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Review

Community Forest Management and REDD+: Pathways to Effective Implementation, Livelihood Improvement, and Climate Change Adaptation in Cambodia

Chaly Y, Karen F. Hytten and Diane Pearson *

School of Agriculture and Environment, College of Sciences, Massey University, Palmerston North 4414, New Zealand; c.y1@massey.ac.nz (C.Y.); k.hytten@massey.ac.nz (K.F.H.)
* Correspondence: d.pearson@massey.ac.nz; Tel.: +64-6951-7837

Abstract: Community Forest Management (CFM) and REDD+ projects have emerged as key strategies for promoting environmental conservation and livelihood improvement. This review explores the effectiveness of incorporating free, prior, and informed consent (FPIC), safeguard principles, grievance redress mechanisms, and benefit-sharing mechanisms into CFM and REDD+ in Cambodia, with a focus on enhancing communities' livelihoods and climate change adaptation. This paper synthesizes findings from recent literature on CFM and REDD+ in Cambodia and internationally, analyzing key case studies, policy frameworks, and community engagement strategies. Findings suggest that while REDD+ projects offer potential economic and ecological benefits, challenges related to land tenure, equity in benefit-sharing, and community participation remain. This review highlights the need for stronger community engagement, a robust conflict management structure, clear land tenure policies, equitable benefit-sharing mechanisms, and more climate change adaptation activities to ensure the success of CFM and REDD+ projects in Cambodia and the Global South.

Keywords: forestry; free, prior, and informed consent; safeguards; benefit-sharing mechanisms; equity; land tenure; carbon rights; livelihood improvement; climate change adaptation

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1. Introduction

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a critical program that not only contributes to reducing deforestation and forest degradation rates but also promotes sustainable forest management, forest resource conservation, and carbon storage enrichment [1]. Through this initiative, developing countries are eligible to receive results-based payments for reducing emissions associated with deforestation and forest degradation [2]. A growing body of literature documents many benefits associated with REDD+ projects, including increased stakeholder participation [3,4], improved community livelihoods [5–7], strengthened monitoring capacity [8,9], improved forest governance [10], and the protection of indigenous and community land rights [11–13].

Globally, deforestation and forest degradation contribute approximately 15% of all anthropogenic greenhouse gas emissions and, as such, are a key driver of climate change [14], contributing to biodiversity loss, increasing soil erosion, and negatively impacting the livelihoods of local communities [15,16]. REDD+ is seen as one effective mechanism that contributes to addressing these issues. Since 2013, 60 countries from the Global South, covering about 1.35 billion hectares, equivalent to 62% of forest areas, have submitted reports to the UN Climate Change Secretariat regarding activities to reduce deforestation

and forest degradation [17]. Among these countries, 17 contributed to reducing 11.6 billion tons of carbon dioxide. Specifically, according to its first Biennial Update Report, Cambodia was responsible for reducing emissions by 46,337,172 tons of CO_2 in 2018 through the REDD+ program [18]. This represents an important contribution to achieving Cambodia's targets under the 2015 United Nations Paris Climate Agreement, which aims to limit the global average temperature increase to 1.5 °C to reduce the impacts of climate change [19].

In recent decades, Community Forest Management (CFM) has emerged as a significant framework for forest management globally [20]. It involves community-based and co-management systems and encompasses many types of entities, including community forests, community protected areas, community fisheries, and indigenous community land titling. CFM plays a crucial role in sustainable forest management and local livelihood improvement. It has been found to contribute to a reduction in the over-exploitation of forest resources, the restoration of degraded land areas, and improved collaboration with local government agencies [21,22]. It can also provide multiple livelihood opportunities for community members, contributing to building both financial and technical capacity to deal with stresses, such as the negative impacts of climate change [23,24].

There are strong links between CFM and the REDD+ program. REDD+ provides financial, technical, and social benefits to communities by protecting forests, conserving wildlife, and establishing alternative livelihoods [25–27]. Conversely, CFM plays a key role in the effectiveness and sustainability of REDD+ [28]. Communities help REDD+ projects succeed by contributing their expertise in managing forests [29–31], including monitoring forests, protecting biodiversity, and increasing forest carbon stocks [22,32–38].

CFM is crucial for the success of REDD+ projects [39–41]. As such, the rights to access forest resources and the carbon rights of communities who are part of the CFM are critical [39,42]. Communities work more effectively when they have fully granted forest tenure and carbon rights. Carbon rights comprise two fundamental concepts: (1) property rights to sequester and store carbon contained in land, trees, etc., and (2) the rights to benefits that arise from the transfer of these property rights through emissions trading schemes [43,44]. Carbon rights underpin benefit-sharing mechanisms for stakeholders, especially communities, leading to lower deforestation and forest degradation rates, increasing forests' carbon storage, improving forest governance [45], and contributing to the success of REDD+ projects [46]. REDD+ benefit-sharing mechanisms encompass a comprehensive range of institutional methods, institutions, and tools used to distribute funds and other advantages derived from REDD+ projects [47]. However, numerous studies indicate that many communities currently possess limited forest tenure and carbon rights [9,48–54].

Only when communities' rights are fully recognized and legalized can they participate fully in decision-making processes related to REDD+ project design, implementation, management, and benefit-sharing [48,55,56]. Effective benefit-sharing mechanisms have the potential to support community livelihood development programs [57–59], contribute to communities' capacities to withstand unexpected shocks, and enhance their resilience to climate change [60,61].

This review has three main objectives. The first objective is to explore how indigenous and local communities' rights are being recognized in REDD+ projects in Cambodia. In particular, the concepts of free, prior, and informed consent (FPIC), safeguards principles, and grievance redress mechanisms will be introduced, and the effectiveness of how they are currently being implemented in REDD+ projects in Cambodia will be considered. The second objective is to investigate different benefit-sharing approaches employed in REDD+ projects in Cambodia. The final objective is to evaluate how REDD+ projects contribute to communities' climate change resilience through livelihood development programs.

This paper is divided into seven main sections. Section 2 provides important background information on the drivers of deforestation and forest degradation in Cambodia. It also introduces community forests and outlines the scope of the REDD+ program in Cambodia. Section 3 then explores how FPIC, safeguards principles, and grievance redress mechanisms have been implemented by REDD+ projects in Cambodia. Next, Section 4 considers how REDD+ projects implement benefit-sharing arrangements and benefit distribution to different stakeholders, especially indigenous peoples and local communities. Section 5 then reviews the literature on how REDD+ projects utilize REDD+ benefits to help communities adapt to climate change impacts. Finally, Sections 6 and 7 discuss the key findings in a wider context and identify potential areas for future research and policy recommendations for both Cambodia and beyond.

2. Background

2.1. Drivers of Deforestation and Forest Degradation in Cambodia

Cambodia has undergone considerable forest loss over the last 50 years. In 1973, Cambodia had 13.22 million hectares of forest, equivalent to 73.04% of land cover. By 2018, this was reduced to 8.5 million hectares, only 46.86% of land cover [62,63]. From 2001 to 2022, Cambodia experienced a decrease in humid primary forest area by 1.39 million hectares, which represents 52% of the total fall in tree cover during that time [27,64].

