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Comparative assessment of FSC and PEFC forest management standards in Vietnam: An analysis of actors, standards, and impacts

Supervisor:
Prof. Mauro Masiero

Submitted by
Xuan Dien Nguyen
Student no. 2105275

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Abbreviations and Acronyms

ASI	Accreditation Services International
BoA	Bureau of Accreditation
CB	Certification Body
CBD	Convention on Biological Diversity
CSR	Corporate Social Responsibility
CoC	Chain of Custody
EU	European Union
EUDR	European Union Deforestation Regulation
EUTR	European Union Timber Regulation
FAO	Food and Agriculture Organization
FLEGT	Forest Law Enforcement, Governance and Trade
FM	Forest management
FPIC	Free, Prior, and Informed Consent
FSC	Forest Stewardship Council
FSIV	Forest Science Institute of Vietnam
GDP	Gross domestic product
IAF	Vietnam Institute of Accreditation
IGIs	International Generic Indicators
ILO	International Labor Organization
MCNV	Medisch Comité Nederland Vietnam
NGO	Non-Governmental Organization
NTFPs	Non-timber Forest Products
P&C	Principle and Criteria
PEFC	Programme for the Endorsement of Forest Certification
PFES	Payments for Forest Environmental Services
REDD	Reducing Emissions from Deforestation and forest Degradation
SDGs	Sustainable Development Goals
SLIMFs	Small and Low Intensity Managed Forests
SFM	Sustainable forest management
TOF	Tree outside the forest
TUAF	Thai Nguyen University of Agriculture and Forestry
UN	United Nations
UNFCC	United Nations Framework Convention on Climate Change

USAID	United States Agency for International Development
VAFS	Vietnamese Academy of Forest Science
VFCO	Vietnam Forest Certification Office
VFCS	Vietnam Forest Certification Scheme
VND	Vietnam Dong
Vinafor	Vietnam Forestry Corporation
Vinapaco	Vietnam Paper Corporation
VNUF	Vietnam National University of Forestry
VPA	Voluntary Partnership Agreement
VRG	Vietnam Rubber Group
WWF	World Wide Fund for Nature
WTO	World Trade Organization

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Abstract

This research explores forest management certification under FSC and PEFC schemes in Vietnam. The main objective of the research is to investigate the major stakeholders at play within the framework of forest certification, to compare the two standards, to analyze the social, environmental, economic impacts of the standards, and to learn how these systems might be improved.

Through a desk-based study, we found that forest certification processes in Vietnam involve cooperative efforts among government agencies, certification bodies, forest owners, local communities, non-governmental organizations, the academia, industry, and trade sectors. Differences among the two schemes were observed, with PEFC being a system driven by the central government and other public bodies, with a prevalent top-down and centralized approach. As for the certification requirements and documents, FSC and PEFC standards have different scopes, approaches, and requirements, with FSC being more broad-based and PEFC being more plantation-forestry-oriented.

Both forest certification schemes significantly impact Vietnam's forest sector. FSC develops standards that promote ecological conservation and community participation while PEFC seeks to incorporate sustainability within plantation forestry practices.

Despite the advantages of the forest certification in Vietnam, issues such as difficulties in the certification processes, lack of market opportunities for smallholders, gender disparities, and land tenure conflicts were identified. Future research should investigate the effects of forest certification complementing secondary data with primary ones.

Overall, forest certification is a step that supports the improvement of sustainable forest management in Vietnam and helps to cope with such global issues as climate change. These existing barriers can be overcome, and further development of such systems in Vietnam will ensure the long-term sustainability of its forest resources.

Chapter 1: Introduction

This chapter deals with the issue of forest certification, in particular the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC), and their significance in enhancing sustainable forest management (SFM) in Vietnam. It examines how these certification schemes are embedded into policy and corporate social responsibility (CSR).

1.1. Background

Forest certification is a market-driven tool that fosters SFM by encouraging its voluntary certification. The certification of these forest operations allows consumers to select forest products on the basis of a particular existing environmental, social and economic standard. The system has become an important tool in both forestry policy and CSR, helping to align market demand with ethical and sustainable forestry practices (Auld *et al.*, 2008).

1.1.1. Forest certification in the context of policy frameworks

The FSC and PEFC certification schemes greatly advance SFM. These initiatives mandate compliance with globally accepted standards and support both national and international efforts in forest conservation, including strategies designed to mitigate deforestation and protect biodiversity (Rametsteiner & Simula, 2003).

The FSC is recognized for its rigorous environmental and social criteria. It requires forest managers to maintain biodiversity, safeguard ecosystem functions, and honor the rights of indigenous communities. Additionally, these criteria necessitate adherence to national legislation and international agreements, including the Convention on Biological Diversity (CBD) and standards set by the International Labor Organization (ILO) concerning workers' rights (Forest Stewardship Council, 2015). Furthermore, FSC-certified forest operations must promote the long-term viability of forest ecosystems, steering clear of practices such as illegal logging that may result in deforestation and land degradation (Reynolds *et al.*, 2007).

The PEFC similarly establishes a framework for SFM on both national and regional scales, paying in particular attention to smallholders. Forest management techniques that have earned PEFC certification are guaranteed to support global climate regulation efforts, protect water resources, and enhance biodiversity (PEFC, 2018). According to the UNFCCC (2015), forests can play a significant in climate change by acting as important carbon sinks. Forest certification schemes like PEFC promote SFM, which is in line with the objectives of the Paris Agreement by enhancing conservation, reducing deforestation and promoting carbon sinks.

Efficient forest governance and legislative initiatives necessitate the backing of both the FSC and PEFC. These certification programs are essential in combating illegal logging, as they ensure that timber products can be traced to sustainably managed forests. Furthermore, certification promotes social equity by requiring forest

managers to obtain free, prior, and informed consent (FPIC) in favor of indigenous and local peoples before initiating any forest-related activities that may occur on their land or may otherwise affect them. The rights and livelihoods of these communities are protected by this practice (FSC, 2015). This is consistent with the Sustainable Development Goals (SDGs), particularly SDG 15 (Life on Land), which focuses on maintaining healthy forest management, preventing desertification, and conserving biodiversity (United Nations, 2015). According to Auld *et al.* (2008), since FSC and PEFC promote soil and water conservation, sustainable use of forest resources, and ecosystem preservation for future generations, they are concerned with the long-term ecological health of forests.

1.1.2. Forest certification as a tool for Corporate Social Responsibility

Due to growing concerns about environmental and social sustainability and the ethical conduct of businesses, forest certification has become an important tool of CSR. Programs such as FSC and PEFC allow companies to offer assurance to the public that the raw materials used in their products have been sourced from responsibly managed forests (Cashore *et al.*, 2006). In response to the growing consumer preference for environmentally conscious and ethically sourced goods, certification empowers businesses to satisfy this demand while simultaneously bolstering their market image (Rametsteiner & Simula, 2003).

The process of obtaining certification is not just a reputational benefit but also a powerful marketing tool. Certified companies can signal to customers, investors, and stakeholders that they are committed to sustainable practices, thereby fostering trust and loyalty among environmentally conscious consumers. A certified product's competitive advantage is further strengthened by its alignment with ethical consumer values, which brings higher prices and increased demand (Peattie, 2010).

Furthermore, forest certification is in harmony with fundamental principles of CSR, including sustainability, transparency, and social accountability. Organizations that obtain certification must adhere to rigorous environmental, social and economic standards, thereby fostering responsible forest management practices across their supply chains. This dedication to transparency guarantees that companies are responsible for their sourcing practices, assisting them in preventing contributions to deforestation and the destruction of habitats and more in general, avoiding negative impacts on forest ecosystems and communities while promoting practices that are beneficial to them (Reynolds *et al.*, 2007).

In addition, certification helps businesses mitigate risks associated with environmental degradation and poor governance. By using raw materials from certified forests, companies can reduce the legal and reputational risks associated with unsustainable practices. As a result of certification, companies can comply with regulatory standards and international agreements that promote sustainable resource use, thus preventing disruptions to their operations (FSC, 2015).

In conclusion, forest certification serves as a strategic tool for CSR, enhancing

a company's reputation while aligning its operations with global sustainability goals. Participation in certification initiatives contributes to responsible forest management and contributes to social and environmental goals (Auld *et al.*, 2008).

1.1.3. Integrating forest certification into policies and Corporate Social Responsibilities for sustainable forest management

Integrating forest certification within the framework of CSR policies and strategies generates significant efficiencies, which enhance the effectiveness of the government regulation and stimulate corporate actions towards responsible forest management. Government policies aiming to support sustainable forest policies at both global and national scales are directly and indirectly linked to the promotion of forest certification programs like FSC and PEFC (Auld *et al.*, 2008). With these certification standards in the companies, the conservation of forests and biodiversity, and illegal logging are made efficient (Cashore *et al.*, 2006). With this partnership, states can widen their regulatory net by capitalizing on the commercialized aspect of certification and enlisting the support of a wider scope of actors in the forest sector (Rametsteiner & Simula, 2003).

Organizations can successfully fulfill their social and environmental responsibility objectives with the help of forest certification. It assures adherence to external standards and supports the implementation of sustainable practices (Peattie, 2010). As a result, it increases business openness and lowers the dangers connected to inadequate environmental management (FSC, 2015). A general push toward sustainability will result as more businesses move toward certification (Reynolds *et al.*, 2007).

The integration of forest certification into the policy framework is also driving market demand for sustainable forestry products. As consumers increasingly value environmentally conscious purchasing, certified companies are better able to meet this demand. Forest policy objectives are reinforced by this market dynamic, encouraging more firms to adopt sustainable practices (Rametsteiner & Simula, 2003). Such efforts can be made by governments willing to incentivize certified enterprises or to drive the promotion of other products using public procurement mechanisms (Auld *et al.*, 2008). Otherwise, the links between certified companies and government agencies facilitate the participation of diverse stakeholders and provide a platform for NGOs, communities, and the industry to address complex issues of forest management (Cashore *et al.*, 2006). This allows for a more extensive decision-making process, as many stakeholders can be included so that both local and indigenous peoples' concerns are addressed not just during the formulation of policies, but also during and after the business runs (Reynolds *et al.*, 2007).

Finally, the integration of forest certification into policy and CSR strategies also results in achieving greater objectives of sustainable development. The responsible management of forests, within public and private sectors' pursuance of social, environmental, and economic goals, helps reach at least some of the United Nations

Sustainable Development Targets (SDGs). Not only does this support the principle of SFM but it also aids in building up the forest resources and the communities depending on it (Auld *et al.*, 2008).

1.2. Research rationale

Vietnam's forest sector has both potential and problems due to the country's transition to a market economy and increasing international integration. According to the Food and Agriculture Organization of the United Nations (FAO, 2020), countries that want to compete in the global market need to implement SFM techniques. This need is further emphasized in the Vietnam Forestry Development Strategy 2021-2030, which highlights the government's strong commitment to SFM and supports certification schemes as essential elements for achieving sustainable outcomes in forest governance.

The importance of forest certification, particularly group certification, is underscored by Auer (2012), who notes its potential impact on Vietnam's future in the international forestry market. Group certification, especially in tropical countries like Vietnam where smallholder farmers are major players in the forestry sector, can be an effective strategy to improve SFM while contributing to local and national economies as well as to people's wellbeing. This strategy encourages cooperation and resource sharing among farmers, thereby supporting their certification efforts and improving the overall management of forest resources.

In this context, it is useful to analyze the state of the art of forest certification in Vietnam to understand where it stands now, its developments and to comparatively analyze the forest certification systems in place to understand how they operate, possible synergies and trade-offs as well as gaps, and to investigate their impacts so far. This is ultimately aimed to identify possible ways forward to develop forest certification in Vietnam and ultimately inform future policies and decision making aiming to promote SFM in the country, in line with national and global requirements. Such an understanding of how certification works in the Vietnamese context will allow appreciating how the country can harness certification schemes for SFM, better forest governance, and improved global standing for Vietnam.

1.3. Research objectives

The general objective of this research is to analyze FSC and PEFC forest management certification systems in Vietnam. To do so, the general objective has been organized into the following specific objectives:

(1) To identify and analyze the main stakeholders involved in forest management certification in Vietnam.

(2) To perform a comparative analysis of FSC and PEFC forest management standards in Vietnam.

(3) To assess social, environmental, and economic impacts of forest certification in Vietnam

(4) To organize findings under the form of lessons learnt to inform possible improvement to forest certification systems in Vietnam.

To address these objectives, this research focuses on the following research questions:

(1) What are the key actors involved in forest management certification in Vietnam?

(2) What are the similarities and differences between FSC and PEFC forest management standards in terms of scope, approach and requirements?

(3) Which social, environmental, and economic factors of forest certification can be observed in Vietnam? Is there any difference between the two schemes?

