail: rahmasintya@student.uns.ac.id

Ihya Pradnya Sayoga

Universitas Sebelas Maret

E-mail: ihyapradnya@student.uns.ac.id

Abstract

Deforestation in Laos presents a critical environmental challenge with significant implications for biodiversity, climate change, and the socio-economic well-being of local communities. The main drivers of deforestation include shifting agriculture, illegal logging, and the conversion of forests into agricultural plantations, particularly for cassava and rubber. Despite Laos' efforts to address this issue through initiatives such as the REDD+ program and sustainable forest management strategies, challenges persist due to weak governance, limited local capacity, and economic dependence on forest resources. This paper explores the multifaceted causes of deforestation in Laos and evaluates the effectiveness of current measures to mitigate its impacts. Drawing on Green Political Theory, the study emphasizes the moral imperative of prioritizing ecological conservation over short-term economic gains. It also highlights the socio-economic consequences of deforestation, including habitat loss, decreased biodiversity, and conflicts over land rights. The findings suggest that while programs like REDD+ have potential, their success requires stronger enforcement mechanisms, inclusive policy frameworks, and active community involvement. By addressing these gaps, Laos can advance sustainable forest management and contribute to global efforts to preserve the environment. This study recommends improving policy implementation and fostering international collaboration to effectively tackle deforestation.

Keywords: Deforestation in Laos, Green Political Theory, REDD+ Implementation

Abstrak

Deforestasi di Laos merupakan tantangan lingkungan yang kritis dengan implikasi signifikan bagi keanekaragaman hayati, perubahan iklim, dan kesejahteraan sosial-ekonomi komunitas lokal. Faktor utama penyebab deforestasi meliputi pertanian berpindah, penebangan liar, dan konversi hutan menjadi perkebunan pertanian, terutama untuk singkong dan karet. Meskipun Laos telah berusaha mengatasi masalah ini melalui inisiatif seperti Program REDD+ dan strategi pengelolaan hutan berkelanjutan, tantangan tetap ada akibat tata kelola yang lemah, kapasitas lokal yang terbatas, dan ketergantungan ekonomi pada sumber daya hutan. Artikel ini mengeksplorasi penyebab multifaset deforestasi di Laos dan mengevaluasi efektivitas langkah-langkah saat ini untuk mengurangi dampaknya. Dengan mengacu pada Teori Politik Hijau, studi ini menekankan kewajiban moral untuk memprioritaskan konservasi ekologi daripada keuntungan ekonomi jangka pendek. Studi ini juga menyoroti konsekuensi sosial-ekonomi deforestasi, termasuk hilangnya habitat, penurunan keanekaragaman hayati, dan konflik hak atas tanah. Temuan menunjukkan bahwa meskipun program seperti REDD+ memiliki potensi, keberhasilannya memerlukan mekanisme penegakan hukum yang lebih kuat, kerangka kebijakan yang inklusif, dan partisipasi aktif komunitas. Dengan mengatasi celah-celah ini, Laos dapat maju menuju pengelolaan hutan berkelanjutan dan berkontribusi pada upaya pelestarian lingkungan global. Studi ini merekomendasikan perbaikan implementasi kebijakan dan peningkatan kolaborasi internasional untuk mengatasi deforestasi secara efektif.

Kata kunci: Deforestasi di Laos, Green Political Theory, Implementasi REDD+

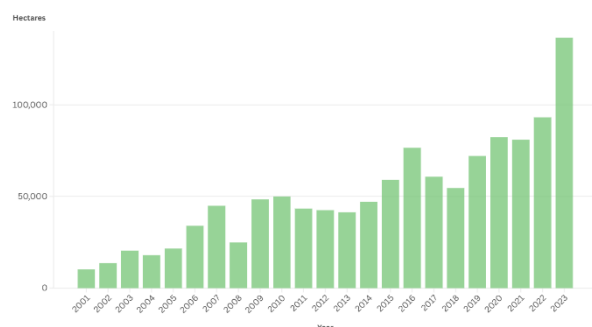
INTRODUCTION

Forests have been central to Laos' economy since ancient times, with historical accounts from the 12th century revealing that trade in aromatic forest products such as benzoin, musk, cardamom, and sandalwood was a major source of national wealth. More recently, forestry products and hydroelectric power formed some 90% of all exports in the 1980s, with forest sector exports accounting for half of official exports in the following decade. At the household level, two-thirds of the population rely on forests for food, fuel, fiber, and medicine, with more than 39% of rural family income derived directly from non-timber forest products, and the combined value of timber and non-timber forest products estimated at US\$10,740 per capita. (L.,Danyo, 2020)