The Forest Carbon Partnership Facility identifies six direct drivers of deforestation and forest degradation in Cambodia: unsustainable logging; unsustainable wood fuel collection; agricultural expansion; the expansion of settlements; infrastructure development; and fire [65]. There are also many indirect drivers of deforestation and forest degradation in Cambodia. These include limitations associated with forestry governance including limited institutional capacity; weak policy implementation; inadequate law enforcement; a lack of transparency and accountability; low levels of stakeholder participation; a lack of incentives for sustainable forest management; and a lack of finance to support sustainable forest management. Deforestation and forest degradation is also being driven by broader social and economic trends in Cambodia including: population growth; high levels of poverty; new settlements and migration into forest areas; growing demand for forest resources; the increasing accessibility of forests; low agricultural yields; social norms associated with claiming land through utilization; and a limited awareness of the social and environmental benefits of forests [65–68].

2.2. Communities and Their Involvement in Forest Management in Cambodia

There are four main types of community forest management that have been involved in REDD+ projects in Cambodia: community forests (CFs), community protected areas (CPAs), indigenous community land titling (ICLTs), and community fisheries (CFis) (see Table 1).

Table 1. Types of community forest management in Cambodia.

CFM	Description	Number and Size
Community Forests	The Cambodian Forestry Law 2007 and Sub-decree No. 79 2003 provide the legal structure for rural communities to participate in forest management through community forestry in forest areas they have traditionally utilized [69,70].	As of 2023, there are 648 CFs, covering 528,340 hectares [71].

Table 1. *Cont.*

CFM	Description	Number and Size
Community Protected Areas	CPAs are establishments based on the Guideline on Procedure and Process of Community Protected Area Establishment 2017, issued by the Ministry of Environment. They are areas traditionally managed by communities in the community zone of protected areas [72].	As of 2022, there are 182 CPAs, covering 309,463 hectares [72].
Indigenous Community Land Titling	ICLT is a land titling program developed by the Cambodian Government with support from development partners, aiming to help indigenous communities to formally register with the Ministry of Interior in accordance with the Land Law 2001 and the Sub-decree on Procedures for Registering of Land of Indigenous Communities 2009 [11].	As of 2022, 40 of Cambodia's 488 indigenous communities have obtained collective land titles [73].
Community Fisheries	Defined by the Fisheries Law 2006 and the Sub-decree on Community Fisheries Management 2007, CFis are fishing domains including mangroves and flooded forests controlled by the state and handed over to communities, who live in and/or around the fishing domain, depend on it for their daily life, and use traditional fishing methods [74].	As of 2023, there are 516 CFis [74].

2.3. Status of REDD+ Program in Cambodia

Cambodia's first REDD+ project was established in 2008 in Oddar Meanchey province, with support from partners including Terra Global Capital, Pact, Children's Development Association, and Community Forestry International [75]. At that time, there was no national REDD+ management body or official assistance from international organizations. Cambodia submitted a proposal for readiness planning to the Forest Carbon Partnership Facility (FCPF) and became a partner country of the UN-REDD Program in 2009. Cambodia signed a national program agreement with the UN-REDD Program in 2011 enabling Cambodia to receive both financial and technical assistance from the UN-REDD+ Program, leading to REDD+ preparation at the national level and REDD+ pilot project implementation at the sub-national and project levels [76].

To effectively coordinate and manage this national program, a taskforce and secretariat were established [77]. The role of the taskforce is to organize and oversee the development of strategies and terms of reference for REDD+ project implementation, make decisions on the implementation of REDD+ projects, monitor projects' results, and report to the government. The role of the taskforce's secretariat is to facilitate the formulation of policies and strategies for REDD+ in Cambodia by aiding the REDD+ taskforce. The secretariat is also responsible for implementing the vision of the taskforce to build a national REDD+ program, including organizing and coordinating technical and financial operations, as well as seeking cooperation from government agencies, development partners, NGOs, and other stakeholders. It also serves as the main focal point and coordinating mechanism for REDD+ implementation in Cambodia [78,79].

As of May 2025, there are 12 REDD+ projects in Cambodia (as illustrated in Figure 1). Seven have been officially registered with Verra, a non-profit organization that manages the world's leading voluntary carbon markets program, the Verified Carbon Standard (VCS) [80]. The Prey Lang REDD+ project is registered with a Joint Crediting Mechanism (JCM) developed by Japan to accurately assess Japan's contributions to reducing or re-

moving greenhouse gas emissions [81,82]. Additional REDD+ projects are currently being planned and developed [83].

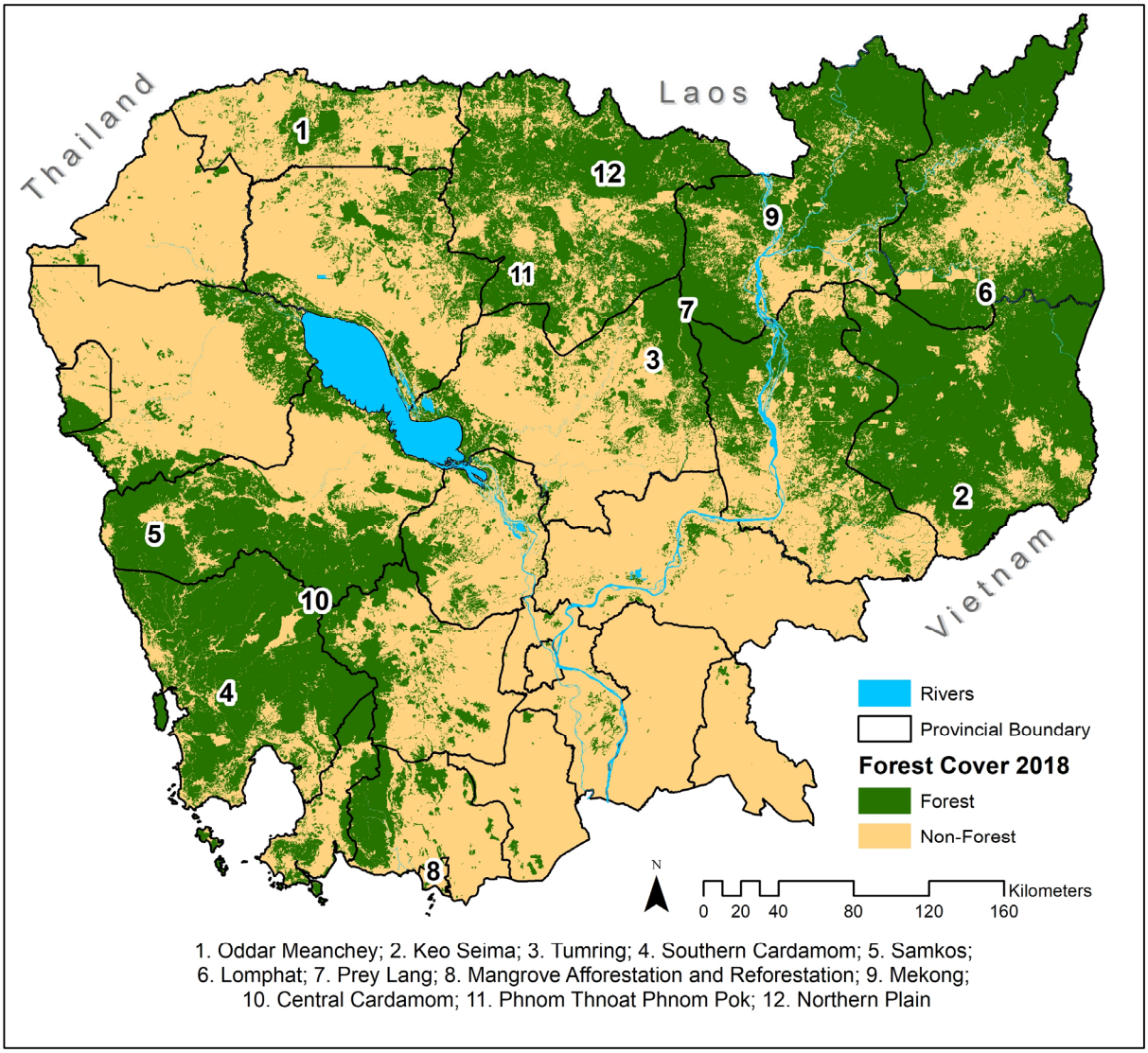


Figure 1. Locations of REDD+ projects in Cambodia.