1.4. Thesis structure

This thesis consists of six chapters. Chapter 1 gives an overview of forest certification and its role in SFM and CSR. Chapter 2 offers a thorough examination of the literature related to forest certification, focusing on the FSC and PEFC standards. Chapter 3 introduces Vietnam’s forest resources, analyzes key policies and governance, and some details the forest certification process. Chapter 4 outlines the research methods, including the study area, general approach, data collection techniques, and analytical methods, emphasizing stakeholder analysis. Chapter 5 presents findings on forest certification in Vietnam, focusing on key actors, a comparative analysis of FSC and PEFC standards, and their impacts. Chapter 6 discusses the implications of the findings, identifies challenges in implementing standards, and suggests areas for further research. Chapter 7 concludes the thesis, summarizing key findings and their significance for Vietnam's forest management.

Chapter 2: Literature review

This chapter reviews the literature on forest certification as a crucial tool for promoting SFM and examines the roles of key actors in the certification process, including international organizations, governments, non-governmental organizations (NGOs), and local communities.

2.1. Forest certification overview

It is widely agreed that forest certification can be a successful policy and marketing tool for promoting sustainable forest management, ensuring that forests are managed to meet current needs without endangering the ability of future generations to meet their own. It provides forest managers with an optional, market-driven framework for abiding by accepted social, environmental, and economic standards. Auld *et al.* (2008) stated that this approach promotes conservation efforts, expands market prospects, and enables forest managers to show their dedication to sustainability.

There are criteria concerning forest management that impersonate the conservation of biological diversity, sustainable forest use, the rights of the indigenous population, as well as respect for the workers' rights which these certified forests must comply with in order to guarantee good stewardship of the forest. This means that the certification also offers physical benefits – better market access for the certified wood products and probably higher prices for these (Toppinen *et al.*, 2014). These incentives combine economic objectives with environmental protection, thereby making sustainable practices more attractive to forest owners and businesses (Overdevest & Rickenbach, 2006).

In the recent years, the area of forests in Vietnam has also recorded growth up to around 14.79 million hectares by the year 2022. However, there are still some limitations such as degradation and management of forests unsustainably. The use of the forest certification system can contribute to the improvement of resource management and raising the international competitiveness of forest product marketing (FSIV & FAO, 2009).

Forest certification does not only have positive effects towards the environment but economically as well. The market tends to reward certified forest products with higher prices which offers the potential for procurement by businesses and/ or communities in the global supply chain. However, in order for the certification programs to be effective, the education, training, and funding support from government, NGOs and others are required (European Union & MCNV, 2021).

The two major global forest certification programs are FSC and PEFC. Both programs aim to promote SFM, but they have distinct differences in their certification requirements, operational frameworks, and governance models. These differences affect the priority areas, adaptability to local contexts, and global implementation of each certification program.

2.1.1. Forest Stewardship Council (FSC)

The FSC was founded in 1993, after the Earth Summit in Rio de Janeiro in 1992, to promote forest management that is environmentally suitable, socially advantageous, and economically feasible (FSC, 2015). Environmentally appropriate management balances timber and non-timber forest product extraction with the need to preserve biodiversity, ecosystem resilience, and essential ecological functions such as nutrient cycling and carbon sequestration. Socially beneficial management ensures that both local communities and society benefit from forests by involving them in decision-making and encouraging sustainable practices that align local interests with long-term environmental goals. Economically feasible management focuses on structuring operations to be profitable without compromising forest ecosystems or the welfare of communities, emphasizing the marketing of a broad range of forest products and services to ensure sustainability alongside economic gains. This integrated approach promotes the responsible use of forests, ensuring their health and productivity for future generations.

The FSC is an international organization that offers a system for voluntary accreditation and independent third-party certification. This system enables certificate holders to promote their products and services as a result of environmentally sound, socially responsible, and economically viable forest management practices. FSC establishes standards for developing and approving FSC Stewardship Standards, which are grounded in the FSC Principles and Criteria. Additionally, the FSC sets criteria for the accreditation of conformity assessment bodies, also known as certification bodies, that verify compliance with these standards. Through this framework, FSC provides a certification system for organizations aiming to market their products as FSC-certified (FSC, 2015).

FSC first introduced the FSC Principles and Criteria (P&C) in November 1994 as a performance-based, outcome-oriented global standard. These principles and criteria emphasize the on-the-ground performance of forest management rather than the management systems that achieve that performance. The FSC Principles serve as the fundamental rules or elements for environmentally appropriate, socially beneficial, and economically viable forest management, while the Criteria offer a means to assess whether each principle has been met. Together, they form the backbone of the FSC certification scheme and, along with the preamble and glossary of terms, comprise a comprehensive standards package. Importantly, there is no hierarchy among the principles or criteria; they hold equal status, validity, and authority, and apply collectively at the level of each management unit. The application of FSC standards within the standards framework, however, requires the use of these principles and criteria together with other related documents in the FSC (FSC, 2015).

As outlined by the FSC (2015), the FSC P&C specify the ten principles that a forest management unit must comply with in order to gain FSC forest management certification. These principles are applicable in variety of forest types and ecosystems and across many cultural, political, and legal systems. They provide for legality (Principle 1), the rights and welfare of workers (Principle 2) and indigenous peoples

(Principle 3), and local community support (Principle 4). Moreover, the principles stress forest products and services management as a means of ensuring long-term economic sustainability (Principle 5), and conservation and regeneration of environmental values and ecosystem services (Principle 6). In addition, they call for a regime of management performed according to a scale and risk (Principle 7) along with continuous monitoring and adaptive management (Principle 8). High Conservation Values of the forest need to be maintained (Principle 9), and all management activities are to match the socioeconomic and environmental objectives of the organization (Principle 10).

2.1.2. Program for the Endorsement of Forest Certification (PEFC)

The PEFC is a worldwide organization promoting SFM through forest certification and labeling of forest-based products. Products with a PEFC claim and/or label can ensure that the raw materials that have been employed in their manufacture come from properly managed forests and/or trees outside the forest (TOF) areas and from recycled and controlled sources. National and regional forest certification programs that adhere to its set standards are certified by the PEFC Council. To ensure adherence to these initiatives, periodic reviews are carried out (PEFC, 2018).

The PEFC categorizes its documents into four main types (international standards, benchmark standards, procedural documents, and guidance documents), each serving a specific role within the certification system. The local adaptation of these documents is permitted, while also guaranteeing that PEFC standards remain operationally effective and globally applicable in diverse forest and product management systems. However, this thesis focuses specifically on the SFM standard, PEFC ST 1003, which outlines the international requirements for sustainable forest management (PEFC, 2024).

The SFM standard PEFC ST 1003 extends the scope and effects of PEFC certification outside the forest sector and contributes to the United Nations' Sustainable Development Goals. A notable advancement is the mention of TOF, which enables certification to smallholders and farmers who manage trees on agricultural land or settlement rather than in forests. This integration enhances the earnings and productivity of agriculture and agroforestry land, particularly in developing countries, therefore helping to alleviate poverty (SDG 1) and ensure food security (SDG 2). It also enhances equality and inclusion in cities by facilitating the creation of sustainability in cities (SDG 11) and improving the health and well-being of the city residents (SDG 3). Furthermore, the standard bolsters social elements by embedding human rights, living wages and gender equality in the requirement of providing equal rights and employment, non-discrimination and fair labor conditions for both local and foreign workers. These improvements help to promote decent work and economic growth (SDG 8), reductions in inequalities (SDG 10), and achievement of gender equality (SDG 5). In addition, there are better guarantees for the rights of indigenous peoples and equitable benefit-sharing when it comes to traditional knowledge, which address SDG 2 and SDG 4. In terms of environmental perspective, the standard improves the

criteria for establishing ecologically significant forests, encourages climate-friendly measures, and bans reforestation or afforestation in ecologically sensitive non-forest regions. These provisions support life on land (SDG 15) and climate action (SDG 13) by preserving critical ecosystems and enhancing the role of forests in providing ecosystem services (PEFC, 2024).

2.1.3. Comparison between FSC and PEFC standards

According to Gutierrez *et al.* (2020), the FSC program emerged in response to the failure of international bodies to address the loss of high conservation value forests, particularly in the tropics while the PEFC program was established in 1999 in response to environmental, socio-economic, political and cultural issues of forest landowners in Europe, and now acts as an umbrella organization that endorses forest certification systems through independent third-party certification. Important aspects such as the protection of the rights of Indigenous people, biodiversity, or high conservation values are taken into account by FSC standards. FSC certification makes it necessary to analyze forest ecosystems more deeply and more thoroughly than ordinary management would require or include more restrictions toward endangered species and critical areas. Despite the fact that adopting this perspective may enhance the ethical and environmentally – friendly nature of principles pursued by forest managers, it is quite possible that such managers will face challenges that come with higher costs (Cashore *et al.*, 2006).

According to Council for Sustainable Forest Management and Certification in Bulgaria, Bulgaria received endorsement from the PEFC for its national forest certification program in 2019. This program is characterized by a narrow policy scope, primarily concentrating on forest management rules without giving comprehensive attention to broader environmental or social factors. Its procedural approach resembles that of the Sustainable Forestry Initiative, which restricts explicit management goals and lacks the prescriptiveness found in the FSC program. Furthermore, the Bulgarian certification system utilizes procedural language that focuses on compliance with existing laws and regulations but does not define specific management outcomes (Gutierrez *et al.*,2020).

In Vietnam, the FSC and PEFC certification schemes are gaining popularity. However, factors such as access to the market, cost of certification and the target forest management objectives often determine which option is best (Cashore *et al.*, 2006). The FSC mandates third-party audits every five years by FSC-accredited auditors, along with annual surveillance audits to ensure ongoing compliance with FSC certification requirements (Overdevest, 2010).

2.2. Key actors in forest certification

Various actors, such as international organizations, national authorities, businesses, NGOs, local communities, and indigenous peoples, may have a stake and play a role in FSC and PEFC certification, affecting standard developments processes

as well as certification procedures and ultimately forest management operations. To comprehend the functioning of forest certification on a worldwide scale, it is crucial to consider how these diverse stakeholders operate and interact with one another.

2.2.1. International standard setting bodies and certification bodies

International bodies like the FSC and PEFC are essential for establishing global forest certification standards. They define the necessary guidelines and criteria for efficient forest management practices and certification processes. Since 1993, the FSC has been known for its rigorous environmental and social criteria, especially in terms of biodiversity, indigenous rights, and worker well-being (McDermott *et al.*, 2010). On the other hand, the PEFC, founded in 1999, offers more flexibility by acknowledging national forest certification systems that meet its global benchmark standards, thus allowing for greater adaptability to various governance contexts (Rametsteiner & Simula, 2003).

Both programs require that forest management units are evaluated by third-party certification bodies. These bodies play a critical role as they provide independent compliance verification, ensuring transparency and accountability in the certification process. For FSC certification, this process is overseen globally by Accreditation Services International (ASI), while the PEFC certification relies on national accreditation bodies in each member country to carry out its accreditation.

2.2.2. National and local public bodies

Forest certification management and promotion are heavily dependent on the active engagement of governmental bodies at both the national (i.e. central) and local levels. To align national forestry practices with international standards, governments create policy frameworks, enact forestry legislation, and implement regulatory measures. Nevertheless, despite the role of governments, the market continues to be the principal catalyst for these initiatives, as the demand for sustainably sourced products propels the implementation of certification schemes. For instance, to accomplish national SFM goals, several nations have incorporated forest certification into their legal and regulatory frameworks. According to Auld *et al.* (2008), policy contexts that are favorable to certification have been implemented in Brazil, Canada, and Finland. National and local governments ensure that certified forests fit the relevant environmental, social, and economic goals, which has an impact on how certification programs are implemented.

2.2.3. Private sector and timber industry

The private sector, forest owners and timber companies are central actors in forest certification. In order to gain entry into environmentally conscious markets, enhance their CSR reputation, and reduce the dangers associated with deforestation, these players pursue certification (Bartley, 2003). Large multinational corporations have frequently taken the lead in pushing for the implementation of certification

standards, particularly those that sell to environmentally aware countries like the European Union and North America. For example, Unilever has made significant progress towards its goal of using 100% sustainably sourced paper and board ((FSC or PEFC, with full chain of custody) by 2020. In 2018, 98% of its packaging materials met this standard. By working with 300 suppliers globally, Unilever has created a sustainable supply chain and built trust with consumers (WWF India, 2024).

On the other hand, since there are complex procedures and high costs attached to the process of gaining accreditation, most small and medium enterprises often barrier a lot of frustrations. Nevertheless, owing to the innovation of grouping certification of multiple forest owners or holders, it became easier for smaller enterprises to get certified, especially under the PEFC as there has been an increase in group certification (Durst *et al.*, 2006).

2.2.4. Non-governmental organizations

Several NGOs working in the field of sustainable development and SFM promote forest certification and deal with it. Environmental groups like Greenpeace, the Rainforest Alliance, and the WWF were instrumental in the formation of the FSC as they were seeking a solution to deforestation and forest degradation through a certification system (Gulbrandsen, 2004). By lobbying for certified products to be used by the society these NGOs create a demand for legal timber by advocating for higher standards of certification. Nevertheless, sometimes these NGOs have also changed their mind and position towards FSC, as it was for instance the case for Greenpeace International.