However, deforestation remains a crucial environmental challenge in Laos, with major implications for ecological, social, and economic systems. As a landlocked country rich in biodiversity and forest resources, Laos faces increasing

pressure from agricultural expansion, illegal logging and plantation development (Benedikter et al., 2024). In 2024, Laos lost more than 351,000 hectares of tree cover, including 223,493 hectares. Within its 1.2 million hectares of protected areas, this represented a decline from the more than 445,000 hectares lost in 2023. (Global Forest Watch, 2026) Deforestation was particularly severe in Luang Prabang province, partly due to the construction of a hydroelectric dam near a UNESCO World Heritage Site (Fawthrop, 2021).

Across the country, deforestation has been driven by the expansion of agricultural and mining concessions aimed at meeting growing demand from China, with Chinese and Vietnamese companies acquiring large areas of land for banana and durian plantations, some of which have reportedly encroached upon protected biodiversity forests such as Dong Hua Sao and Xe Pian. (Mekong Eye, 2025)

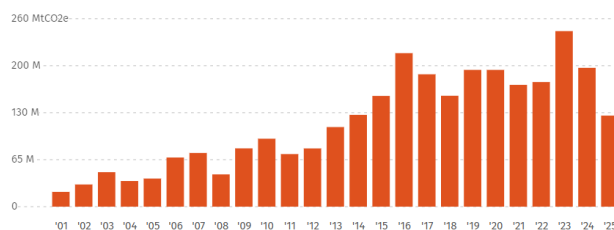


Primary forest loss in Laos (2001-2023)

Source: Global Forest Watch, 2026

The illegal logging practice is also gaining momentum under the guise of those special infrastructure projects. According to the EIA, Laos sold 1.8 million cubic yards of lumber to China and Vietnam in 2013, more than ten times the nation's declared crop. Additionally, trade data reveal that China imported \$1 billion worth of illegal timber from Laos in 2014, a 22-fold increase from 2008 (ecohubmap, 2025).

This condition is also supported by data from Global Forest Watch (2025): Laos's loss of tree cover resulted in an average annual emission of 120 Mt into the atmosphere between 2001 and 2025. During this time, 2.9 Gt of CO₂e were released. Moreover, a 2020 report by the Centre for Development and Environment (CDE) of the University of Bern found that 1,758 land deals, covering 11.75 million hectares, or roughly 50% of Laos' territory, were granted to investors, with 240 of these deals covering 137,332 hectares inside national forest areas; a survey of communities affected by 296 of these deals found that one-quarter of villages experienced a loss of food availability due to loss of access to communal forests, chemical contamination, and changing land use (Siri, 2023).



Forest-related greenhouse gas emissions in Laos

Source: Global Forest Watch, 2025

Despite being central to the country's economy, these activities have led to significant forest loss, contributing to climate change and reducing the livelihoods of local communities. The intersection of environmental degradation and socio-political dynamics in Laos reflects broader issues highlighted by Green Political Theory, which emphasizes the moral obligation to prioritize the interests of nature over short-term human interests (Thongmanivong et al., 2013). Efforts such as the REDD+ program and sustainable forest management strategy demonstrate Laos' commitment to addressing deforestation.

The first national assembly on forests in Laos was held in May 1998 to address deforestation and environmental problems in the country. Among the solutions was a plan to promote agricultural production and tree planting, which included a land forest allocation (LFA) program carried out by the District Agriculture and Forestry Office (DAFO). However, the study found that the program does not affect locals inclusively, while still creating disparities due to a lack of personnel and funding (Kaisone & Takashi, 2004).

At a glance, Laos joined the REDD+ initiative back in 2008 and has identified a

national REDD+ readiness programme. They had established REDD+ institutional arrangements at the central and local levels while piloting several projects from 2009 to 2020. In addition, the proposal for emission reduction was approved by external stakeholders, including the World Bank, with a total value of USD 42 million (Minister of Agriculture and Forestry, 2021). However, challenges such as weak governance, economic dependency, and inequitable resource management persist.