2.4. The Legal Framework for REDD+ in Cambodia

The key national policy guiding REDD+ program implementation in Cambodia is the National REDD+ Strategy (2017–2026), which aims to reduce deforestation and forest degradation rates, conserve and sustainably manage forest and biodiversity resources, and contribute to poverty reduction. To achieve this goal, one of the guiding principles is to ensure full and effective participation of relevant stakeholders, including local communities and indigenous peoples [83]. Four REDD+ technical working groups have been established to support the REDD+ Secretariat in implementing the REDD+ strategy. The working groups oversee the direction and execution of REDD+ technical efforts, examining the best ways to implement REDD+ safeguards principles and benefit-sharing arrangements in REDD+ projects, and formulating technical recommendations in their respective areas of expertise. These teams consist of technical personnel from several government agencies and representatives from civil society, including indigenous peoples and non-governmental organizations.

In 2019, Cambodia submitted its First Summary of Information on Safeguards to the UNFCCC to show how it safeguards the rights of indigenous peoples and local communities

when implementing REDD+ projects [84]. Table 2 summarizes the core elements of these social safeguard principles.

Table 2. Key social safeguards in Cambodia's First Summary of Information on Safeguards [84].

Safeguard	Clarification of the Cancun Safeguards in Accordance with the Country Context	Core Elements Recognized and Protected in the Implementation of the REDD+ Strategy
Safeguard B	The rights of access to information, accountability, justice, gender equality, land tenure, and fair distribution of benefits will be clarified, respected, and promoted in the application of the National REDD+ Strategy.	1. Right to access information. 2. Right to access justice. 3. User rights over forest land (particularly for indigenous peoples and women). 4. Fair distribution of benefits.
Safeguard C	The REDD+ Strategy will be implemented in accordance with recognition of, and respect for, the rights of indigenous peoples and local communities, including the rights to non-discrimination, traditional knowledge and culture, self-determination, benefit-sharing, and collective tenure rights.	1. The rights of indigenous peoples, local communities, and women. 2. Traditional knowledge.
Safeguard D	The right to participate in an effective manner, including free, prior, and informed consent for relevant indigenous peoples and local communities, will be recognized and promoted under the implementation of the REDD+ Strategy.	1. The rights of indigenous peoples and local communities, especially women, to participate in implementation of policies and measures. 2. Right to free, prior, and informed consent.

3. REDD+ Projects and Community Participation

3.1. Communities' Roles in Implementing REDD+

Communities have many roles in REDD+ projects in Cambodia, including project monitoring, forest patrolling, reducing drivers of deforestation and forest degradation, and conserving forests and wildlife. For example, a study conducted by Nhem et al. [15] investigating community forests in Oddar Meanchey province and Kampong Thom province found that community members play crucial roles in forest patrolling, conserving and preserving forests and biodiversity, and participating in community forest decision-making processes.

Through voluntary international standards like the Verified Carbon Standard (VCS) and the Climate, Community, and Biodiversity Alliance (CCBA) Standard, REDD+ projects are increasingly integrating biodiversity conservation components into their project designs [85]. Communities play a crucial role gathering relevant biodiversity data and information in a rapid and cost-effective manner [86]. This role can build a sense of trust among community members in terms of being involved in REDD+ project implementation, aligning with the UNFCCC's recognition of the full and effective engagement of local and indigenous peoples. Communities have also been participating in carbon monitoring as part REDD+ projects using low-cost and simple tools. For example, bamboo sticks and plastic rulers or calipers are used to measure tree diameters and calculate carbon storage [87,88]. Some communities are also involved in forest and carbon monitoring and reporting by using remote-sensing data produced by forestry experts, making a vital contribution to data collection and the effectiveness of REDD+ project implementation [89,90].

Communities also contribute to reductions in deforestation and forest degradation rates. For example, Pauly et al. [27] used satellite data, project information, and government economic land concession data to compare three Cambodian REDD+ projects (the Tumring REDD+ project, Cardamom REDD+ project, and Keo Seima REDD+ project). They found

that these REDD+ projects significantly reduced deforestation by providing funding to targeted community forests, maintaining strict monitoring, and enforcing stringent laws throughout the project areas. This reduction in deforestation and forest degradation rates is critical, as it not only protects forest resources and biodiversity but also significantly contributes to climate change mitigation through emission reduction and carbon sinks [91].

Currently, there are 12 REDD+ projects with different sizes, estimated annual emission reduction rates, and crediting periods (see Table 3). For instance, with a project size of more than 465,000 ha, the Southern Cardamom REDD+ project has potential to reduce annual emissions by almost 4 million tons of CO_2 equivalent [92].

Table 3. REDD+ projects in Cambodia.

No.	REDD+ Project	No. of Villages	No. of Families	No. of CFs	No. of CPAs	No. of ICLT	No. of CFis	Project ID	Size (ha)	Estimated Annual Emission Reduction (Tons CO_2e)	Crediting Period	Source
1	Oddar Meanchey	58	9915	13	-	-	-	904	63,831	204,792	2008–2038	[92]
2	Keo Seima	17	2552	-	07	15	-	1650	166,983	1,426,648	2010–2069	[92]
3	Tumring	19	3252	16	-	-	-	1689	67,791	378,434	2015–2044	[92]
4	Southern Cardamom	21	2475	14	-	-	-	1748	465,839	3,867,568	2015–2044	[92]
5	Samkos	22	3041	06	-	-	-	3341	282,718	1,549,341	2019–2049	[92]
6	Lomphat	32	7308	-	03	-	-	3434	134,730	239,752	2018–2047	[92]
7	Prey Lang	49	13,118	03	16	03	-	KH005	431,683	327,653	2018–2029	[93]
8	Mangrove Afforestation and Reforestation	-	-	-	-	-	13	5071	3000	28,650	2025–2045	[92]
9	Mekong	24	-	14	-	-	-	-	30,526	215,549	-	[94]
10	Central Cardamom	22	3296	01	06	17	-	-	401,313	-	2021–2051	[95]
11	Phnom Thnoat Phnom Pok	*							42,097			[96]
12	Northern Plain	*							518,130			[96]

* No data are currently available for these projects.

FPIC processes establish conditions for people to exercise their fundamental right to negotiate the terms of externally imposed policies, programs, and activities that directly affect their livelihoods or wellbeing, and to give or withhold their consent to them [97,98]. REDD+ project proponents and carbon development partners apply FPIC principles to abide by VCS and JCM standards. Activities such as gathering villagers' thumbprints and signing ceremonies were conducted in target villages and communities to show agreements required by the carbon standards [99].