On the contrary, various NGOs have protested on various aspects of the certification programs, focusing particularly on the adaptability of the PEFC, stating that it is prone to economic efficiency leading to lax standards and poor forest conservation practices. NGOs that emphasize both economic development and resource preservation generally advocate for the advancement of elevated standards and the enhanced enforcement of these standards (Cashore *et al.*, 2006).

2.2.5. Indigenous peoples and local communities

Forest management as well as certification often directly affects indigenous peoples and local communities because many certified forests are situated on lands traditionally used or inhabited by these groups. FSC and PEFC mandate stakeholder involvement in the certification process, with FSC specifically prioritizing the rights of indigenous peoples. As mentioned in FSC Principle 3, there is an acknowledgment of and respect for the legal and traditional possession rights of the Indigenous peoples to their lands, territories, and resources, positioning it as an encroaching standard in this arena (McDermott *et al.*, 2010).

In line with these criteria, however, the use of certification in the community timber projects especially local community managed forests and the Indigenous forests has been rather limited. Some communities have realized certification and improved

their market chances by being certified as environmentally sound. On the flip side, other communities have struggled to achieve certification because of poor finances, inadequate skills or little assistance from government authorities (Molnar *et al.*, 2011).

2.2.6. Consumers and market dynamics

Panico *et al.*, (2022) reported that consumers' decisions to purchase certified wood products are influenced by their understanding of ecolabels, trust in certifying agencies, and general environmental attitudes. According to Auld *et.al.* (2008), as the consumer is more conscious about social and environmental issues, organizations like FSC and PEFC come into play to provide assurance of responsible forest management. However, the market for certified forest products is not evenly developed and mature everywhere in the World, and many countries, especially of the Global South, lag behind, not having an active market for the products. Discrepancies can also be observed within the Global North, with some countries being more advanced and others more delayed. Education and involving the people is vital in bringing the international market for the certified products.

2.3. Impacts of FSC and PEFC certification

Extensive research has been conducted on the environmental, social, and economic effects of forest certification programs like FSC and PEFC in different regions and types of forests. However, these effects may differ based on variations in governance, the strictness of standards, and the ability of the programs to adjust to specific regional conditions.

2.3.1. Environmental impacts

Several studies have demonstrated the environmental gains brought about by forest certification. More specifically, FSC certification criteria are often reported to contribute to the protection of biodiversity, illegal logging, prevention and mitigation, and the promotion of better forest restoration practices (van Kuijk *et al.*, 2009). Many environmental criteria under FSC, such as the prohibition of certain chemicals and restrictions on logging in high-conservation-value forests, have been linked to improved ecological results in certified forests, especially in tropical regions like Brazil and Indonesia (Blackman & Rivera, 2011).

The PEFC certification is more widely accepted in Europe and North America and is seen as being more flexible to adapt to national circumstances, allowing for the incorporation of local forestry practices into its certification standards (Rametsteiner & Simula, 2003). There are critics who argue that the less strict environmental standards of PEFC could lead to different environmental results. According to Ebeling and Yasue (2009), for example, forests that are certified by PEFC may not offer the same ecological advantages as those certified by FSC.

2.3.2. Social impacts

Forest certification programs seek to enhance societal welfare by promoting equitable labor practices, strengthening local governance frameworks, and improving the livelihoods of communities reliant on forests. There is a prevailing belief that the FSC is particularly effective in upholding social standards, especially regarding the rights of Indigenous populations and the involvement of stakeholders (Humphreys, 2006). Numerous case studies from Latin America and Africa show that FSC certification has enhanced community involvement in forest management, enhanced working conditions, and boosted the effectiveness of conflict resolution techniques (Cerutti *et al.*, 2014).

On the contrary, PEFC has effectively engaged smallholders and family-owned forests in Europe, where it holds a significant presence, as noted by Cubbage& Moore, 2009. In addition to being more accessible to small-scale forest operators due to its adaptability and focus on national requirements, PEFC often has lower overall social impacts than FSC, particularly in terms of labor rights and the inclusion of indigenous communities, as noted by Overdevest and Rickenbach (2006).

2.3.3. Economic impacts

Forest certification can have a considerable influence on owners, manufacturers, and retailers of forest products. In areas where there is a strong demand for goods that are environmentally and socially responsible, acquiring FSC certification may lead to increased prices or better access to market for certified wood products (Auld *et al.*, 2008). Internationally renowned brands and companies that value CSR frequently favor FSC-certified items in the global marketplace, which expands the market for certified manufacturers (Cashore *et al.*, 2006).

Forest operators can gain a competitive edge in particular markets due to the broader presence of PEFC certification in specific regions. PEFC's alignment with existing national standards, combined with certification mechanisms that allow grouping large numbers of smallholders (e.g. through the regional and group certification) often results in lower certification costs than FSC, making it more attractive to small and medium-sized enterprises and family-run forestry operations (Schepers, 2010). However, the financial benefits of certification are highly context-dependent, and for some operators, particularly in developing countries, the costs of certification may outweigh the economic returns (Durst *et al.*, 2006).

Chapter 3: Forest resources, policy and governance, and certification in Vietnam: A case study

This chapter first introduces Vietnam's forest resources, then analyzes key policies and governance structures, and finally ends with some details of the forest certification process.

3.1. Introduction to forest resources in Vietnam

3.1.1. Forest area

Forest ecosystems of Vietnam give significant contributions to the environment, economy and society with in the country. As of 2022 total forest area in Vietnam is reported to be 14.79 million hectares, including 10,134,082 hectares of natural forests and 4,655,993 hectares of plantation forest (according to Decision No. 2357/QD-BNN-KL, 2023). Forest accounts for about 42% of the total land area in Vietnam and hence Vietnam is ranked among the top countries with dense forest among others in Southeast Asia. Forest ecosystems provide many useful ecosystem services and associated benefits, such as high biodiversity, water supply, reduced soil erosion, and carbon storage. In addition to this, they are also important in averting the effects of global warming because they absorb the emissions of carbon dioxide that trigger global warming (MARD Annual Report, 2022).

3.1.2. Forest types

According to Article 5, Clause 1 of the 2017 Forestry Law, there are three broad divisions of the forests in Vietnam, namely the special use forests, the protective forests and the production forests. Special use forests include forests that are more generally devoted to the purpose of preserving natural reserves of forests or ecosystems as well as genetic resources of forests, for education and scientific purposes as well as for historical and cultural sites (Forestry Law 2017). These also include national parks, biosphere reserves and bioregions. Protective forests are those which are meant to provide water resources, as well as minimize or inhibit soil loss and safeguard areas from disasters. They can be categorized as including watershed forests and coastal forests (Forestry Law 2017). The production forests are mainly meant for the provision of forest products and they may be therefore coupled with other commercial operations. The detailed mechanisms for determination and delineation of forest types and the associated regulatory framework shall also be provided by the government (Forestry Law 2017).

Vietnam's forests are diverse, including several distinct types. Natural forests are mostly found in the northern and central highlands and include tropical rainforests, mangroves, and temperate broadleaf forests. Planted ones are mostly in the lowland and coastal areas and consist of fast-growing trees, such as acacia and eucalyptus, utilized for timber and wood pulp production (USAID, 2024). The raw materials for the wood processing sector, which is an important export-oriented sector, are provided by

these forests, thus making a significant contribution to the economy of the country (VIFOREST, Bình Định FPA, HAWA, BIFA, & DOWA & Forest Trends, 2021).

3.1.3. Forest trends

An overview of key recent developments and trends for forest resources and the forest sector in Vietnam are presented within this section.

3.1.3.1. Increase in forest cover

The first publication to report on forest data in Indochina was by Chief Forestry Inspector Maurand in 1943. At that time, Vietnam had 14.3 million hectares of natural forests and no plantation forests, with a forest cover of 43%. However, forest cover was quickly reduced in the next 50 year, and by the year 1990, it reduced to 9.18 million hectares, i.e. 27.2% of the country's total area. Since 1995, forest area has increased due to forest rehabilitation and plantation programs led by the Vietnamese government. By the end of 2006, the total forest area in Vietnam reached about 12.87 million ha (38% forest cover), of which 10.41 million ha were natural forests (about 81 % of the national forest area) and 2.464 million ha were plantation forests (about 19%) (Forest Science Institute of Vietnam [FSIV] & Food and Agriculture Organization of the United Nations, 2009). According to Decision No. 2357/QD-BNN-KL in 2023, as of 2022, the total forest area in Vietnam is reported to be 14.79 million ha, including 10.13 million ha of natural forest (68%) and 4.65 million ha of plantation forest (32%), accounting for about 42% of the total land area.

The decrease in natural forest area within the last 15 years from 10.41 million ha to 10.13 million ha poses a threat to biodiversity conservation and habitat destruction, while the expansion of plantation forest area, from 2.46 million ha to 4.65 million ha indicates a change in focus in forest management in Vietnam. While forest cover has increased in quantitative terms, in qualitative terms, it might have decreased. Moreover, the increasing area covered by plantations has management implications. These trends appear to go against Vietnam's commitments to SFM as well as conservation policies.

3.1.3.2. Focus on sustainable forest management

In recent years, SFM has been notably encouraged in Vietnam's forestry policies since it brings together economic, social and environmental dimensions in the management of forests. In response, the Vietnamese government has adopted fundamental strategies including the Vietnam Forestry Development Strategy to 2021 which tries to develop the forestry sectors but always places the concern of environmental sustainability, enhancing economy and reducing poverty (USAID, 2024).

SFM policies minimize the overharvesting of timber and non-timber forest products (NTFPs) and are aimed at increasing the worth and output of forests- all within the limits of environmental protection (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA, & Forest Trends 2021). These policies additionally stress the contribution of

forests towards both adaptation to, and mitigation of climate change, as well as the preservation of biological diversity (USAID, 2024). Sustainable strategies are therefore promoted by the government in a bid to achieve a state of equilibrium between safeguarding the forests' health and the livelihood of the people, especially those who live in rural areas dependent on forests (USAID 2024).

Besides the domestic efforts, Vietnam's attachment to the international standards of sustainability is reflected through the implementation of forest certification programs such as FSC and PEFC which further orientate the country's forestry with global principles of SFM (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA, & Forest Trends, 2021).

The Vietnam - European Union (EU) Voluntary Partnership Agreement (VPA), entered into force in June 2019, serves as a crucial bilateral trade agreement aimed at enhancing legal timber trade and improving forest governance in Vietnam. By establishing a Timber Legality Assurance System, the VPA ensures that timber products exported to the EU are legally sourced and compliant with Vietnamese laws. One of its primary objectives is to promote sustainable forest management, fostering practices that conserve biodiversity, protect ecosystem services, and reduce greenhouse gas emissions while empowering local communities through guaranteed rights and participation in forest management. The VPA's implementation enhances the international market reputation of Vietnamese timber, boosting export opportunities and contributing to the sustainable development of the forestry sector, which benefits local economies in the long term (Center for WTO and International Trade, Vietnam Chamber of Commerce and Industry, 2019).

3.1.3.3. Emergence of forest certification

Over the past few years, Vietnam has achieved considerable improvement in the uptake of forest certification schemes like FSC or PEFC. These certification systems are very important in the promotion of sustainable approaches, tools and techniques in forestry management such that the operations conform to internationally accepted criteria for the environmental, social, and economic viability of forestry (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA, & Forest Trends, 2021).

As of 2021, many enterprises and community forests of Vietnam had achieved FSC and/or PEFC certification reflecting an enhanced approach towards responsible forest practices (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA, & Forest Trends, 2021). Certification has enhanced forest management practices, and also opened the way to international markets, especially to those markets, which require sustainable products (USAID, 2024). Timber and NTFPs from Vietnam are more competitive in the world timber market now, improving the country's place in the trade of forest products (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA, & Forest Trends, 2021)

The Vietnamese government has encouraged this trend by considering forest certification as one of the means of achieving SFM and improving the socio-economy of the country (USAID, 2024).

3.1.3.4. Biodiversity conservation efforts

The Government has made appreciable attempts towards biodiversity conservation and enhanced the legal framework. This is exemplified in the 2008 Biodiversity Law, 2017 Forestry Law, and 2014 National Strategy on Biodiversity Conservation. Moreover, a range of other laws and regulations have been promulgated, including Decree 06/2019/ND-CP, which is dedicated primarily to enforcing legal forest and wildlife conservation (Tran, 2020).