As deforestation transcends national boundaries and contributes to the global ecological crisis, Lao initiatives have both domestic and international urgency. This paper examines the causes and consequences of deforestation in Laos and evaluates the effectiveness of current measures in addressing this serious problem.

METHODS

Theories or Conceptual Framework

Nature is the source of life; it provides life-sustaining materials such as water, plants, and rocks. As time goes by, human life becomes more modern. Humans are getting smarter at processing natural resources and running economic activities. Human nature is becoming increasingly greedy and selfish in the use of natural resources, until, in the 1960s, a problem arose in economics and environmental science. Economic growth is the main cause of the environmental crisis. Garrett Hardin calls it the Tragedy of the Commons, in which humans overuse natural resources in pursuit of maximum profit (Hardin, 2018). Hardin uses the analogy of cattle ranchers who keep increasing the number of their cows to boost profits until the grasslands run out. Hardin's analogy explains the greedy, selfish behavior of humans who

exploit natural resources until they run out or scarcity ensues. In the 1970s, many environmental interest groups emerged, concerned about environmental issues. The strong public support eventually influenced politics. Many groups criticized capitalism from an environmental perspective. The issue began to be discussed across many countries, and at that time the idea of Green Political Theory (GPT) emerged.

The idea of GPT prioritizes the interests of nature and opposes the assumptions of mainstream liberal political economy. GPT emphasizes that environmental decisions should not be based solely on economic growth, national interests, or material gain. From an ecocentric perspective, nature has intrinsic value and must be protected for its own sake, as well as for local communities, non-human life, and future generations. Therefore, development should be assessed not only by its economic benefits but also by its ecological consequences, social justice, and respect for environmental limits. According to it, human development must be limited to preserve nature. In the 1990s, international relations realized the need for theoretical and practical attention to the environment. Environmental problems are issues that cross national borders, such as climate change, pollution, and other environmental issues. In other words, environmental problems are global, so international cooperation is needed to address them. Many political scholars have developed Green Political Theory since then.

One of the professors in the field of political science who aggressively developed Green Political Theory in the study of international relations is Robyn Eckersley. According to Eckersley's view, nature is the center of the universal system (Burchill & Linklater, 2021). The global

political structure needs to adopt an ecocentric perspective to protect nature, with humans prioritizing nature's interests over human self-interest. Green Political Theory has an ecocentric view. According to Green Political Theory, nature is the center of the universal system and stands above humans. Ecological values have a long-term nature and not short-term political interests. Damage to nature makes human life worldwide chaotic by creating a domino effect across various aspects of life. Green Political Theory in international relations examines whether environmental policies prioritize ecological sustainability over economic interests, address the structural causes of environmental damage, involve affected communities, and distribute environmental benefits and burdens fairly. Thus, Green Political Theory functions as an analytical tool for evaluating both the socio-economic and environmental impacts of policy.

Research Methods

This study adopts a qualitative descriptive approach to examine the causes, impacts, and policy responses to deforestation in Laos. The choice of a qualitative method allows for a comprehensive understanding (Turale, 2020). In this research, the qualitative descriptive approach could be used to provide a comprehensive understanding of the interrelated socio-political, economic, and ecological dimensions of deforestation. Data were obtained primarily through document analysis of secondary sources, including academic journals, official government reports, international organization publications, and credible online databases (Bowen, 2009). Sources such as the World Bank, FAO, Global Forest

Watch, and REDD+ documentation provided key quantitative indicators and contextual policy information.

The research followed three main stages. First, the authors conducted a literature review to identify theoretical and empirical discussions of environmental governance, particularly the application of Green Political Theory (GPT) to understanding Laos's environmental policy behavior. This theoretical framework guided the analysis of moral and political obligations within environmental management. Second, the authors carried out the data categorization by organizing the information into major themes: (1) drivers of deforestation, (2) socio-economic and environmental consequences, and (3) policy interventions and governance mechanisms. Third, a comparative and interpretive analysis to evaluate the effectiveness of Laos's existing programs, especially REDD+ and sustainable forest management policies, in mitigating deforestation.