There is limited literature documenting how FPIC processes were conducted in REDD+ projects. Milne and Mahanty [100] describe the FPIC process used in the Keo Seima REDD+ project. First, awareness-raising events about REDD+ and REDD+ social impact assessment were conducted across the project area. Next, the FPIC agreement was drafted, with input from government officers, the Wildlife Conservation Society (WCfS), and a contracted legal firm. The WCS was then instructed by the government to seek individual consent from at least 1000 households in the project area. Finally, once those consents had been obtained, a FPIC agreement signing ceremony was held. Community leaders were chosen as representatives to sign FPIC agreements with the Forestry Administration, agreeing on REDD+ implementation. Overall, Milne and Mahanty argued that the FPIC process in the Keo Seima project was inclusive.

3.2. Challenges Associated with Community Participation

3.2.1. Ineffective Implementation of Safeguards and Grievance Redress Mechanisms

Several studies provide evidence that REDD+ projects in Cambodia are not effectively implementing safeguard principles and grievance mechanisms [101–106]. Safeguard principles are one of the four key building blocks required by the UNFCCC's COP19

that developing countries must have in place to receive results-based payments [107,108]. Grievance Redress Mechanisms (GRMs) are formal or informal processes for the resolution of complaints or disputes, involving organizations and individuals whose rights may be impacted by the implementation of REDD+ activities. They can range from communication to negotiation, mediation, or arbitration [109].

REDD+ projects receive carbon credits referred to as Verified Carbon Units (VCUs) [110]. Each VCU signifies a decrease or elimination of one ton of carbon dioxide equivalent (CO_2e) achieved by a project. VCUs are defined by several quality assurance standards that are validated by the project validation and verification process, as well as Verra's evaluation and approval. VCUs are ultimately acquired and decommissioned by an end user to mitigate their emissions. However, some argue VCUs are not designed for people in the tropics but for greenhouse gas emitters in the Global North [101,102,105]. For instance, it was never the intention of the Oddar Meanchey REDD+ project to offer direct monetary compensation to participants who would have to give up their access to forest areas. There was never a system to deliver direct payments to people or households that could serve as an incentive to conserve local forests. The project also never attempted to provide an analysis of opportunity costs or conduct forecasts of carbon prices to predict the required amount of cash needed to act as an incentive to maintain forests. Instead, VCUs were generated to sell to corporations such as Microsoft and Virgin, which increase values to their commodities and services [101]. The primary focus of the project was to utilize communities and forest resources to produce VCUs to sell with little regard for the potential costs to community members who may lose access to forest resources as a result of the project. As such, this project did not appropriately implement the REDD+ safeguards principles.

Exploitation of local communities, power imbalances, and inequities in decision-making processes can result in poor engagement and detrimental outcomes for local communities. Power imbalances cause social exclusion, preventing community forest members from receiving the benefits of REDD+ forest conservation activities. As a consequence, the distribution of benefits may unfairly favor those with greater wealth and involvement in decision-making processes [103,104]. For example, Persson and Prowse [111] researched two community forests in Kratie province to investigate how difficult it is for local forest users to set up formal institutional structures, coordinate collective action projects, and strengthen traditional and commercial property rights over a forest area. They found that younger and less affluent households were marginalized from official gatherings, observing limited benefits for participants, informal channels of information transmission that excluded women and poorer households, minimal levels of formalization, substantial enforcement costs, and significant external pressures from forestry authorities and local and international conservation organizations.

Work [102] also found that a REDD+ project in Kampong Thom province inadequately pays community forest members for conserving forest resources, offering them minimal compensation for protecting forests, which consumes their time, requires intensive labor, and places them in great danger from forestland encroachers, illegal loggers, and other forest offenders.

3.2.2. Weaknesses in the Application of CFM FPIC

There have been few studies about FPIC in REDD+ projects in Cambodia. Milne and Mahanty [100] studied REDD+ processes in Cambodia using the Keo Seima REDD+ project as a case study. They found that there were significant challenges in reaching a consensus due to significant inter- and intra-community heterogeneity. There were also issues of representation and creating meaningful agreements, as village chiefs were chosen to represent villagers and there was limited literacy among indigenous populations. They

also found that, despite the formal processes, the FPIC implementation faced criticism for not fully addressing local demands or perspectives. Issues such as consent and customary rights were complicated by the project's legal framework.

Others have observed similar deficiencies in consultation and engagement in other regions of Cambodia, finding that some community forest management committee decisions regarding REDD+ agreements with REDD+ project proponents may not be voluntary for all community members [105,112]. For example, Human Rights Watch [113] conducted a two-year investigation into the Cardamom REDD+ project's impacts on indigenous peoples' rights. Their investigation revealed that the REDD+ project operated for 31 months without seeking input from the Indigenous Chong people residing in the region, infringing on their right to free, prior, and informed consent for the project. Within the 31-month period, project operations encompassed significant determinations regarding the administration of almost 500,000 hectares of land, including the integration of eight Indigenous Chong communities into a national park.

3.3. Addressing the Challenges Associated with Community Participation

Successful implementation of REDD+ projects in Cambodia requires strong collaboration among stakeholders, particularly with active community participation [87,114]. Ensuring communities have adequate resources, capacity, and government support is vital for reducing deforestation and enhancing project outcomes. Collaboration between local communities, government agencies, NGOs, and international donors is crucial for overcoming challenges such as deforestation drivers and implementing sustainable forestry practices [15,115,116].

Effective community involvement in REDD+ is linked to reforms in monitoring and enforcement mechanisms. Locally adapted sanctions and fair compensation systems, coupled with access to community development funds, enable more effective governance of community forests [111,114,117]. Engaging marginalized communities, especially women and poor households, in decision-making is essential for the long-term success of these projects [113]. Strengthening the role of communities ensures that local knowledge and traditional forest management practices are incorporated into REDD+ project activities [3,86,87,89,118,119].

Furthermore, large-scale reforestation projects, such as those in Kratie province, highlight the need to shift the focus away from monoculture plantations to more inclusive, community-driven approaches that respect local land use and cultural practices [120]. Revising policies to prioritize social safeguards and ensure the FPIC of local communities has the potential to improve both environmental outcomes and social equity.

Informed by these studies, the efficacy of REDD+ in Cambodia is contingent upon robust community engagement, acknowledging their vital contribution to forest stewardship, conservation, and sustainable management. Securing substantive FPIC is crucial for empowering communities in decision-making, preventing marginalization, and ensuring authentic engagement. The effective implementation of safeguard principles and grievance redress mechanisms will secure community rights and bolster trust in REDD+ efforts. Enhancing the legal framework, especially with tenure security and carbon rights, is essential for empowering communities to manage and derive benefits from forest resources. Moreover, multi-stakeholder collaboration drawing upon both local knowledge and scientific and policy expertise can establish more inclusive, transparent, and effective governance frameworks, ensuring that REDD+ provides both environmental and social benefits.

4. Forest Tenure, Carbon Rights and Benefit-Sharing Mechanisms

4.1. Forest Tenure and Carbon Rights

If communities' tenure and carbon rights are weak, their positions within REDD+ projects are also weak [98]. Forest tenure stipulates who owns forestland and who manages, uses, and makes decisions about forest resources [121,122]. The Forestry Law 2002 offers a provision that allows communities to access some forest resources for customary uses, including wild vegetables, mushrooms, rattan, resin, and timber for house building [11,120,123,124]. This means that villagers and community forest members can use forest resources solely for subsistence, not commercial purposes. For example, local people in the Cardamom Mountains do not have land titles for their land, which are state property, managed by the Forestry Administration [125]. However, this law partially recognizes indigenous peoples' rights and allows these people to access land and forest resources for traditional use, which also allows communities and indigenous peoples to negotiate contracts to avoid deforestation using informal or customary rights [126].