3.1.4. Forest ownership and management

In Vietnam, the ownership of forests can be classified into three categories: state-owned enterprises, private companies, and local communities. State ownership remains dominant, especially in natural forests, but private and community ownership prevails in the case of planted forests (Sikor & To, 2011). According to the FAO's assessment report in 2020, the forest ownership structure in Vietnam as of 2015 reveals that private ownership covers 4.49 million ha. This includes 3.14 million ha owned by individuals, 0.24 million ha held by private business entities and institutions, and 1.11 million ha owned by local, tribal, and indigenous communities. In contrast, public ownership accounts for 9.22 million ha, while 0.34 million ha remain classified as unknown or other. This distribution underscores the significant role of private ownership in Vietnam's forestry sector, particularly among individuals and local communities, which plays a crucial part in the management and conservation of forest resources.

Efforts have been made by the government to create policies to implement community forestry management with the expectation of changing the institutional structure of forest management and promoting community forest management practices (Van *et al.*, 2022). This practice of involving the local people has also supported the communities' attempts to derive income from forest resources like timber, bamboo, herbs, and other NTFPs (FAO, 2020). However, Clement and Amezaga (2009) suggested that the national afforestation campaign in Vietnam has not successfully involved households in the forestry sector and that forestry land allocation to households has often disrupted existing land-use systems with little impact on afforestation.

3.1.5. Economic and social importance

Vietnam's forests are integral to the country's economy, particularly in rural areas, where they provide essential resources and livelihoods for millions of people. The forestry sector contributes to around 1.5-2% of the national Gross Domestic Product (GDP), with timber and NTFPs playing a key role in local economies (Van *et al.*, 2022). The wood processing industry, which heavily relies on planted forests, is a significant contributor to Vietnam's export economy, with timber and furniture exports exceeding $13 billion in 2021 (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA, &

Forest Trends, 2021). Forests also contribute to job creation, especially in rural and mountainous regions, and are central to the government's poverty alleviation strategies (Decision No. 523/QD-TTg, 2021).

In response to the increasing pressures from economic growth and demand for resources, the Vietnamese government enacted a nationwide Payments for Forest Environmental Services (PFES) policy in 2010 through Decree No. 99/2010/ND-CP. This policy requires users of forest services, including water supply companies and hydropower plants, to compensate forest owners, thereby promoting conservation and sustainable resource use. The MARD has effectively established procedures for implementing PFES, which are linked to the United Nations (UN)-led Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative to enhance sustainable forestry practices and benefit local communities (Vietnam Forest Protection and Development Fund, 2014).

3.1.6. Challenges and threats

Ngo and Madhi (2017) pointed out that Indonesia and Vietnam are undergoing high pressure from trying to protect current forest areas while maintaining a high rate of economic growth in the context of rapid development. Challenges were found in centrally managed forest management system that excluded local people from participating in the decision-making process, abandoning them from access to forest rights, and eliminating them from their forest-dependent livelihood practices. Although they have differences in political and economic development backgrounds, both countries have transferred forest management rights to local people through community-based forest management.

Meyfroidt *et al.* (2013) found deforestation in the Central Highlands of Vietnam was mainly directly caused by shifting cultivation for annual crops, but this was partly driven indirectly by expansion of coffee and other perennial crops over agricultural lands. Displacement of shifting cultivation into the forest margins, pushed by market crops expansion, was the spatial manifestation of the marginalization of local ethnic minorities and poor migrants, pushed by capital-endowed migrants.

Khuc *et al.* (2018) highlighted the pressing issue of climate change and its adverse effects on developing countries like Vietnam. In response, Vietnam has launched a significant program known as REDD+. The authors underscored the most significant deforestation and degradation occurred in the north central, northeast, central highland, and northwest regions.

Cochard *et al.* (2023) found that substantial forest decline in Thua Thien Hue Province, central Vietnam resulted from poor forest management by "archaic" people who had subsisted by swiddening in confined, forest-surrounded spaces. Processes of deforestation occurred in steps and eventually coincided with widely transformative reforestation. Repeated degradation of natural forests (often through multiple impacts) produced some types of lower-biomass forests, thickets which in more accessible lower-lying areas could later – step by step – be replaced with acacia monocultures.

According to data from Global Forest Watch, from 2002 to 2023, Vietnam lost 756,000 ha of humid primary forest, making up 22% of its total tree cover loss in the same time period. Total area of humid primary forest in Vietnam decreased by 11% in this period (Figure 1) (Global Forest Watch, 2024).

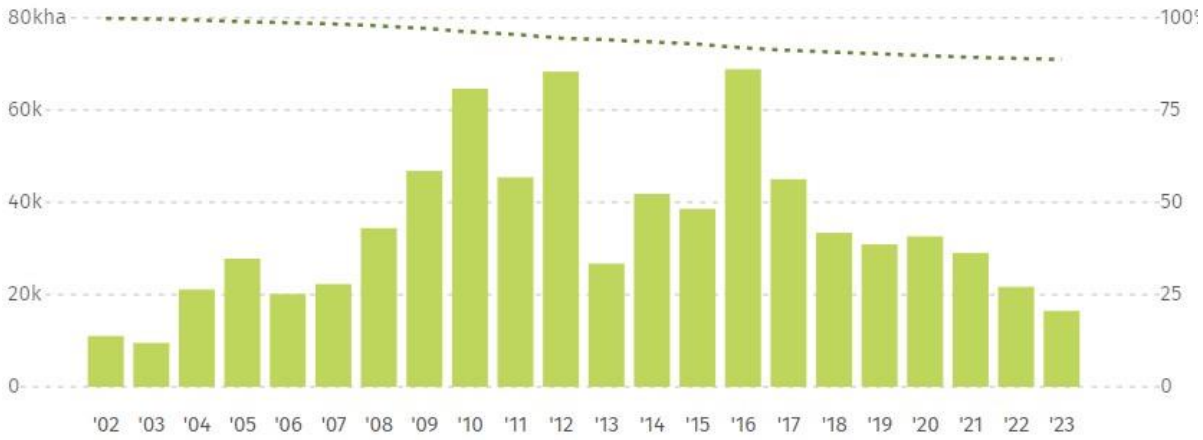

Figure 1: Primary forest loss in Vietnam in the 2002 – 2023 period

Stas *et al.* (2020) found that deforestation in tropical regions, primarily caused by logging in tropical Asia, is leading to significant carbon emissions. From 2001 to 2023, Vietnam lost 3.56 million ha of tree cover, which is equivalent to a 22% decrease in tree cover since 2000. This corresponds to a total amount of greenhouse gas emissions equal to 2.52 gigatons of CO_2 (Figure 2) (Global Forest Watch, 2024).

Figure 2: Tree cover loss in Vietnam in the 2001 – 2023 period

3.2. Forest policy and governance in Vietnam

This section provides and overview of key policy initiatives and governance aspects that are relevant for the Vietnamese forest sector within the scope fo this research.

3.2.1. Key forest policies

The goal of the target program for the sustainable development of forest management dated June 16, 2017 No: 886/QD-TTg was also set for the period 2016-2020, which is part of Vietnam's global strategy on SFM. The program is intended to promote the sustainable development of a forest management system and is focused on furthering productivity and quality as well as the value of the forests without jeopardizing environmental protection. The focus is mainly on increasing the returns from forest products including both timber and NTFPs, such as bamboo and other products, which besides representing valuable inputs for industrial processing may significantly contribute to livelihoods of local communities. Understanding the importance of forests in coping with natural hazards and contributing to welfare, the program helps promote environmental and social wellbeing providing job opportunities and alleviating poverty in the countryside. In addition, it also highlights the importance of forests as part of broader national strategies (energy, bioeconomy, industry, etc.) and maintaining national security, the ecosystems' function, water resources integrity and biological diversity. The plan of the initiative also encompasses some action strategies like enhancing the skills of the forest managers, allocating funds and resources for research and development, making sure that the policies are in line with national and international obligations as well as instituting systems to monitor advancement. Overall, this comprehensive program aims to ensure a sustainable future for Vietnam's forests and forest-dependent communities, considering the environmental, economic, and social aspects of forestry and forest resources.

Decision No. 523/QD-TTg dated April 1, 2021, has been approved by the Prime Minister for the Vietnam Forestry Development Strategy for the period 2021-2030 and vision to 2050. This strategy is focused on the modernization and sustainable development of the forestry sector, harnessing the potential of forests to drive socio-economic progress, with a priority on environmental protection and adapting to climate change. The main objective is to maximize benefits from forest resources, contribute positively to national economic development, and improve people's quality of life. The strategy emphasizes sustainable forest management, balancing economic benefits and environmental protection, while promoting biodiversity conservation and forest restoration. To achieve this goal, the strategy proposes to modernize the forest management system, reform administration, enhance cooperation between relevant agencies, and especially the active participation of local communities in the decision-making process. By promoting participatory governance, the strategy seeks to empower local populations and ensure that their rights and interests are recognized in forest management practices. The strategy also includes the development of ecotourism and agroforestry, two types of sustainable forestry that can provide alternative sources of income while safeguarding the environment. It is imperative to secure adequate funding for the research and development of new products if one seeks to spur advancements in sustainability-oriented forestry practices and technologies. Vietnam regards its forests as not just an asset for the economic development but also an effective tool against global warming as they absorb carbon

dioxide and increase resilience to climate change impacts while also mitigating them. To enable the forests to deliver the environmental, social and economic functions in a foreseeable future, Decision 523/QD-TTg outlines a comprehensive strategy on the sustainable development of 'Vietnam Forest Sector' in the long term.

Decision No. 2357/QD-BNN-KL was issued by the Ministry of Agriculture and Rural Development on June 14, 2023, officially announcing the national forest status in 2022. In response to these issues, the Vietnamese government is vigorously promoting SFM through a range of policies and initiatives designed to improve forest conservation and management. Notable actions include the execution of reforestation programs aimed at expanding forest cover, especially in regions impacted by overexploitation or degradation. These programs not only concentrate on expanding the total forest area but also prioritize the restoration of ecosystems and enhancement of biodiversity. The government is striving to enhance forest management by embracing more sustainable approaches and promoting the use of certification systems like FSC and PEFC. Through the integration of these certification standards, the government seeks to guarantee the responsible and sustainable management of both natural and plantation forests. In addition, the government's strategy includes significant awareness campaigns on SFM, which aim to educate local communities, stakeholders, and the public on the importance of SFM practices, the value of preserving healthy ecosystems, and the economic and social benefits of sustainable forestry.

3.2.2. Key actors in forest governance

The forest governance structure in Vietnam is very broad and involves the participation of a large number of actors dealing with management and conservation of forest resources. Policy formulation, forest management guidelines monitoring and enforcement throughout the country is under the Ministry of Agriculture and Rural Development (MARD) which is the apex body. The development and realization of national strategies regarding SFM falls under the MARD that is also responsible for making the country's strategies in line with policies and commitments (Center for People and Nature, 2014).

Functions of the provincial forest management boards are exercised at the regional level in accordance with the policies and guidelines provided by the MARD. Such boards are responsible for certain reforestation activities, local practices of forest management, and confrontation of illegal logging and land grabbing (USAID, 2024).

Forest enterprises and other actors from the private sector are playing a more prominent role in the Vietnamese forestry industry. Most of them practice SFM and aspire for FSC as well as PEFC certification which increases their market outreach and shows their responsible management of the resources (VIFOREST, Bình Định FPA, HAWA, BIFA, DOWA & Forest Trends 2021).

NGOs also contribute significantly towards the promotion of SFM practices, the advocacy of deforestation related issues, and work together with the local communities

and their public bodies towards conservation efforts. Their participation helps build the governance structure by offering technical assistance and encouraging local people's involvement (Tran, 2021).

Finally, local communities, residents of the rural forests, are increasingly more involved in participatory governance. Local people are able to sustainably manage forest resources through community forestry approaches and programs on allocation of forest lands and help in conserving biodiversity (Center for People and Nature, 2014). People involved in such activities are committed to ensuring that forest management contributes to conserving forest resources while contributing to achieving the country's and the world's forestry and sustainable development strategic targets.

3.3. Forest certification in Vietnam

3.3.1. Forest Stewardship Council

The FSC National Forest Stewardship Standard of Vietnam (FSC-STD-VN-01-2018) was developed by the Standard Development Group Vietnam and officially approved by FSC International on October 17, 2018. The standard will remain valid until 2025. In addition to the globally applied FSC P&C, this standard includes specific indicators that have been adapted to the unique conditions of Vietnam, allowing for effective implementation at the Forest Management Unit level. These localized indicators ensure that the standard aligns with Vietnam's environmental, social and economic context.

The FSC Forest Stewardship Standard for Smallholders in Vietnam (FSC-STD-RAP-VNM-01-2022) was approved on 1 September 2022 by the Performance and Standards Unit. It applies specifically to small-scale plantation forests, including woodlots, orchards, or agroforestry systems in block, linear, or strip forms, as well as boundary trees and small groups of trees. This standard is designed for forest management units of less than 20 hectares and covers forest products such as rough wood and various NTFPs, including latex rubber, seeds, fruits, nuts, honey, resins, oils, rattan, bamboo, and others. However, this standard does not apply to any rough wood or NTFP from natural forests and excludes short-rotation agricultural crops that are primarily grown while the canopy is still open.