The authors also used Triangulation by cross-referencing data from multiple sources to ensure reliability and validity. The study also integrated policy evaluation techniques, emphasizing the coherence between national development plans and international environmental commitments. This approach enabled a balanced interpretation of both progress and persistent challenges. The qualitative methodology thus allows the study to move beyond statistical description, focusing instead on the underlying political structures, governance practices, and ethical considerations that shape Laos's current efforts to combat deforestation.

RESULTS AND DISCUSSION

Laos' Forest for the Community

As a landlocked country with no coastal territory, the Lao people's livelihoods depend on agriculture and mining. The Lao people, the majority of whom are ethnic Lao Loum, live in several places, including along the Mekong River, on mountain slopes, and in highlands. Rice, sweet potatoes, coffee, tobacco, and corn are among the leading agricultural commodities (Kominfo, 2023). Most families in Laos work together to farm. Male family members will plow the fields, cultivate the fields, work on the waters, and so on.

Meanwhile, female family members are responsible for transplanting seeds, cleaning the fields, and threshing the rice. In the 2010s, Laos successfully attracted foreign direct investment and partly focused on the industrial sector and natural resources. About 30% of foreign investment in Laos is directed to the development of mining resources (Canada, 2022). However, this has not displaced the agricultural sector in Laos, which remains the main driver of the country's economy. People in Laos also still rely on the agricultural sector as their main livelihood.

Since most people live in rural areas and forests provide many essentials for daily life, forest products beyond lumber are a significant factor. Charcoal, poles, bamboo, rattan, wood shingles, sticklac, benzoin, edible nuts, fruits, roots, and berries are some examples of these. With annual consumption of 3 to 4 million cubic meters, wood for fuel and charcoal are the most important goods in terms of volume. Since the timber preferred for fuel is smaller and of a different species than the trees chosen for lumber, this use typically causes little conflict with commercial logging for lumber. But over-cutting for fuel wood has resulted in shortages in several areas

(Vientiane municipality, Luang Prabang, Xieng Khouang, Savannakhet, and Bokeo provinces) (Salimath et al., 2024).

Because the trees are sought after for lumber and the sap is utilized by the locals for lamp fuel, waterproofing baskets, and other purposes, the extraction of yang oil presents a significant risk of conflict. A rural family considers every tree they tap to be their property. People receive 5,000 kips per tree if loggers choose to cut them. If locals are permitted to choose the straightest, strongest, and fastest-growing trees from the plantation, cutting poles may interfere with commercial forestry and lower the standard (Chanthirath, 2016).

The geographic location of Laos, which has no beaches, limits its tourism options. Laos, which is deeply Buddhist, has several major destinations. Tourist attractions in Laos that are presented to attract tourists include holy sites, historical sites, waterfalls, and museums. It's not much more than that. Laos' income from the tourism sector is not much higher than its income from the agricultural sector. This condition is the reason why Laos still relies on sectors such as agriculture and mining to support its economy.

Deforestation in Laos

Deforestation in Laos is a critical issue primarily driven by anthropogenic activities. According to Global Forest Watch data, Laos has lost 322,000 hectares of forest (Ecohubmap, 2024). Studies show that one of the main causes of deforestation in Laos is shifting, or swidden, agriculture, which has long been considered a major environmental threat. The expansion of cassava production has become an increasingly important driver of land-use change in Laos. In 2022, cassava was reported as one of Laos' major agricultural

export commodities, with rising demand from neighboring markets such as Viet Nam and Thailand (Xinhua, 2022). This increase was not merely incidental; cassava exports continued to grow as the commodity became more profitable for farmers and traders. For example, Laos reportedly earned around USD 85 million from cassava exports in February 2023 alone, indicating the growing economic significance of cassava in the agricultural sector. As demand increased, forest land was converted into cassava plantations, adding pressure to forest ecosystems and contributing to deforestation. Looking at the historical side, deforestation has occurred in the Nakai-Nam Theun national protected area since the post-Vietnam War period. This condition resulted from population growth and government policies that encouraged agricultural development. However, after this period, there was stability and even an increase in forest cover driven by intrinsic factors such as the culture of local people who tend to settle and not damage the environment, as well as extrinsic factors such as the wildlife trade that provides alternative income for residents (Robichaud et al., 2009). However, logging practices and conversion of forests to other uses contribute heavily to deforestation. The lack of comprehensive national land-use zoning and poor forest management plans are major obstacles to addressing this problem. Based on research by Kim and Alounsavath, natural regeneration of degraded forests has significantly increased forest cover in northern Laos. However, many challenges remain, such as weak law enforcement (Kim & Alounsavath, 2015).