There is a strong link between forest tenure, carbon rights, and benefit sharing [98, 119,124–127]. Carbon rights comprise two fundamental concepts: (1) property rights to sequester and store carbon contained in land, trees, etc., and (2) the rights to benefits that arise from the transfer of these property rights through emissions trading schemes [128]. While existing policies, laws, and regulations in Cambodia acknowledge the customary use of local communities, the government currently owns carbon rights [115].

Most REDD+ projects provide support to CFM for forest tenure security activities. In implementing REDD+ projects, the risk of the exclusion of communities from lands and forests is real [124,126]. However, REDD+ is also an opportunity to legalize, strengthen, and secure long-term tenure over forest resources and land through forest carbon agreements with communities, which may, in turn, contribute to the success of REDD+ projects [125–127]. For instance, improving forest and land tenure is a core outcome of the Seima REDD+ project in the northeastern part of Cambodia, and it may serve as a more trusted community forest benefit compared to a direct financial payment [119,124]. Similarly, community forest land registration is one of the core objectives of the Tumring REDD+ project. As of September 2024, Tumring had successfully registered five community forests, with four at the final stage of the registration process, and plans to register a further seven in the future [129].

Different REDD+ projects have been trying different benefit-sharing models. For instance, Yeang [115] investigated the tenure arrangements of the Oddar Meanchey REDD+ project using in-depth and semi-structured interviews and field observation and found that communities still have access to forest resources even though carbon rights belong to the government. At that point, the government did not have any benefit-sharing arrangements in place. However, it agreed to allocate at least 50% of revenues from carbon credit sales to participating communities, based on Government Decision No. 699 in the Oddar Meanchey REDD+ project.

In contrast, the Keo Seima REDD+ project developed six principal stages of revenue distribution [130]. Transaction costs such as verification, issuance, registry, bank fees, and legal fees consume a small proportion of the gross sales. The remaining funds are considered net revenue. The Ministry of Environment, the government institution responsible for the Keo Seima Wildlife Sanctuary, takes 20% of the net revenue for different national conservation activities. The remaining 80% is used for direct project support, including cash for communities, project-strengthening activities, and operating reserves. The Tumring REDD+ project adopts and employs a similar REDD+ benefit-sharing model, allocating 10% of the budget for transaction costs, another 10% for a reservation fund, and 80% for

direct community support [129]. Figure 2 summarizes how the revenue from carbon credit sales is distributed by REDD+ projects in Cambodia.

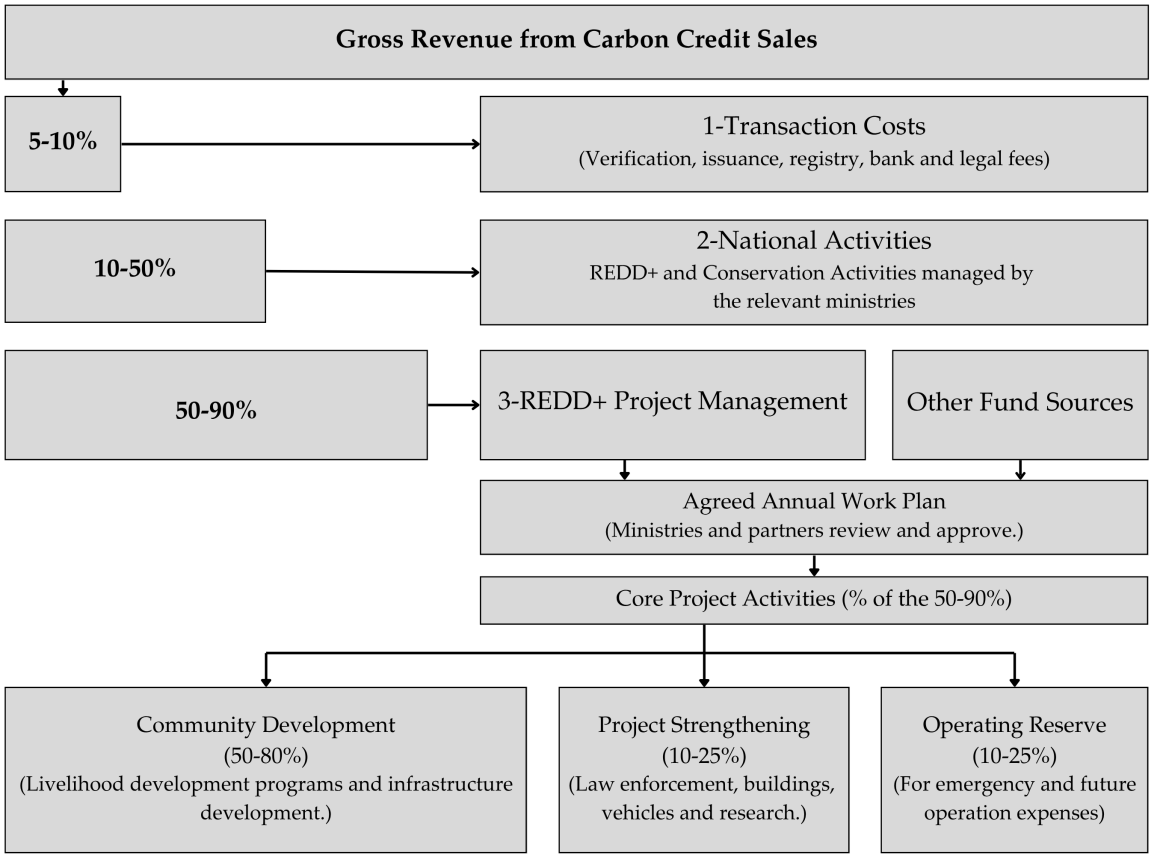


Figure 2. REDD+ project revenue distribution in Cambodia.

4.2. Challenges Associated with Forest Tenure, Carbon Rights and Benefit Sharing

4.2.1. Forest Tenure Issues and Lack of Recognition of Carbon Rights

Even though there are mechanisms in place, such as the UNFCCC's safeguards and FPIC, resource access issues remain a challenge for CFM. Researching nine case studies from four countries in the Asia–Pacific, including Cambodia, Seth et al. [98] found that in some cases, REDD+ projects impair communities' abilities to meet their needs by restricting access to forest resources. Likewise, Bourdier [105] discovered that REDD+ restricts community members from accessing forest resources, which they were dependent on before REDD+ projects were initiated. For example, Bunong communities can access forest resources, but sometimes they are strictly evaluated by a conservation NGO, which attempts to keep them away from the forests. Additionally, the payment scheme for environmental services currently being implemented relies on inadequate land security and a limited legal foundation [131].

Unclear forest tenure can lead to elite capture. Elite capture refers to circumstances in which elites influence development processes to align with their own interests and/or allocate development resources for personal benefit [132]. Some CF leaders, who are members of the CF management committee, may control local access to forest resources and take those resources for their own advantage [112]. Policies on forestry and wildlife are not fully and fairly implemented, leading to a lack of ownership and full access to forest resources for local communities [133].