As of the latest data from FSC (FSC, 2024), updated on October 1, 2024, Vietnam has a total forest area of 434,725 hectares certified under the FSC. This includes 92 FM certificates and 1,844 CoC certificates.

3.3.2. Program for the Endorsement of Forest Certification

Vietnam Forest Certification Office (VFCO) is the organization implementing the Vietnam Forest Certification Scheme (VFCS) under Decision No. 1288/QD-TTg of the Prime Minister. VFCS was endorsed by PEFC in October 2020. Implementing SFM and forest certification is an important goal of the forestry sector in the period of 2021 – 2030 and a vision towards 2050, directly contributing to Vietnam's goal of sustainable development, efforts to mitigate and adapt to climate change, especially the goal of

achieving net zero emissions in 2050. VFCS aims to increase the added value of forestry through the application of qualified varieties and appropriate forest management measures, improving and enhancing ecosystem services, and protecting biodiversity; ensuring the legal source of wood materials to meet the certification requirements of the market (VFCO, 2024).

The VFCO developed the SFM Standard VFCS/PEFC ST 1003:2019. The process of creating and issuing the standard complies with Vietnamese legal regulations and the Standard Development Procedure approved by the General Department of Forestry. It is also based on the requirements outlined in the PEFC Standard Setting Procedures (PEFC ST 1001:2010), ensuring it is widely accepted both domestically and internationally.

Additionally, the VFCO developed the Group Sustainable Forest Management Standard VFCS/PEFC ST 1004:2019, based on the PEFC Group Forest Certification Standard (PEFC ST 1002:2018). This standard requires the establishment of an organizational structure comprising a group entity and its members. The group entity represents individual forest owners or managers in obtaining forest certification, ensuring compliance with sustainable forest management standards under the national certification system, and conducting internal group assessments.

There are 32 organizations certified for FM under the VFCS/PEFC national certification system in Vietnam, covering a total area of 179,606 ha. All of these certifications are group certifications, and the forest type primarily consists of plantations of acacia hybrid and rubber. In addition, 126 organizations are certified for the PEFC Chain of Custody in Vietnam. Among these, 86 hold individual certifications, while 40 are certified for multisite certifications. The data has been updated as of October 1, 2024 on the VFCO website[1].

Table 1 provides a concise overview of the current state of forest certification in Vietnam, focusing on the two primary standards: FSC and PEFC (VFCS).

Table 1: Summary of forest certification in Vietnam (updated on 01/10/2024)

Criteria	**FSC**	**PEFC (VFCS)**
Certified area (ha)	434,725	179,606
FM certificates	92	32
Coc certificates	1,844	126
Data source	FSC Connect website (https://connect.fsc.org/)	VFCO website (https://vfcs.org.vn/)

Table 1 shows that the total certified forest area of both FSC and PEFC (VFCS) is 614,331 ha, accounting for only about 4.16% of Vietnam's total forest area (14.79 million ha). This indicates that there is still significant potential for the development of forest certification in Vietnam. Additionally, FSC certificates outnumber PEFC (VFCS) certificates, indicating that FSC remains the more popular choice in Vietnam.

[1] https://vfcs.org.vn/

Chapter 4: Research methodology

In this chapter, the research methods used in this thesis are presented. The chapter describes the study area (4.1), then then the general research approach (4.2) and finally reports in detail the data collection techniques (4.3) and the analytical methods (4.4) applied for the research including stakeholder analysis and its importance in the assessment of the effectiveness and the implications of forest certification in the socio-economic and environmental context of Vietnam.

4.1. Study area

The study focuses on Vietnam's forest management sector, particularly concentrating on the comparison of the national practice with respect to the two forest certification schemes, i.e. FSC and PEFC. The contribution of forests to Vietnam's economy is both instrumental and immaterial which play a crucial role in the improvement of people's livelihoods, biodiversity conservation and the mitigation of climate change effects. Attention is given to the forest territories in Vietnam where FSC and PEFC forest certification systems have been introduced.

In recent decades, there has been a noticeable change in policies which focus on SFM in Vietnam's forestry sector. As a result, there has been such increased interest in certification systems as FSC and PEFC, in an attempt to ensure that forest management is environmentally, socially, and economically sound. The emphasis of this study will be on regions with certified forest operations according to either FSC or PEFC standards.

These span different cases, forest types, operations and actors, including:

• Natural and plantation forests in key forest-rich provinces like Quang Tri, Binh Phuoc and Lam Dong, where both certifications have been applied (Figure 3).

• Smallholder plantation areas and state-owned forest enterprises, representing different forest management units in Vietnam.

• Forest management companies and cooperatives involved in producing timber and non-timber forest products under both certification schemes.

The research analyzes how FSC and PEFC standards are adapted to Vietnam's specific context, addressing challenges such as land tenure issues, deforestation pressures, and the socio-economic conditions of forest-dependent communities. It also assesses the involvement of key actors, including:

• Government agencies (MARD, VFCO,…)

• Forest owners including both public and private ownership.

• Local communities and smallholders involved in certified forest operations

• Certification bodies, NGOs and other relevant organizations facilitating the certification process.

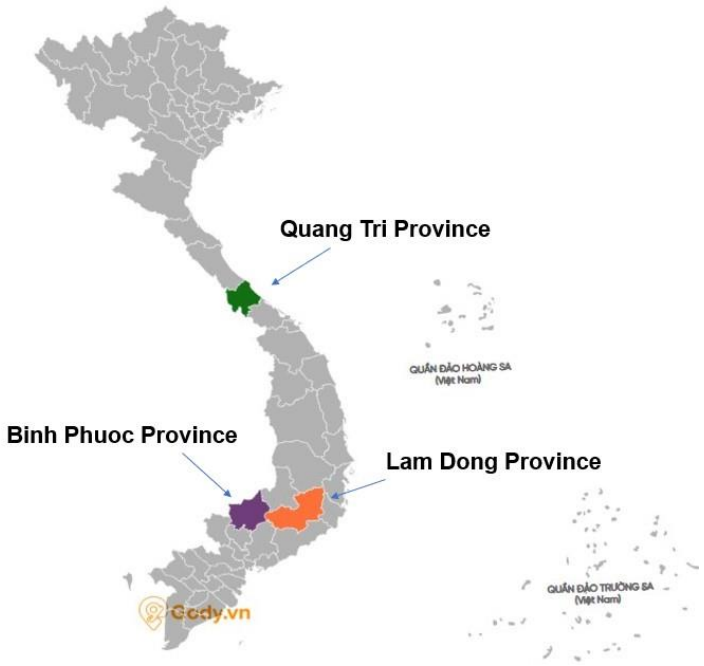

Figure 3: Provinces of Quang Tri, Binh Phuoc and Lam Dong, Vietnam

4.2. Research approach

This thesis employs a desk study method which relies on secondary data and does not involve primary data collection. The method entails detailed study of the available information including the documents reporting, standards and literature related to the FSC as well as PEFC standard on forest management in Vietnam and any other available documents.

The option of using desk-based approach is due to the availability of sufficient and reliable secondary sources that describe the processes, impacts and stakeholder engagement in the FSC and PEFC framework in so much detail. In addition, this method makes it possible to comparatively analyze the two certification systems in a more detailed manner without having to spend time and resources for gathering primary data by means of interviews, surveys, etc.

The desk-based study approach includes:

(1) Assessment of FSC and PEFC standards and certification guides in relation to their environmental, social, and economic criteria.

(2) Exploring case studies of certified forests in Vietnam in order to consider the effects of both certification systems at the local level.

(3) Investigating policy documents, certification body reports and academic articles focusing on stakeholder participation in the process of FSC and PEFC implementation in Vietnam.

(4) Assessment of results presented in sustainability reports of FSC or PEFC-certified organizations or companies.

A tool using AI – ChatGPT-4o mini was applied to revise the text and elaborate its quality. The ChatGPT-4o mini applied for proofreading the thesis document focused

on correction of the grammar, language consistency, and overall structure. Nonetheless, the author also sufficiently modified and adjusted the textual content generated by AI to fit within the context of the study, be accurate and relevant. The author embraces analytical works and edits the final manuscript to ensure that both the integrity of the research and all relevant academic standards are preserved.

4.3. Data collection

For the purposes of this thesis, primary information has been gathered through conducting an extensive review of the existing literature and content of the existing databases and technical reports on the FSC and PEFC certifications in Vietnam.

4.3.1. Document review

A comprehensive review of relevant documents was conducted, including:

• Policy and regulatory frameworks: Analysis of available national laws as well as policies and regulations related to forest management and certification, national forest policies and strategies as well as guidelines of relevant ministries responsible for implementing forest management.

• FSC and PEFC certification standards: These documents are collected from the official websites of FSC, PEFC, VFCO.

• Case studies: Search for and collect studies that elaborate on the use of the FSC and PEFC standards in Vietnam. These case studies also highlight the practical aspects, opportunities, barriers and effects of certification based on each of the schemes.

• Documents of compliance with FSC and PEFC standards in Vietnam, such as FSC Annual Report 2022, Conformity assessment of the Vietnam Forest Certification Office scheme for sustainable forest management against the PEFC Council requirements*,…*

• Academic literature: Analyzing scholarly articles, dissertations and conference papers that examine the impact of certification systems in Vietnam in terms of economic, social as well as environmental dimensions.

4.3.2. Reliability

To ensure the reliability of the data collected, the following strategies were employed:

• Use of reputable and authoritative sources: data is gathered from credible sources, including official FSC and PEFC documents, government publications, and peer-reviewed academic literature. This allows the guarantees to be reliable as well as to be consistent.

• Cross verification of more than one sources: more than one source of data is used in verifying the results and/or the conclusions. By using cross verification of different

document types such as case studies, policy documents and certification reports, the research improves the trustworthiness and the strength of the outcomes.

4.4. Data analysis

Given the desk-based research approach and the data collection methods, the following data analysis techniques are followed:

(1) Content analysis: a system is created for the organizing and effective processing of the material contained in the documents. This assists in pinpointing the primary subjects, developments, and measurements associated with the use of FSC and PEFC standards in Vietnam.

(2) Comparative analysis: to this aim, a comparative matrix has been used to compare FSC and PEFC standards on the principles, criteria, and implementing processes. The matrix includes collected data from the case studies and reports as the basis of the analysis of both certification systems in Vietnam.

(3) Stakeholder analysis: stakeholder's interests, roles, and interactions such as: government, forest owners, local communities, NGOs, certification agencies, and international bodies, with respect to FSC and PEFC were analyzed for the purpose of understanding the opportunities and challenges encountered by both certification systems.

This combination of content, comparative and stakeholder analysis facilitates the accomplishment of a comprehensive assessment on the effectiveness and effects of the FSC and PEFC standards in Vietnam.

Chapter 5: Results

This chapter presents the findings related to forest certification in Vietnam, focusing on key actors involved, a comparative analysis of FSC and PEFC forest management standards, and the impacts of these certification schemes on the forest sector at the national level.

5.1. Key actors in forest certification in Vietnam

Table 2 provides a comprehensive overview of the various stakeholders involved in the process of forest certification in Vietnam.

Table 2: Key actors in forest certification in Vietnam

Actor	Main role	Sector	Relevant
Ministry of Agriculture and Rural Development	Formulates and implements policies related to sustainable forest management and certification standards.	Public	FSC, PEFC
Ministry of Natural Resources and Environment, Ministry of Industry and Trade, Ministry of Science and Technology	Collaborates with the MARD on policy implementation	Public	FSC, PEFC
The Department of Forestry	Manages and oversees forest protection policies and certification processes.	Public	FSC, PEFC
The Provincial Departments of Agriculture and Rural Development	Implements MARD policies at the provincial level	Public	FSC, PEFC
The Vietnam Forest Certification Office	Develops national forest certification standards based on PEFC standards.	Public	PEFC
Certification body	Evaluate and issue certifications for forest areas according to FSC and PEFC standards	Public/Private	FSC, PEFC
Forest owners	Engage in sustainable forest management practices to achieve certification	Public/Private	FSC, PEFC
Local communities	Participate in forest management and benefit from certification through community forestry initiatives.	Civil society	FSC, PEFC
Non-Governmental Organizations	Advocate for community rights, support the certification process, and promote sustainable practices.	Civil society	FSC, PEFC
Academic and research institution	Provide research, data, and analysis on forest management practices, the	Public/Private	FSC, PEFC

	impacts of certification, and capacity building for stakeholders.		
FSC Greater Mekong - Vietnam	Offers support and resources to stakeholders in the forestry sector.	Civil society	FSC
Industry and Trade Sectors	Promote the supply of certified products and encourage businesses to adopt sustainable forestry practices.	Public/Private	FSC, PEFC

5.1.1. Government agencies

Government agencies play a crucial role in forest certification in Vietnam, acting as regulatory bodies, facilitators, and implementers of policies related to sustainable forest management and certification standards.