The conversion of forest land into agricultural land or into plantations, such as

cassava plantations, is due to high demand. Cassava becomes a profitable product in Laos. Laos exports cassava to countries such as Vietnam and Thailand to meet the demand of the flavoring industry, including monosodium glutamate. Laos' profit from its cassava sales in February 2023 reached USD\$85 million (Initiative, 2023). In addition to the conversion of forests into cassava plantations, the conversion of rubber plantations also contributes significantly to deforestation.

Besides land conversion and swidden agriculture, illegal logging and timber harvesting are other major factors contributing to deforestation in Laos. Timber is one of the leading commodities in Laos, especially for export. Many timber industries have emerged as the timber trade has grown. Many forest areas in Laos have been severely degraded due to uncontrolled logging and the absence of efforts to promote forest sustainability. In 2013, Laos was reported to have exported at least 1.4 million cubic meters of timber to China and Viet Nam (Agency, 2016). Many forests in Laos are illegally logged by companies affiliated with markets in China and Viet Nam to supply timber to these two countries. Before the COVID-19 pandemic, the Lao government did not provide clarity on the legal status of logging, whether legal or illegal (Barney & Canby, 2011). The government does not enforce laws against illegal logging by large companies. Instead, the government inspects small-scale industries or loggers, and only 5% of the timber is confiscated.

An additional 100,000 hectares of forest land are impacted each year by the expansion of permanent annual agriculture and cow-grazing areas, which are linked to land clearance for shifting cultivation

(Chanthirath, 2016). Despite being regarded by farmers as a valuable tool, fire has detrimental impacts that gradually erode forest areas and inhibit natural regeneration by killing young trees and other biodiversity. It is quite challenging to predict the exact region under fire each year, though. Nonetheless, forest fires remain a major problem for the forestry industry each year, and local authorities remain concerned about them. The forestry sector has worked with local authorities to implement numerous laws and directives to manage forest fires. They have also provided locals with technical advice to help them monitor and control forest fires (Chanthirath, 2016).

Forest degradation mainly occurs in the North and the Center, caused by, among others, slash-and-burn farming practices resulting from fluctuating population in the mountains, which culminate in soil erosion in the Northern part of Vientiane Province. During the late twentieth century, Lao PDR experienced substantial population growth. According to World Bank data, the country's population increased from approximately 3.29 million in 1980 to 5.43 million in 2000 and continued to rise to approximately 7.77 million in 2024 (World Bank, 2025). The historical population increase is relevant because it provides demographic context for the period in which forest conversion and shifting cultivation were widely practiced in the upland regions. Following the country's political stabilization in the 1990s, the return of Lao refugees may also have contributed to changes in settlement and land-use patterns.

Many upland ethnic communities traditionally practiced shifting cultivation as part of their livelihood strategies. However, when cultivation cycles are shortened and fallow periods are reduced,

these practices could place greater pressure on forest ecosystems (Chanthirath, 2016).

Deforestation in Laos has wide-ranging impacts, not only on the environment but also on social and economic aspects. Loss of forest cover results in habitat degradation, decreased biodiversity, and increased risk of natural disasters such as landslides and floods. In addition, deforestation impacts global climate change by increasing greenhouse gas emissions from forest fires and soil degradation. Deforestation also affects the health of local communities. A study showed that deforestation is associated with an increase in malaria cases in the short term, although in the long term, malaria incidence tends to decrease (Rerolle et al., 2020). This view suggests that ecosystem changes due to deforestation can affect the dynamics of disease spread. The spread of malaria becomes easier in newly deforested areas due to changes in mosquito vector habitats and increased human interaction with degraded environments.