The complicated, lengthy, and expensive land titling process is a fundamental issue for CFM. FAO and MRLG [134] pointed out that communal land titling procedures for

indigenous communities must go through three to five ministries, taking from four to six years and costing around USD 50,000 per indigenous community registration. To register, indigenous communities must also not have any boundary conflicts with adjacent communities, which can be difficult to achieve, as there are often historical and contemporary disputes over territorial claims.

4.2.2. Unclear Benefit-Sharing Arrangements and Power Imbalances

Current policies do not provide comprehensive guidelines about benefit-sharing mechanisms [86,120]. There is no 'one size fits all' mechanism, and there have been unclear benefit-sharing arrangements for some REDD+ projects. For example, the Oddar Meanchey REDD+ project expected to make more than USD 50 million, with a unit price of USD 7 per ton of carbon dioxide equivalent, and half of this income was planned to be distributed to communities, prioritizing low-income households and applying an incentive-based approach [135]. However, there are no formal benefit-sharing mechanisms in place. When conducting field observations and 114 semi-structured interviews in five villages in this project area, Nathan and Pasgaard [136] found three main reasons for this. First, it is difficult to calculate people's opportunity costs, as few community members hold legal land titles. There were immigrants moving into the project site, causing difficulties in assessing who should be compensated for a specific time. CF members protected forests, but these forests were also used by other villagers and members of the public, so the compensation calculations were extremely complicated. Second, the project is intended to keep the cost down, which may impact community compensation rates. Third, the project has a stronger position than communities. The project could avoid compensating marginalized community members, who have little power and no legal claims.

The power imbalance between REDD+ stakeholders is a key issue undermining effective benefit-sharing. Using qualitative interviews, field observation, and documents analysis, Pasgaard and Nielsen [104] investigated how a community forest in the Oddar Meanchey REDD+ project was established. They showed that the community forest has been dominated by powerful external actors (forestry authorities, local and international NGOs) rather than community members. These powerful external actors represent communities in defining community forest boundaries, problems in communities, and conceptualizing conservation services before even approaching communities. This abuse of power negatively affects benefit-sharing arrangements, as communities may not receive the benefits they deserve from the REDD+ project. Similarly, Pasgaard and Chea [103] also found that benefits from CF/REDD+ are not effectively distributed to vulnerable households due to physical impediments and a lack of resources or information that limit their access to forest resources. Furthermore, their capacity to reap the advantages of forest conservation is similarly constrained by social marginalization enabled by existing power dynamics. Conversely, the benefits are predominantly favored towards the more affluent households that participate in forest conservation activities and decision-making.

4.3. Addressing the Challenges Associated with Forest Tenure, Carbon Rights and Benefit Sharing

In Cambodia, community land titles play a vital role as legal tools to safeguard the rights of local communities, especially in situations involving disputes with influential entities such as investors, military forces, or forestland encroachers. These titles provide a solid basis for protecting claims to land and guaranteeing legal precision in conflicts over ownership [134]. Ensuring solid land titles is crucial for the efficient operation of REDD+. These titles not only establish ownership but also identify the parties eligible to receive financial compensation through REDD+ contracts, which may thereafter be legally enforced [131,136].

Furthermore, the matter of carbon rights is crucial in the administration and allocation of advantages derived from REDD+ projects [137]. The establishment of a legal framework for carbon rights is essential, as it directly affects the distribution of both carbon and non-carbon benefits among stakeholders. The legal framework in Cambodia may require modifications to precisely delineate carbon rights and their connection to land tenure [120].

A fair distribution of benefits is essential to promote participation and mitigate deforestation. Advocates of REDD+ projects and the government should guarantee the establishment of robust benefit-sharing systems to incentivize involvement from communities and other relevant parties [75,115,120,136]. The establishment of a robust benefit-sharing framework is essential for REDD+ to achieve its desired outcomes [138,139]. To enhance the livelihoods of forest-dependent communities, it is imperative that this model incorporates both monetary and non-monetary advantages [140]. The establishment of an equitable remuneration structure for individuals within a community, considering the opportunity costs, is crucial for achieving sustained success [135]. Furthermore, financial technology plays a crucial role in efficiently and securely transferring benefits, therefore fostering greater equity and traceability in the system [141]. To enhance the effectiveness of the REDD+ program in Cambodia, a collaborative strategy that incorporates findings from previous experiences to develop strong benefit-sharing protocols is needed [140].

Building on these findings, the effectiveness of REDD+ in Cambodia depends on resolving ongoing governance and equity issues. Defining carbon rights and ensuring community tenure are essential not only for legal compliance but also for facilitating substantial engagement and enduring sustainability. In the absence of definitive ownership, communities are susceptible to exclusion from financial advantages, hence diminishing incentives for forest protection. Transparent and inclusive benefit-sharing systems are essential to avert elite capture and guarantee that marginalized groups, particularly women and economically disadvantaged households, have their equitable share. Enhancing institutional capacity, along with focused financial assistance, can improve local participation and guarantee that REDD+ provides more equitable livelihood benefits and climate adaptation practices. A participatory and rights-based approach is essential to transform REDD+ into a genuinely sustainable and socially equitable forest governance paradigm.

5. Livelihood Improvement and Climate Change Adaptation

5.1. REDD+, Livelihood Development and Climate Change Adaptation

REDD+ generates carbon credits through conservation activities, resulting in emission reductions and, in turn, receiving compensation through carbon credit sales. The funds from the sales can be used to conserve forests, improve biodiversity, and improve the livelihoods of communities [142]. In Cambodia, incomes from forests have been playing a significant role in supporting poor rural households' livelihoods and reducing income inequality and poverty [15,143]. Most REDD+ projects provide opportunities for local communities to improve their livelihoods and land tenure and contribute to sustainable development goals, but some do not [140,144]. REDD+ projects offer diverse project activities, such as training in agricultural techniques, undertaking soil rehabilitation, and establishing small enterprises for non-timber forest products. These activities generate income for community forest members, resulting in improving their livelihoods [129,138,145,146].

According to Pauly et al. [27] and Pauly and Tosteson [91], some REDD+ projects have offered resources for community development components, leading them to continue conserving forest resources. Likewise, Ken et al. [139] pointed out that REDD+ projects increase overall capital assets and improve the livelihoods of local communities. They applied the Sustainable Livelihood Framework developed by Scoones [147], using 14 indicators of livelihood capital assets in the Keo Seima REDD+ project from 2010 to 2018 and the Oddar

Meanchey REDD+ project from 2008 to 2018. They found that there had been a notable rise in the total capital assets seen in the two locations. In particular, they found that physical capital assets (biodiversity, improvement in forest coverage, and environmental conservation) increased by 57.4–60.7%, while human capital (technical assistance, environmental education, skills and knowledge, and capacity building) increased by 26.5–34.9%.

There have been no specific studies regarding how REDD+ projects support climate change adaptation in Cambodia. However, there have been project activities implemented by government institutions, REDD+ projects, and development partners, which may help communities adapt to climate change. For example, communities have been trained in sustainable agricultural practices such as agroforestry, which integrates trees with crops and livestock. This not only diversifies income sources but also enhances soil fertility and resilience to climate impacts like droughts and floods [148,149]. By leveraging the natural beauty and biodiversity of forests, communities may also generate revenue through tourism activities. This provides financial incentives for forest conservation and increases community resilience by diversifying income streams [150]. Harvesting and selling non-timber forest products such as resin, honey, and medicinal plants can also provide additional income for communities. This approach allows communities to benefit economically from forests without resorting to deforestation. Training in sustainable harvesting techniques ensures that these resources remain available for future use, contributing to both economic and environmental resilience [129,151].