5.1.1.1. Ministry of Agriculture and Rural Development

The Ministry of Agriculture and Rural Development (MARD) is the primary governmental body responsible for forestry policies, regulations, and management in Vietnam. It oversees the development and implementation of national forest strategies, including forest certification programs. The MARD collaborates with international organizations to align Vietnam's forest management practices with global standards, such as the FSC and the PEFC. Additionally, it leads and coordinates with other ministries, sectors, and local authorities to ensure a unified and effective approach to forestry management, promoting sustainable practices and enhancing the resilience of forest ecosystems (Trieu *et al.*, 2021; Decision No. 523/QĐ-TTg).

The Department of Forestry is an organization under the MARD, responsible for advising and assisting the Minister of Agriculture and Rural Development in state management regarding forest management, forest development, nature conservation, and biodiversity within forest ecosystems. This includes the use of forests, forest environmental services, and organizing forestry production associated with the processing and trade of forestry products within the scope of state management as delegated by the Minister. Additionally, the Department is tasked with developing national technical regulations, standards, economic-technical norms, and national standards related to specialized management areas within its scope of responsibility, as assigned by the Minister and in accordance with the law (Department of Forestry, 2024).

The Provincial Departments of Agriculture and Rural Development are hierarchically linked to the Ministry of Agriculture and Rural Development (MARD). They operate under the guidance and supervision of MARD, functioning as its local-level representatives. These departments are responsible for implementing national policies and programs related to agriculture, forestry, and rural development within their respective provinces, ensuring alignment with MARD's directives while addressing local needs (Decision No. 523/QĐ-TTg).

5.1.1.2. Vietnam Forest Certification Office

The Vietnam Forest Certification Office (VFCO), the organization responsible for implementing the VFCS under Decision No. 1288/QD-TTg, was endorsed by PEFC in October 2020. Sustainable forest management and forest certification are key objectives of the forestry sector for 2021-2030 and beyond, contributing to Vietnam's sustainable development goals, climate change mitigation and adaptation efforts, and the target of achieving net zero emissions by 2050. VFCS aims to increase the added value of forestry through the application of qualified varieties and appropriate forest management measures, improve and enhance ecosystem services, protect biodiversity, and ensure the legal source of wood materials to meet market certification requirements (VFCO, 2024)

5.1.1.3. Other relevant agencies

The Ministry of Natural Resources and Environment collaborates with forestry agencies to ensure that forest certification processes are carried out effectively and in accordance with environmental laws. The Ministry of Industry and Trade coordinates with the MARD to implement policies and solutions that promote the market, facilitate trade, and address trade barriers for timber products and non-timber forest products. The Ministry of Science and Technology collaborates with the MARD to develop and implement plans for establishing standards and regulations that ensure quality and safety in forestry products, contributing to the sustainable development of the forestry sector (Decision No. 523/QĐ-TTg).

5.1.2. Certification bodies

Various accreditation certification bodies assess and certify forests against FSC and PEFC standards. Their role includes conducting audits and ensuring that certified entities meet the respective standards.

The Bureau Veritas in Vietnam (BVVN) provides assurance through tailored, independent certification services. They offer customized solutions to ensure that organizations meet national and international standards, enhancing trust and confidence in their processes, products, and services (Bureau Veritas in Vietnam, 2024).

The Bureau of Accreditation (BoA), established in 1995 under the Directorate for Standard and Quality (STAMEQ), has been part of the Ministry of Science and Technology since July 2009, following Decision No. 1101/QĐ-TTg. BoA offers accreditation programs for testing laboratories, medical testing laboratories, calibration laboratories, certification bodies, and inspection bodies (Bureau of Accreditation, 2024).

The Vietnam Institute of Accreditation (IAF) operates with two primary objectives. First, it ensures that accrediting bodies of its forum's members recognize only qualified organizations, preventing conflicts of interest. Second, the IAF establishes Multilateral Recognition Arrangements between member accreditation

bodies, which help reduce risks for businesses and customers by providing certifications that are trusted globally (Vietnam Institute of Accreditation, 2024).

For FSC certification, SCS remains the leading certification body, representing 37.9% of the total certified organizations (110 out of 290). This significant share suggests SCS's strong presence and credibility in the FSC certification market. For PEFC certification, SGS also stands out as the largest certification body, accounting for 46.8% of the certified organizations (74 out of 158). This reflects SGS's dominance and expertise in the PEFC certification framework.

GFA is the certification body with the largest share of certified organizations, representing 60% of the total for FSC FM/CoC and 65.63% for PEFC FM. This significant representation of GFA in both certification schemes indicates its strong position and credibility within the certification landscape in Vietnam (Figure 4.1 and Figure 4.2).

SCS is the largest certification body for FSC CoC, holding approximately 38.6% of the share (110 out of 285 certified organizations), while SGS dominates the certification for PEFC CoC, with a significant share of about 58.73% (74 out of 126 certified organizations). Additionally, BV ranks second among certification bodies for both FSC FM/CoC and PEFC CoC, with shares of approximately 25.26% (72 out of 285) and 25.4% (32 out of 126), respectively (Figure 4.3 and Figure 4.4). These figures highlight the varying dominance of certification bodies across different certification schemes, indicating the competitive landscape in forest certification within Vietnam.

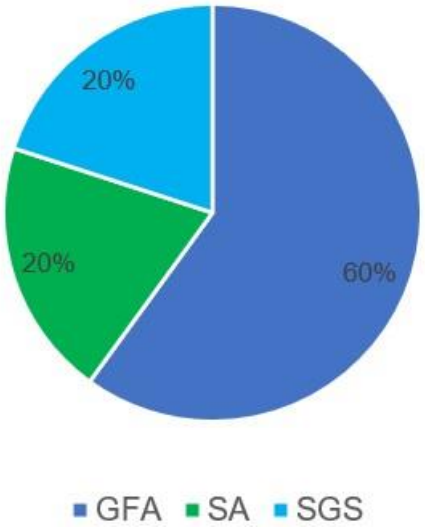

Figure 4.1. Share of certified organizations per CB for FSC FM/CoC

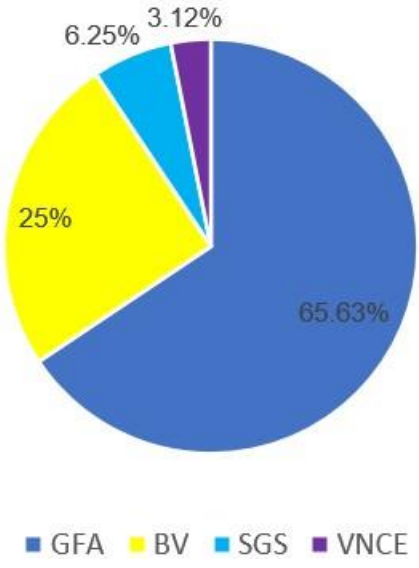

Figure 4.2. Share of certified organizations per CB for PEFC FM

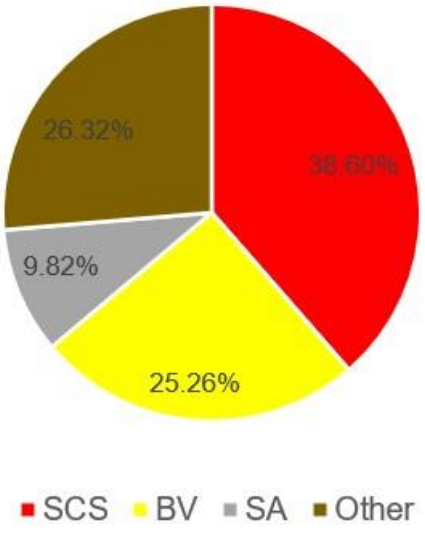

Figure 4.3. Share of certified organizations per CB for FSC CoC

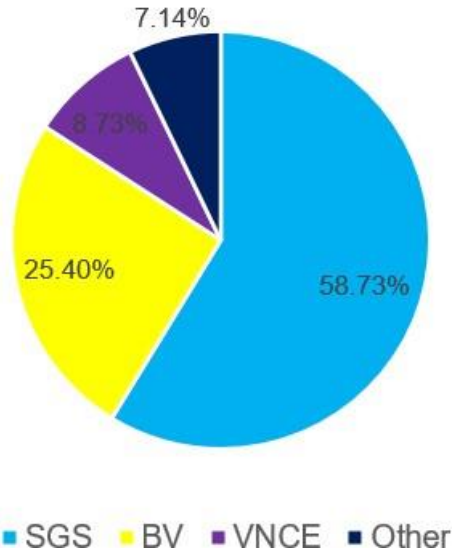

Figure 4.4. Share of certified organizations per CB for PEFC CoC

Figure 4. Share of certified organizations per CB for both FSC and PEFC

Table 3 provides a comparison of the number of organizations in Vietnam certified under the FSC and PEFC standards, categorized by certification bodies. It is evident that the number of organizations certified under FSC is significantly higher than those certified under PEFC, particularly for CoC certifications. This suggests that FSC may have achieved wider acceptance and adoption in the industry.

Table 3: Number of organizations in Vietnam certified for FSC and PEFC by certification body

(Data extracted from FSC (FSC, 2024) and VFCO (VFCO, 2024)

FSC		**PEFC**	
Number of organizations certified for FSC FM/CoC by certification body		Number of organizations certified for VFCS/PEFC FM by certification body	
The GFA Certification GmbH (GFA)	3	The GFA Certification GmbH (GFA)	21
Société Générale de Surveillance (SGS)	1	Bureau Veritas (BV)	8
SA Certification Srl (SA)	1	Société Générale de Surveillance (SGS)	2
In total	**5**	Vietnam Certification Center (VNCE)	1
		In total	**32**
Number of organizations certified for FSC CoC by certification body		Number of organizations certified for VFCS/PEFC CoC by certification body	
SCS Global Services (SCS)	110	Société Générale de Surveillance (SGS)	74
Bureau Veritas (BV)	72	Bureau Veritas (BV)	32

SA Certification Srl (SA)	28	Vietnam Certification Center (VNCE)	11
Extensive Standard Technical Services Co., Ltd. (ESTS)	19	TÜV SÜD	3
TÜV SÜD	17	The GFA Certification GmbH (GFA)	3
SAI Global Certification Services Pty Ltd (SAI)	12	Preferred by Nature Certification (PBN)	2
North Carolina Forest Service (NC)	10	Control Union Global (CU)	1
DNV Business Assurance Sweden (DNV)	9	**In total**	**126**
RINA Services S.P.A. (RINA)	3		
GCL International Ltd (GCL)	2		
KPMG LLP c/o KPMG Forest Certification Services Inc.	1		
AENOR CONFÍA S.A.U.	1		
Preferred by Nature Certification (PBN)	1		
In total	**285**		

5.1.3. Forest owners

5.1.3.1. State-owned enterprises

The Vietnam Forestry Corporation (Vinafor), under the MARD, is a state-owned enterprise that plays a crucial role in the management and development of Vietnam's forest sector. Established to oversee the sustainable use of forest resources, Vinafor focuses on reforestation, timber production, and the conservation of biodiversity. The corporation is actively involved in promoting forest certification as a means to ensure the sustainability and legality of forest products. By being FSC and the PEFC, Vinafor aims to enhance the value of its timber products in both domestic and international markets, thereby contributing to sustainable forest management and the protection of forest ecosystems in Vietnam (Vinafor, 2024).

The Vietnam Rubber Group (VRG) is a leading state-owned enterprise in Vietnam, specialized in the cultivation and production of natural rubber. With extensive rubber plantations located in provinces such as Binh Phuoc, Lam Dong, and Binh Dinh, the group plays a vital role in the country’s rubber industry. VRG is committed to sustainable practices and has obtained PEFC certification for its rubber plantations. This certification ensures that the rubber produced meets strict environmental and social standards, promoting responsible forest management and supporting the livelihoods of local communities. By adhering to these standards, VRG aims to enhance the sustainability and competitiveness of Vietnam's rubber sector in the global market (VRG, 2022). On May 19, 2020, over 11,400 hectares of rubber forests managed by three companies under the VRG were awarded the SFM Certification

according to PEFC standards for the first time. The companies receiving this certification include Binh Long Rubber company, Phu Rieng Rubber company and Dau Tieng Rubber company. This significant achievement highlights VRG's commitment to sustainable forestry practices and responsible management of natural resources, contributing to the overall sustainability of Vietnam's rubber industry (VFCO, 2020).

On April 29, 1995, the Prime Minister issued Decision No. 256/TTg establishing the Vietnam Paper Corporation (Vinapaco). As a state-owned enterprise, its business operations aim to enhance competitiveness in the domestic market. The corporation's mission is to become a leading economic group in pulp and paper production in Vietnam and the region. It seeks to contribute actively to the country's industrialization and modernization efforts, while benefiting its employees and the broader Vietnamese community. In October 2021, the Forest Certification Group of the Vinapaco received approval from GFA organization for the expansion of its certification group to include Tan Thanh Forestry Company. This expansion raised the total area certified under the FSC to 18,339.76 ha, covering 10 member companies, specifically in Figure 5. This achievement demonstrates Vinapaco's commitment to SFM and responsible forestry practices (Vinapaco, 2022).