The decline in biodiversity due to deforestation threatens the survival of endemic flora and fauna species, many of which depend on healthy forest ecosystems (Jainuddin, 2023). Flora and fauna species have their own roles as ecosystem balancers. If one of them becomes extinct, it will have a domino effect. For example, the trees and plants in the forest that were originally used as shelter and food sources by animals are now gone, so animals in the forest cannot continue their lives there. In addition, the trees and plants in the forest that originally functioned to retain water are now gone, and the water that should have been retained by the trees' roots will continue to flow, potentially causing landslides. Forest loss will also exacerbate the greenhouse effect, which in turn

accelerates climate change. Because climate change is a global and transboundary issue, its environmental, social, and economic impacts may extend beyond national borders and become a matter of international political concern (Bodansky, 2010). However, climate change should not be regarded as the sole or direct cause of conflict. Rather, it may act as a risk multiplier by intensifying resource scarcity, livelihood insecurity, displacement, inequality, and existing political tensions, particularly in countries with weak governance and limited adaptive capacity.

In addition, deforestation also affects the socio-economic lives of local communities who depend on forests for many of their needs (Salimath et al., 2024), including firewood, food, and traditional medicines. The loss of forests depletes essential natural resources for people's survival, increasing their economic vulnerability. Research shows that communities' dependence on forests for livelihoods makes them vulnerable to ecosystem changes caused by deforestation. When forests are lost, communities are forced to seek alternative livelihoods that may not always be available or sustainable (Hiratsuka et al., 2022). Evidence from a project-scale REDD+ initiative indicates that such interventions can reduce pressure on forests while improving income generation among participating local communities.

The demand for energy wood also exacerbates deforestation and forest degradation, although the Lao PDR has few laws and incentives supporting sustainable firewood gathering or other energy sources. Since most people still cook and heat with firewood or charcoal, about 2.4 million m³ of wood fuel are utilized annually (Sánchez-

Triana, 2021). In Lao PDR, there are still few opportunities to transition to more contemporary cooking energy sources, especially in rural areas where firewood is readily available and can be freely gathered from the surrounding environment. In contrast, the majority of households believe that cooking with electricity is too costly, and only affluent metropolitan areas near distribution networks use liquefied petroleum gas (LPG). The low adoption of cooking with electricity and LPG is also due to Lao PDR cuisine being primarily grill-based and to the fact that using electric stoves will ultimately alter the dish's flavor (World Bank, 2019).

Deforestation in Laos also affects communities' social lives. The granting of land concessions to large companies often leads to conflicts between local communities and the investors. These conflicts usually revolve around issues such as land access, land rights, and natural resource management. Inequities in land distribution and economic benefits from forest exploitation often trigger social tensions and discontent among affected communities (Phompila et al., 2017). Research shows that unfair land allocation can prolong social conflicts and hinder sustainable forest conservation efforts. Land conflicts between local communities and investors often arise due to unfair and poorly planned land allocation. Research shows that the expansion of rubber plantations is one of the main factors in forest conversion in Laos, resulting in the loss of primary forests and increased pressure on shifting cultivation lands.

Laos Endeavor in Controlling its Deforestation

Lao PDR's efforts to address deforestation began before the introduction of REDD+. The country had established a domestic forestry framework through the Council of Ministers' Instruction No. 74 on Forest Protection in 1979, the National Forestry Conference in 1989, and the Forestry Law of 1996. The 1989 conference introduced the goal of restoring forest cover to 70% of the national territory, which was later incorporated into the Forestry Strategy to the Year 2020, adopted in 2005. REDD+ should therefore be understood not as the starting point of forest conservation in Laos, but as a later mechanism that connected the existing forestry framework to climate change mitigation and forest carbon management. The implementation of the REDD+ mechanism is explicitly identified as a priority action to prevent climate change in the 8th National Socio-economic Development Plan (NSED), alongside the draft REDD+22 Strategy (currently under review). Additionally, it highlights Forest Law Enforcement, Governance, and Trade (FLEGT) as a crucial tool to support the Lao PDR's planned NDC emission-reduction pledges, including the goal of increasing forest cover to 70%. Furthermore, the National Green Growth Strategy (NGGS) 2030 is centered on the sustainable management of natural capital, with forests serving as the primary component (Kornexl et al., 2020).