Access to microfinance and support for small business development help communities invest in diversified income-generating activities. For example, microfinance institutions and banks provide loans and grants to communities to start small enterprises like crafts and local trading [152]. Since 2018, O Taneung community forest members in Kratie province have been overseeing a community forest saving group that they initiated with USD 1000 in financial support from the Regional Community Forestry Training Center and the Swiss Agency for Development and Cooperation [153]. By 2020, the fund had expanded to about USD 3000, catering to approximately 35 families. Households have utilized their loans to purchase seeds, fertilizers, and other agricultural commodities. Programs raising awareness about the benefits of forest conservation and sustainable livelihoods also help communities adapt to climate change by adopting practices that enhance resilience and reduce vulnerability [145].

5.2. Challenges Associated with Livelihood Improvement and Climate Change Adaptation

It is important to note that some REDD+ projects have negatively impacted the livelihoods of local communities. After a forest restoration project by the Korean company, Think Biotech, had been in operation for some time, local villagers found themselves with not enough jobs to secure their daily livelihoods, as the project's worker demand dropped and people could not go into the forests for non-timber and timber products as they did before [120]. Similarly, a study by Ken et al. [139] indicated that the natural capital asset experienced a significant decrease of approximately 31% and 26% in the Oddar Meanchey REDD+ and Keo Seima REDD+ locations, respectively. They argued that reason for the decline was that the absence of consistent financial backing focused on carbon emissions led to a loss of confidence between the local community and the project developer. As a result, the practice of illegal logging and clearing of land for personal profit continued, further contributing to the depletion of natural resources.

Implementing effective climate change adaptation measures requires significant financial resources. Despite international support, the funds available often fall short of the needs for comprehensive adaptation strategies. Securing sustained and adequate financing for long-term projects is a persistent challenge [154,155]. Weak institutional capacity and

governance structures can hinder the effective implementation of REDD+ programs. Issues such as unclear land tenure, limited enforcement of forestry laws, and bureaucratic inefficiencies continue to impede progress [155,156]. Ensuring the meaningful participation of local communities, particularly indigenous peoples, in REDD+ projects is crucial but challenging. There can be gaps in knowledge, capacity, and trust between project implementers and local communities [157].

5.3. Addressing the Challenges Associated with Livelihood Improvement and Climate Change Adaptation

REDD+ projects in Cambodia offer significant opportunities for enhancing community livelihoods and climate change adaptation. Communities can benefit from sustainable forest practices, biodiversity monitoring, and alternative income streams like ecotourism and the sale of non-timber forest products [89,133]. These activities help mitigate the financial uncertainties of carbon markets by diversifying income sources [139]. By investing in sustainable agriculture, renewable energy, and social enterprises, REDD+ projects can provide long-term, self-sustaining revenue for local communities while encouraging forest conservation.

Reducing deforestation and carbon emissions can also be achieved through practical household-level changes. For example, introducing improved cooking stoves and mosquito nets reduces the need for fuelwood and prevents deforestation [158]. These small interventions not only lower carbon emissions but also contribute to better livelihoods for communities reliant on forest resources. Such projects require financial support to encourage widespread adoption and to maximize environmental and economic benefits.

Sustainable financing sources can help communities better cope with climate change by supporting their involvement in REDD+ projects. Through CFM, communities can benefit from forest resources and carbon credit sales, improving livelihoods and resilience [153,159]. Empowering communities to manage natural resources enhances environmental sustainability [154,160]. Climate adaptation techniques, such as drought-resistant crops and efficient irrigation, promoted by the Ministry of Agriculture, Forestry, and Fisheries, help farmers adapt to changing conditions [161]. The integration of local knowledge with scientific data can improve adaptation strategies and resilience [162]. REDD+ projects can also actively promote climate adaptation strategies and disaster preparedness to enhance both environmental sustainability and the long-term resilience of local populations [163].

REDD+ offers a significant chance to improve community livelihoods and climate resilience. However, its efficacy hinges on equitable execution. Establishing equitable benefit-sharing arrangements is essential to avert inequalities in access to financial incentives and alternative revenue streams. Enhancing support for diversified and sustainable livelihoods, including agroforestry and ecotourism, can bolster economic stability while diminishing reliance on forest exploitation. However, focused capacity-building activities are essential to provide communities with the technical expertise and resources necessary for implementing climate adaptation practices. Robust collaboration among local communities, governmental bodies, and NGOs will be crucial for integrating traditional knowledge with contemporary adaptation measures, promoting enduring resilience, and guaranteeing that REDD+ effectively provides both environmental and economic benefits.

6. Discussion

The literature demonstrates a variety of opportunities and challenges associated with incorporating Community Forest Management (CFM) into REDD+ projects. CFM has strengthened REDD+ effectiveness by leveraging local knowledge, fostering community ownership, and encouraging sustainable forest management practices [15,50,86,105,111,

117,164,165]. CFM has also contributed to enhancing livelihoods and climate resilience. However, ongoing issues relating to governance, benefit-sharing, and land tenure continue to pose significant challenges [40,166].

6.1. REDD+ Governance and Community Participation

Governance structures play a critical role in REDD+ outcomes. However, persistent weaknesses such as unclear policies, limited enforcement, and inconsistent FPIC application hinder effective implementation [25,41,51,167–169]. While some argue that decentralized governance improves community-led forest management [170], others suggest that hybrid models, balancing national oversight with local engagement, yield better results [50,171]. Sawathvong et al. [169] warned that central agencies in Laos dominate REDD+ governance, limiting non-state stakeholder participation in REDD+ consultation processes of the REDD+ program. Lozano et al. [172] reported that indigenous organizations in Peru have gained influence in REDD+ governance, but true inclusiveness is still needed. Tiki et al. [173] found that despite supportive legal frameworks in Ethiopia, enforcement and implementation remain weak, requiring stronger local policy execution. Aryal et al. [174] emphasized integrating place-based values, decentralization, and flexible REDD+ program designs while ensuring fair carbon pricing and regulatory oversight of voluntary carbon markets. Nantongo et al. [175] highlighted the need for context-specific governance and economic safety nets in Tanzania. Gauthier [176] underscored the to center indigenous decision-making rather than institutional hegemony in REDD+ governance.

Chorito and Assefa [177] highlighted Ethiopia's strong institutional alliances but stressed that addressing power imbalances through collaborative governance and community involvement is key to equitable forest management. Osborne et al. [178] further advocated for a climate justice approach that prioritizes indigenous rights, tackling both technical carbon accounting concerns and broader socio-economic inequalities. Osei [179] emphasized that political will and strategic funding opportunities are essential for fostering REDD+ collaboration in Ghana. Sunderlin et al. [180] found that while conditional incentives remain key to REDD+, communities benefiting from multiple interventions, including non-conditional benefits, were more likely to adopt sustainable land-use changes in six countries, including Brazil, Cameroon, Indonesia, Peru, and Vietnam. Vijitharan et al. [181] highlighted the need for continuous REDD+ policy evaluations in Sri Lanka, recommending cross-referencing national and UNFCCC data to adapt to changing dynamics. These authors call for enhanced policy enforcement, inclusive governance, and stronger social safeguards to ensure that REDD+ effectively balances environmental integrity with equity and long-term community benefits.