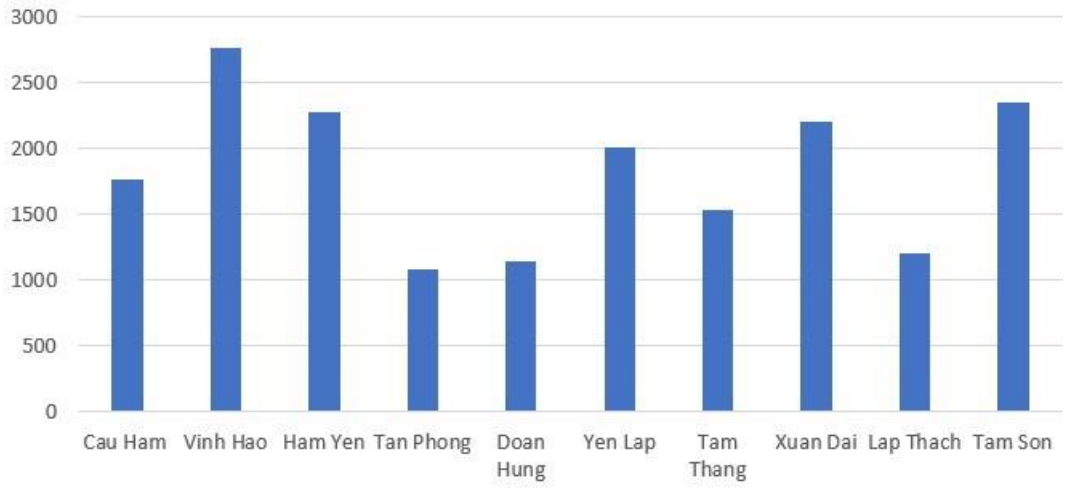

Figure 5. FSC-certified areas by member companies under Vinapaco (Unit: ha)

5.1.3.2. Private companies

According to the Vietnam Forest Owners Association, there are currently around 1,481,000 households and 10,006 village communities assigned to manage forests in Vietnam, along with 164 Special-use Forest Management Boards, 229 Protection Forest Management Boards, and 139 Forestry Companies. Most forest owners are small, scattered households or individuals. Their rights and benefits are often not respected or are difficult to exercise. Many forest owners are unable to protect their legitimate rights, lack knowledge and skills in forest management, and have yet to establish strong networks for mutual support. This provides the potential number of

stakeholders and actors that could be involved in the forest certification process (PanNature, 2024).

Yen The Forestry Two Members Company Limited is one of the few pioneering forestry companies in Vietnam that implements SFM in accordance with the FSC standards. The company has undergone five assessments (one main assessment and four annual evaluations) to obtain and maintain the FSC international forest certification from 2016 to 2021 (Figure 6). As a result, the company has seen an increase and stabilization in its revenue and profit , with a reported revenue of 29 billion VND in 2020. The income and living standards of its staff and workers have continuously improved, with an average monthly income of 9.2 million VND per person in 2020 (These figures, however, come from the company's own report and have not been audited). This success is largely attributed to leveraging the advantages of selling products from sustainably certified plantations (Yen The Company, 2021).


GFA CERTIFICATION

CERTIFICATE

This single certificate is to certify that

Yen The Forestry Two Members Company Limited

De Nam block. Phon Xuong town · Yen The District, Bac Giang Province· Vietnam

Certificate registration code	GFA-FM/COC-002909		
Date of issue	18.07.2021	Date of expiry*	17.07.2026
Issue number	2	Version	1

has been assessed by GFA Certification GmbH according to the following standards:

- FSC-National Standard (Vietnam), version FSC-STD-VN-01-2018.

The company is therefore entitled to use the FSC trademark for the below mentioned products and/or services**:

Forest management and trade of round wood

FSC www.fsc.org FSC® A000511 The mark of responsible forestry

Jörn Ackermann, Managing Director

GFA Certification GmbH • Alter Teichweg 15 • 22081 Hamburg • Germany

Telefon: + 49 40 5247431 0 • Fax: +49 40 5247431 999 • www.gfa-cert.com

Figure 6. FSC Certificate for Yen The Forestry Two Members Company Limited

Duong Hieu Trading and Mineral Exploitation Joint Stock Company has collaborated with the People's Committee of Vo Nhai District in Thai Nguyen Province to establish a representative committee for household groups. They have conducted surveys to develop maps based on land use and compile a list of eligible forest owners to participate in the FSC certification. Community meetings were held in villages to disseminate the benefits of participating in the FSC program while reviewing information about the forest owners. The company also initiated a thorough assessment of the current state of the forests, distributing and collecting application forms from various communes based on the reviewed lists. According to evaluations from consulting experts, 738 households in Vo Nhai District meet the criteria to

participate in FSC, covering a total forest area of over 2,460 hectares, primarily consisting of acacia trees (Duong Hieu JSC, 2024)

An Viet Phat Group, established in 2014, has become a leading company in Southeast Asia in the production of wood pellets. The Group comprises 8 member companies and 4 branches, and it has partnered with thousands of households to promote sustainable forest management. An Viet Phat Group is actively implementing the Sustainable Forest Management Certification according to VFCS/PEFC standards to ensure that its raw material sources are certified and comply with sustainability and legality requirements. To support capacity-building for An Viet Phat Group, the Sustainable Forest Management Certification Office organized training for the Group's technical staff on the VFCS/PEFC Sustainable Forest Management Standards. This training session was held on February 19, 2022, in Tuyen Quang Province, covering topics such as the VFCS ST 1003:2019 Sustainable Forest Management Standards, the Group VFCS/PEFC ST 1001:2019 Sustainable Forest Management Standards, and regulations on the use of VFCS and PEFC logos and trademarks/labels (VFCO, 2022).

5.1.3.3. Smallholders

According to Auer (2012), the Quang Tri case highlights the benefits of group certification for low-income farmers, offering an affordable alternative to individual certification (FSC). It demonstrates increased household income, improved technical skills, and positive environmental impacts through better practices, along with collaborative partnerships among farmers, officials, and the private sector. However, risks exist, particularly the financial sustainability of group certification without continued donor support. Strategies like expanding group membership and generating new income sources can help mitigate costs. While the Quang Tri project has environmental benefits, it primarily involves low-biodiversity plantations.

In 2015, PEFC initiated a smallholder pilot project in two provinces in Vietnam, Thua Thien Hue and Quang Tri, aimed at strengthening forest producer organizations and building the capacity of smallholders, cooperatives, and provincial cooperative alliances in central Vietnam. This initiative received twinning support from Finnish forest owner associations and PEFC International, along with financial backing from the PEFC Pilot Project. After four years of collaboration with farmers, the project is nearing the target of 2,000 to 3,000 hectares prepared for achieving PEFC group forest management certification. As a pilot initiative, it plays a crucial role in guiding smallholders toward PEFC certification in Vietnam while influencing the development of the national certification system (PEFC, 2015).

Smallholders play a crucial role in the forest certification process in Vietnam by enhancing sustainability, promoting economic development, fostering community involvement, and contributing to biodiversity conservation. The approval of the Regional FSC Forest Stewardship Standard for Smallholders in Vietnam, effective from January 1, 2023, underscores the vital role that smallholders play in the forest

certification process. By catering specifically to smallholders who manage plantations smaller than 20 hectares, this standard recognizes their significant contributions to sustainable forest management and certification efforts (FSC, 2022)

5.1.4. Local communities

Indigenous and local communities often participate in forest management and benefit from certification through community forestry initiatives.

In 2021, the project "Promoting Sustainable Partnerships between Household Forest Owners and Enterprises in Implementing Sustainable Forest Management," supported by the EU and the Netherlands-Vietnam Medical Committee (MCNV), is actively working with two communities: Chenh Venh village (Huong Phung commune, Huong Hoa district, Quang Tri province) and Ho village (Huong Son commune, Huong Hoa district, Quang Tri province) on community forest conservation. After its implementation in these areas, the project, which focuses on FSC standards, has provided sustainable livelihood solutions and increased income for the impoverished local residents. Thanks to the project by MCNV and the EU, in 2021, the community forests in Chenh Venh village and Ho village become Vietnam’s first community forests that received the FSC certificate (MCNV, 2021).

The Huong Son Nature project operates over 20,000 ha of state-owned forest managed by the Huong Son State Forest Company in Ha Tinh province, Vietnam. It is the country's first forest regeneration initiative aimed at combating climate change, biodiversity loss, and poverty through forest protection, tree planting, and the development of markets for wild forest products. The project generates positive impacts, such as capturing CO2, improving water quality and biodiversity, and creating jobs. Originating from the UN Global Environment Facility-funded Forest Certification for Ecosystem Services project, which assessed necessary changes to the FSC system from 2011 to 2017, Huong Son Nature addresses the critical issue of forest loss in Vietnam, where over 1.5 million hectares have been lost in the last 15 years due to agricultural expansion, unsustainable logging, and infrastructure development. To reverse this trend, the project seeks to redefine the value of forests by linking CO2, water, and biodiversity to companies committed to sustainability, ultimately aiming to deliver long-term, FSC-verified positive impacts (ETIFOR, 2018).

5.1.5. Non-Governmental Organizations

NGOs often facilitate the certification process, advocate for community rights, and help promote sustainable practices. Medical Committee Netherlands – Viet Nam (MCNV), an NGO working in Quang Trị province for many years, helped the villagers undergo the process of becoming certified. It started with obtaining membership of the Association of Smallholder Forest Certification Groups of Quang Tri Province (SFCG Association) and progressed to understanding the value and benefits of FSC certification. MCNV has been working with Chenh Venh and Ho villagers to develop better and more sustainable forest management practices. These include an

innovative mobile application for forest management that enables the patrol teams to upload important data about flora and fauna, in real time (MCNV, 2021).

In 2021, MCNV collaborated with local authorities to launch community-based ecotourism integrated with FSC in Chenh Venh village. The event also included the establishment of partnerships with local stakeholders to promote sustainable practices (MCNV, 2022).

Research Institute for Sustainable Forest Management and Forest Certification (SFMI) is an NGO under the Vietnam Forestry Science and Technology Association. It has been actively advising and supporting forest owners and wood processing companies in Vietnam in accessing and developing the FM and CoC certification systems for SFM. One of SFMI's key activities in its advisory and support process is organizing workshops, training sessions, and capacity-building programs aimed at enhancing awareness, skills, and experience related to sustainable forest management and forest certification for forest owners and processing enterprises in Vietnam (SFMI, 2024).

5.1.6. Academic and research institutions

They contribute by providing research, data, and analysis on forest management practices, impacts of certification, and capacity-building for stakeholders.

In 2017, the MARD tasked the Department of Forestry (formerly known as the Vietnam Administration of Forestry, VNFOREST) and the Vietnamese Academy of Forest Science (VAFS) with developing Sustainable Forest Management (FM) and Chain of Custody standards for the Vietnam Forest Certification Scheme (VFCS). The following year, the Prime Minister approved the Project on Sustainable Forest Management and Forest Certification through Decision No. 1288/QD-TTg, which established the VFCS under the Department of Forestry within MARD. On January 11, 2019, the MARD issued a decision to establish the Vietnam Forest Certification Office (VFCO), responsible for overseeing SFM and forest certification activities, as well as issuing national standards and guidelines for the VFCS (PEFC, 2024).

A notable example is the research by the Forest Science Institute of Vietnam (FSIV) in collaboration with international organizations like the Food and Agriculture Organization (FAO) in 2009. FSIV's studies assess the environmental and socioeconomic impacts of certification schemes such as FSC and PEFC in Vietnam. These assessments provide data on how certification improves forest management practices, conserves biodiversity, and enhances the livelihoods of forest-dependent communities (FSIV and FAO, 2009).

The Vietnam National University of Forestry (VNUF) has played a key role in training forest managers, government officials, and local communities in SFM practices aligned with certification standards. VNUF organizes workshops and educational programs that equip stakeholders with the necessary skills and knowledge to implement certification requirements effectively (VNUF, 2022)

The Thai Nguyen University of Agriculture and Forestry (TUAF) specializes in training forestry officers and engineers for the northern mountainous regions of Vietnam. TUAF's programs are critical for building capacity in regions where forest management plays a vital role in local livelihoods and sustainable development (TUAF, 2023).

5.1.7. FSC Greater Mekong – Vietnam

The Asia Pacific region boasts over 750 million hectares of forests, accounting for 18% of global forest cover. Southeast Asia stands out as the world's third-largest forested area, with its forests harboring countless biodiversity-rich sites. The FSC Networks in Asia-Pacific include local teams such as FSC Greater Mekong - Vietnam, FSC Greater Mekong - Thailand, FSC Malaysia, and FSC Indonesia. These local offices provide invaluable resources and support to various stakeholders in the forestry sector, helping promote SFM practices (FSC, 2024).