One of the main initiatives in addressing deforestation in Laos is the implementation of Reducing Emissions from Deforestation and Forest Degradation (REDD+), which, following ten years of talks, is finally codified in Article 5 of the Paris Agreement and may help the Lao PDR meet its goals for climate change mitigation and sustainable forest management. This policy is an effort led under the United

Nations Framework Convention on Climate Change (UNFCCC), designed to reduce greenhouse gas emissions by 60–69 MtCO₂e from deforestation and forest degradation, and to increase forest carbon stocks. REDD+ provides incentives for developing countries to conserve their forests, improve forest management, and rehabilitate degraded forests (Ingalls & Dwyer, 2016).

The three stages of REDD+ implementation are REDD+ Readiness, REDD+ strategy implementation, and the eventual flow of results-based rewards for national initiatives that lower emissions in the forest sector. When REDD was included in the Bali Action Plan at COP13 in 2007, it garnered significant attention from the UNFCCC and the community in attendance. Forest carbon stock improvement, conservation, and sustainable forest management were all part of the REDD+ extension (Koch, 2017). However, the effectiveness of REDD+ in Laos still faces several challenges, including limited local capacity, weak stakeholder coordination, and minimal involvement of local communities and civil society (Lestrelin et al., 2013).

The Lao government has taken significant steps to address deforestation through national policies. One important step has been the establishment of protected areas covering 62% of Laos' land area. However, the effectiveness of these protected areas varies, with some categories of areas unable to significantly reduce deforestation. Analysis shows that only National Protected Areas are truly effective in reducing deforestation, while other categories have less meaningful impacts (Kukkonen & Tammi, 2019). Therefore, the government plans to redelineate protected areas to ensure more

effective management of high-priority conservation areas.

In 2012, the previous government made an effort to control better the growth of concessions in the mining and industrial plantation industries. The approval of certain concessions and, consequently, the removal of timber from those areas is prohibited by Prime Minister's Order No. 13/PM 2012, which suspends consideration and approval of new investment projects about mining exploitation and surveying, rubber, and eucalyptus plantations. This measure represented an important acknowledgment by the government of the environmental and social problems arising from large-scale concessions. However, its overall impact was limited rather than transformative because it applied only to selected sectors. Hydropower projects and plantations involving other species could still be approved, allowing forest conversion and timber extraction from natural forests to continue (Dwyer & Ingalls, 2015; Koch, 2017). Therefore, although the Order constituted a meaningful policy intervention, it did not significantly alter the broader development model that continued to promote resource-intensive investment. The Lao government has also made numerous attempts to prevent illicit logging and the export of raw timber since the initial logging ban in the early 2000s. As in past efforts, the most recent attempt to do so in August 2015 (Notice of Government Office No. 1360/GO) has only been partially successful. The Government of Laos temporarily prohibited the cutting of timber from National Production Forest Areas (PFAs) with Prime Minister Decree 31 of 2013. However, because there are no marketable tree species with minimum harvestable

diameters in Production Forest Areas, commercial logging is not considered a significant cause of deforestation (Lestrelin G et al., 2013).

The use of modern technologies, such as remote sensing for forest monitoring and geographic information systems (GIS), also plays an important role in efforts to address deforestation in Laos. These technologies enable real-time monitoring of forest cover and support better decision-making in forest resource management. Studies show that the use of these technologies can help identify areas that require conservation interventions and design more effective forest management strategies (Keonuchan & Liu, 2008).

Under REDD+ initiatives, the Lao government will also compute carbon credits and prevent the issuance of false carbon credits using cutting-edge AI satellite technology. According to the report, this technology is essential for lowering fraud, saving money, and expediting procedures, all of which strengthen Lao's resolve to have a more environmentally friendly future. Setting new norms, the pilot project represents a huge leap forward in carbon credit calculation, establishing new benchmarks for accuracy and transparency. The aim is to enhance the measurement of carbon content in forests throughout Laos and the larger Association of Southeast Asian Nations (ASEAN) region. The value of carbon credits is maintained through ongoing monitoring (Xinhua, 2024).

In addition to policy and technology, empowering local communities is also a key component of efforts to address deforestation in Laos. Environmental education and capacity-building programs in sustainable forest management can have

long-term positive impacts. For example, the REDD+ program in Laos includes training for local communities to adopt more sustainable forest management practices and to improve their livelihoods through technology transfer and participation in forest management (Hiratsuka et al., 2020).