6.2. Forest Tenure, Carbon Rights and Benefit-Sharing Mechanisms

Tenure security and carbon rights are critical to REDD+ success. Mahanty et al. [126], Yeang [115], Baird [11], Agyei [165], and Bastakoti and Davidsen [50] stressed the importance of legal tenure recognition for promoting community participation, while Evans et al. [119], Chapman et al. [118], and Awung and Marchant [40] showed that secure tenure and clear carbon rights increase community engagement. However, Krister et al. [166] highlighted persistent wealth inequalities in benefit-sharing, which often marginalize vulnerable groups. Lord [182] further critiqued REDD+ governance, showing how tenure conflicts, overlapping authorities, and top-down decision-making weaken local governance and exacerbate land insecurity. Duchelle et al. [183] and Joanes et al. [184] argued that policy reforms are necessary to ensure equitable benefit distribution and prevent elite capture. There is a consensus within the literature regarding the necessity for clear tenure, political responsibility, and locally derived governance solutions.

Shah and Race [185] advocated for integrated policy approaches addressing tenure, equity, and financial incentives to enhance REDD+ projects. Aryal et al. [186] highlighted transparency gaps in benefit-sharing and indigenous participation, recommending digital monitoring, carbon price adjustments, and stronger safeguards. Dugasseh et al. [187] called for community-level sensitization, inclusive decision-making, and tenure registration to ensure fair benefit distribution in REDD+ projects in Ghana. Based on their analysis of REDD+ projects in Indonesia, Wahyudi et al. [188] suggested that direct distribution of REDD+ funds is the most equitable approach while advocating for flexible, localized fund management mechanisms. These studies highlight the interconnected challenges of tenure security, carbon rights, and benefit-sharing, emphasizing the need for policy reforms, inclusive governance, and financial transparency to ensure REDD+ delivers fair and sustainable environmental and livelihood benefits.

6.3. Livelihood Improvement and Climate Change Adaptation

REDD+ projects have had mixed effects on livelihoods. Nantongo et al. [175] found that REDD+ had neutral effects on total income in Tanzania. Flanery et al. [31] found that REDD+ has the potential to support livelihoods if it aligns with the needs of communities. Ensuring that these communities can actively participate in its development and implementation in Cameroon may help them safeguard their livelihoods while benefiting from the program. Joanes et al. [184], Ken et al. [139], and Dieng et al. [171] highlighted that alternative income sources like agroforestry and ecotourism have boosted local economies in Kenya, Cambodia, and Senegal, while Kumar et al. [189] and McElwee et al. [167] cautioned that land-use restrictions have negatively impacted some communities Vietnam and India. Atela et al. [190] suggested that directing REDD+ funds to vulnerable regions can enhance both mitigation and adaptation efforts in Kenya. Additionally, REDD+ projects also help community members to adapt to climate change impacts. McElwee et al. [167] found that strengthening household adaptive capacity through REDD+ activities is essential. They argued that future REDD+ action plans in Vietnam should better integrate adaptation strategies, ensuring that both livelihoods and forest conservation are considered together. Learning from past experiences can help prevent increased climate vulnerability among participating communities. Paris [191] suggested that REDD+ benefits have indirectly enhanced adaptation in Indonesia, but to maximize these gains, project design should explicitly include adaptation objectives, implement safeguard measures, and ensure local support for adaptation efforts. These studies highlight that effective implementation, community participation, and strategic fund allocation can help maximize both livelihood and adaptation benefits. Integrating adaptation objectives and safeguard measures into REDD+ design will be crucial to enhancing resilience and ensuring sustainable outcomes for participating communities.

7. Conclusions

The integration of Community Forest Management (CFM) into REDD+ frameworks has the potential to support both conservation and socio-economic goals. However, a range of factors continue to constrain the effectiveness of REDD+ projects. While CFM has proven successful in enhancing local engagement, preserving biodiversity, and strengthening climate resilience through indigenous knowledge and sustainable land management, REDD+ frameworks sometimes introduce obstacles rather than solutions. Weak enforcement mechanisms, tenure insecurity, unclear carbon rights, and the inconsistent application of free, prior, and informed consent (FPIC), safeguard principles, and grievance redress mechanisms continue to hinder equitable outcomes. Strengthening FPIC processes and

inclusive governance practices is essential to enhancing accountability, legitimacy, and respect for indigenous and local communities' rights in REDD+ implementation.

Securing land tenure and providing legal recognition are fundamental to ensuring sustained community involvement in REDD+. However, issues such as elite capture and unequal wealth distribution persist, undermining the fairness of benefit-sharing. To address these gaps, legal tenure must be accompanied by appropriate financial support and the establishment of transparent, inclusive benefit-sharing frameworks. Strengthening governance structures and policy clarity, combined with innovative financial tools, such as locally adapted carbon credit schemes, can enhance the equity and long-term viability of REDD+ projects. A focus on fair distribution is particularly important for ensuring that marginalized groups meaningfully benefit from conservation initiatives.

Despite REDD+'s potential to contribute to climate adaptation, most projects in Cambodia and beyond have yet to integrate explicit adaptation measures. As a result, vulnerable communities remain exposed to climate-related risks. Incorporating locally relevant adaptive strategies, such as diversified livelihoods, agroforestry, and community-based resource management, into REDD+ initiatives is vital. These approaches can improve resilience while supporting the program's broader environmental objectives.

The literature highlights several crucial opportunities to improve CFM-REDD+ effectiveness, including the following.

- Investing in strengthening local governance structures and institutional capacity to enable effective forest management and REDD+ implementation;
- Strengthening FPIC and participatory processes to enhance participatory decision-making, accountability, and legitimacy;
- Encouraging collaboration between governments, communities, NGOs, and the private sector to foster inclusive and coherent forest governance;
- Coupling legal recognition of tenure with financial support to maintain community commitment;
- Establishing transparent benefit-sharing mechanisms to prevent unfair benefit distribution and promote social inclusion;
- Facilitating access to sustainable financing and carbon markets through blended finance models;
- Distributing funds to the most vulnerable and incorporating adaptive strategies into REDD+ projects to support both livelihood diversification and climate resilience;
- Promoting community-based monitoring systems to support transparent, low-cost, and locally driven monitoring, reporting, and verification processes, curbing illegal forestland clearing for sales and illegal logging;
- Undertaking regular monitoring and evaluation of social and equity outcomes to ensure REDD+ interventions achieve real impacts that address community needs.

By addressing these key issues, policymakers and stakeholders can work towards achieving a more inclusive, efficient, and resilient CFM-REDD+ model that reconciles conservation aims with local development requirements, thereby enhancing sustainable forest management in Cambodia and beyond. Cambodia's experience offers significant insights for REDD+ projects in other parts of the world, highlighting the necessity of meaningful community engagement, secure land tenure, and governance mechanisms that reconcile conservation objectives with the needs of local communities.

Additional research is needed to investigate the application of REDD+ safeguard principles, including FPIC and grievance mechanisms, and the implementation of benefit-sharing mechanisms. Gaining a comprehensive understanding of how these mechanisms function in real-world scenarios would offer valuable insights into opportunities to enhance the governance and efficacy of REDD+ programs in Cambodia and internationally.

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