However, implementing these programs has not always been smooth. Some research, such as that by Hiratsuka et al., shows that REDD+ implementation performance differs across villages in the northern region of Laos, related to differences in natural resources, social characteristics, and the ability to adopt alternative livelihoods (Hiratsuka et al., 2020). Therefore, it is important to understand the specific features and capabilities of rural communities within each village to avoid implementation difficulties and maintain REDD+ sustainability.

There are also some challenges in ensuring social justice in REDD+ implementation. Research shows that REDD+ can raise environmental justice concerns, particularly regarding benefit distribution and local community involvement in decision-making. Under the authoritarian political regime in Laos, control over civil society and ethnic minority groups can hamper procedural and distributional justice. Therefore, a more inclusive and equity-oriented approach to REDD+ implementation is needed to ensure that the program's benefits accrue to all parties, especially to communities most affected by deforestation (Ramcilovic-Suominen et al., 2021). From GPT's perspective, these inequalities should not be understood merely as administrative shortcomings in REDD+ implementation. Rather, they reflect deeper structural

imbalances in the distribution of political authority, control over forest resources, and access to decision-making. Carter (1999) argues that environmental policies cannot produce transformative outcomes when they operate within political and economic structures that preserve unequal power relations and prioritize state control and economic growth. In the case of Lao PDR, REDD+ may extend state authority over forests and local land-use practices while providing forest-dependent communities with limited influence over policy design, benefit-sharing, and resource governance.

Efforts to reduce deforestation in Laos also face challenges from economic and political factors. Industrial plantation development, large infrastructure projects, and foreign investment are often key drivers of deforestation. REDD+ policies must rise to this challenge by engaging with powerful actors who wield significant influence over the exploitation of forest resources. This policy requires more politically engaged and nationally owned planning, which also challenges the prevailing logic of avoiding the main drivers of deforestation (Cole et al., 2017).

In addition to REDD+, the Lao government has also developed a sustainable forest management strategy that focuses on biodiversity conservation and natural resource management. These sustainable forest management practices include logging regulation and control, management of high-conservation-value forests, and implementation of certification programs. Although progress has been made, the adoption of sustainable forest management practices remains relatively slow, and accelerated implementation is needed to reduce further forest loss (Dennis et al., 2008). Salimath et al. (2024) found

that education, access to information, income, land ownership, and forest dependence significantly influence local participation and conservation behavior, while Sawathvong et al. (2024) reported that government agencies and development partners continue to dominate forest-related consultations, with limited participation from non-state actors. Thus, policy progress has occurred, but effective implementation still depends on stronger local capacity, access to information, and meaningful community participation.

CONCLUSION

Deforestation in Laos triggers both domestic and international problems. On the domestic side, deforestation in Laos can trigger local natural disasters and social problems, likely affecting political stability. The case of deforestation in Laos, if examined closely, has a similar concept to the tragedy of the commons. In Laos, the exploitation of forests for timber and the conversion of forests to agricultural land for profit will cause scarcity and the extinction of forest flora and fauna.

Global issues such as climate change and rising global temperatures affect all countries. Therefore, as a country with a presence in the world and an “inhabitant” of the earth, and as a country that supports peace, Laos is aware and willing to make efforts to overcome deforestation that has long persisted. As a member of the United Nations, Laos has taken steps to address long-standing deforestation by committing to the Reducing Emissions from Deforestation and forest Degradation (REDD+) program. The larger causes of deforestation and forest degradation must also be addressed by REDD+, as Dwyer and

Ingalls (2015) state. This condition means that, in addition to shifting cultivation, it must also address factors such as infrastructure development, industrial tree farms, and agricultural plantations. Although there are many challenges and obstacles to implementation, including economic and political constraints and the social life of the people, Laos still has the opportunity to restore its lost forests. If Laos consistently fulfills its commitments to the program and continues to make efforts to improve itself, such as strengthening policies and improving the quality of its human resources, Laos still has hope of restoring the natural forest land that has been lost. Thus, Laos is helping maintain the availability of natural resources and prevent the severity of global environmental issues that can cross national borders.

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