According to Ms. Vu Que Anh, FSC representative in Greater Mekong - Vietnam, FSC participated in the Ho Chi Minh Export Furniture Fair 2023 from February 22 to 25, marking its first engagement at this event organized by five wood associations with support from the Vietnamese government. The FSC booth attracted over 500 visitors, including buyers interested in FSC-certified products and companies seeking certification. Jayco Fung, Head of FSC Asia Pacific Business Development and the FSC Vietnam team met with FSC-certified exhibitors to discuss using certification as a marketing tool and encouraged the use of FSC trademarks. Additionally, an FSC information session on Chain of Custody (CoC) and trademark usage was held, attended by 20 participants eager to pursue responsible forestry practices. The FSC looks forward to future events in Vietnam (Vu, 2023).

5.1.8. Industrial and trade sector

In its efforts to enhance trade promotion and supply chain linkages, the Dong Nai Wood and Handicrafts Association (DOWA) organized the FSC Asia Business Encounter 2023. This event aimed to promote the supply of FSC-certified wooden furniture from Vietnam to North America, facilitating greater market access and encouraging sustainable forestry practices among manufacturers (DOWA, 2023).

Founded in 2009, the Binh Duong Furniture Association (BIFA) is a voluntary professional social organization with over 300 member companies engaged in wood processing. The association aims to increase its membership to 400 by 2025 and foster connections with foreign direct investment enterprises. In collaboration with FSC Vietnam and the Ho Chi Minh City University of Agriculture and Forestry, BIFA co-hosted the 2023 Training Workshop on Sustainable Forest Management Certification Systems, focusing on the FSC Chain of Custody (CoC) and trademark protection (BIFA, 2023).

The Bình Định Wood and Forestry Association (FPA) was established under Decision No. 3413/QĐ-UBND on September 24, 1999, by the People's Committee of

Bình Định Province. Initially comprising 28 member enterprises, the Association has now grown to over 100 members engaged in wood processing, supplying raw materials, and providing machinery and equipment for the wood processing industry. To date, the Association has three companies certified by GFA with FSC certification: Quy Nhon Forestry Planting Company (100% Japanese capital), Quy Nhon Forestry Company, and Ha Thanh Forestry Company, with a total area of 2,780.5 ha, including 2,562.9 haof planted forest and 217.6 ha of protected forest recovery (FPA, 2024).

5.2. Comparative analysis of FSC and PEFC forest management standards in Vietnam

This section of the research provides a detailed and comprehensive analysis of how FSC and PEFC forest certification schemes operate in Vietnam.

5.2.1. Scope

The FSC National Forest Stewardship Standard of Vietnam (Document reference code: FSC-STD-VN-01-2018), is applicable to all forest operations seeking FSC certification within the country. The standard encompasses natural forests, plantation forests, and Small and Low Intensity Managed Forests (SLIMFs), ensuring that a wide range of forest management practices adhere to its principles. However, it is important to note that the standard does not cover NTFPs, thereby focusing primarily on timber production and management practices relevant to certified forests (FSC, 2018). Additionally, Vietnam gained a new FSC Interim Forest Stewardship Standard for NTFPs in 2023. This standard allows organizations to certify their NTFPs, promoting responsible forestry practices that ensure social responsibility, environmental protection, and economic sustainability globally. However, the new interim standard for NTFPs in Vietnam shall not be used as a stand-alone standard. It is designed to supplement the existing FSC National Forest Stewardship Standard of Vietnam (FSC-STD-VN-01-2018) by incorporating specific indicators related to NTFPs (FSC, 2023).

The Sustainable Forest Management Standards (Document Code: VFCS/PEFC ST 1003:2019) is the PEFC-endorsed national FM standard for Vietnam. It provides voluntary requirements for forest owners to implement sustainable management practices for both natural and plantation forests seeking certification within the framework of the VFCS. Additionally, the Sustainable Forest Management Standard for Group Certification (Document Code: VFCS SD 1001:2019) outlines the certification requirements for group forest management applicable to organizations, households, individuals, groups, and communities under a group certification system as part of the VFCS.

Table 4 provides a comparative overview of FSC and PEFC FM national standards for Vietnam.

Table 4: Comparison of FSC and PEFC FM standards for Vietnam with a focus on their scopes

Issues	FSC	PEFC (VFCS)
Focus	Primarily on timber production and management practices	Broader focus on sustainable management practices, including NTFPs
Scope of forest types	Includes natural forests, plantation forests, and SLIMFs	Covers natural and plantation forests, with flexibility for diverse types
NTFPs coverage	Does not include NTFPs	Potentially includes practices related to NTFPs through voluntary requirements
Target audience	Aimed at certified operations and specific compliance requirements	Supports a wider range of forest owners, including smallholders and communities
Group certification	Does not explicitly address group certification as this is ruled by FSC international standards (FSC-STD-30-005V2-0)	Offers group certification requirements for organizations, households, individuals, groups, and communities

5.2.2. Approach

The FSC builds on a national FM standard-setting approach that ensures the local/national standards are developed starting from and consistently with framework standards and guiding documents defined at the international level. The FSC International Standard for FM (FSC-STD-01-001) is designed to be globally applicable with a set of principles and criteria, while Vietnam's National Standard for Forest Management (FSC-STD-VN-01-2018) is tailored to local conditions by adding specific indicators for each criterion. Indicators are developed by National Working Groups starting from a set of globally defined indicators (International Generic Indicators, IGIs) -as from standard FSC-STD-60-004- that need to be tailored to the local context through a process of “adopting, adapting, adding or dropping” IGIs. For example, under Criterion 1.1, which requires the organization to be a legally defined entity with clear, documented, and unchallenged legal registration, Vietnam’s standard includes two specific indicators: (1) Legal registration to carry out activities within the scope of the certificate is documented and unchallenged, and (2) Legal registration is granted by a legally competent authority according to prescribed processes. The process of “adopting, adapting, adding or dropping” IGIs leads to the development of draft national standards that need to undergo public consultation through relevant stakeholders spanning different groups and interests (environmental, social and economic) as well as field-testing before they are submitted to FSC International for a formal assessment and approval.

In contrast, the PEFC, operating through the VFCS, applies a country-specific approach that in the case of Vietnam is strongly, if not solely, driven by governmental bodies at the central state level. Instead of applying one uniform global standard like the FSC, the VFCS, as part of PEFC, has developed its own national FM standards in collaboration with local stakeholders, including forestry experts, landowners, businesses, and government bodies. This has been done according to guidelines and standards such as VFCS GD 1001:2019, which describes the scheme and its operation, and VFCS ST 1002:2019 for standard-setting procedures, VFCS ST

1003:2019 for SFM, VFCS ST 1004:2019 for group forest management, and VFCS ST 1008:2019 for logo usage rules (according to the final report of ITS Global). This ensures that the certification process is relevant to Vietnam's specific forest types, management practices, and socio-economic conditions, however, poses severe risks of inconsistency with the international framework, potentially leading to different performance level and strictness of standards across countries, despite PEFC being an international scheme offering a common brand and image. Moreover, the government-driven process implies the risk of excluding relevant private sector and civil society actors from the standard setting procedures and operations, which might finally reflect on the completeness and robustness of the standards and may lead to conflictual issues in the future.

The table 5 summarizes FSC and PEFC/VFCS approaches to national FM standard setting for Vietnam.

Table 5: Comparison of approaches of FSC and PEFC in Vietnam

Criteria	FSC	PEFC (VFCS)
Approach type	Internationally consistent and robust approach ensuring national standards are consistently developed to ensure system integrity.	National standards are independently developed and then apply for endorsement by PEFC based on consistency with PEFC FM international standards
Standard framework	FSC International Standards (FSC-STD-01-001) provide globally applicable principles and criteria.	VFCS develops national standards, such as VFCS ST 1003:2019 (Sustainable Forest Management) that are then checked for consistency with PEFC requirements
Local adaptation	Vietnam's National Standard for Forest Management (FSC-STD-VN-01-2018) tailors the global principles with specific indicators for each criterion, building on IGIs as defined by FSC standards (FSC-STD-60-004).	PEFC/VFCS allows for significant local adaptation, developing national standards through consultation with local stakeholders. However, this may lead to possible inconsistencies among national standards within the framework of the PEFC system. The national FM standard setting process for Vietnam is a top-down process driven by the central government and this may result in the exclusion (or marginal participation) of some stakeholder groups (mainly from the private sector and civil society).

5.2.3. Requirements

Table 6 shows reports the number of requirements -at different hierarchical levels- included within the FSC and PEFC national FM standards for Vietnam. From this table it is clear that FSC-STD-VN-01-2018 has a significantly higher number of principles, criteria, and indicators. While this information is not sufficient per se to draw

final conclusions about the completeness and robustness of the two standards, it may suggest that a relevant gap/difference in the number of requirements may reflect on differences in terms of detailed and comprehensive approach to FM.

Table 6: Number of requirements for FSC-STD-VN-01-2018 and VFCS ST 1003:2019

Feature	FSC-STD-VN-01-2018	VFCS ST 1003:2019
Principles	10	7
Criteria	70	34
Indicators	206	122

When deepening the assessment of the two standards, a few key similarities and differences can be reported as described below.

Principle 1 under both the FSC-STD-VN-01-2018 and VFCS ST 1003:2019 standards, focuses on legal compliance aspects associated to FM. FSC-STD-VN-01-2018 provides a more granular level of detail with specific indicators, such as requirements for assessing environmental impacts, community engagement, and intellectual property rights. Additionally, FSC-STD-VN-01-2018 has a broader scope, encompassing international trade and social issues, while VFCS ST 1003:2019 is more focused on domestic regulations and FM within Vietnam.

Principles 3 and 4 in FSC-STD-VN-01-2018 and Principle 2 in the VFCS ST 1003:2019 standards are centered around respecting the rights of local communities and indigenous peoples. Both standards emphasize the importance of recognizing and upholding the rights of these groups, particularly in relation to land use, resource management, and cultural practices. However, FSC-STD-VN-01-2018 places a stronger emphasis on the rights of indigenous peoples, particularly those with customary tenure rights. It introduces the concept of Free, Prior and Informed Consent (FPIC) as a key principle for engaging with indigenous peoples. VFCS ST 1003:2019 has a broader focus on local communities, encompassing both indigenous peoples and other community groups. It emphasizes the importance of respecting customary rights and ensuring fair benefits sharing.

Principle 2 under the FSC-STD-VN-01-2018 and Principle 3 under the VFCS ST 1003:2019 standards focus on workers' rights and employment conditions. Both standards emphasize the importance of fair labor practices, safe working conditions, and respect for workers' rights. However, FSC-STD-VN-01-2018 provides a more comprehensive set of requirements for workers' rights and employment conditions. It includes specific indicators for gender equality, occupational health and safety, and living wages. This standard is particularly strong in its focus on gender equality and its detailed requirements for promoting gender equality in the workplace. VFCS ST 1003:2019 provides a general framework for ensuring workers' rights and fair employment conditions. It emphasizes adherence to ILO principles, non-discrimination, and fair wages.

Both Principle 9 under the FSC-STD-VN-01-2018 and Principle 6 under the VFCS ST 1003:2019 standards focus on the protection and maintenance of high ecological values in forest management, but there are notable differences and complementary aspects between the two. Both standards share similar objectives, aiming to protect biodiversity, critical ecosystems, and cultural values, while emphasizing the need for assessing, planning, implementing, and monitoring conservation activities with strong community engagement. However, FSC Principle 9 delves deeper into the concept of High Conservation Value (HCV), covering six distinct categories that include biological, ecological, cultural, and social values, with specific evaluation criteria. In contrast, VFCS Principle 6 offers more general requirements, focusing on ecologically important forests, high conservation value forests and biodiversity, without the same level of detailed classification. Both standards require monitoring to ensure the effectiveness of conservation measures, but FSC provides a more rigorous framework for regular evaluation.

Principle 8 under the FSC-STD-VN-01-2018 and Principle 7 under the VFCS ST 1003:2019 both emphasize the monitoring and evaluation of forest management activities, but they differ in scope and focus. Principle 8 under FSC-STD-VN-01-2018 takes a broader approach, including the monitoring of forest management progress, environmental and social impacts, and overall forest conditions. It specifically requires the establishment of a monitoring and evaluation system, along with data collection and result analysis. On the other hand, Principle 7 under VFCS ST 1003:2019 focuses more narrowly on monitoring the progress of forest management plans, including policies, objectives, and timelines. While it also involves building a monitoring plan, collecting data, and analyzing results, its primary focus is on assessing the execution of forest management plans rather than a comprehensive evaluation of environmental and social impacts. Both principles require monitoring and evaluation, but FSC-STD-VN-01-2018 places greater emphasis on environmental and social dimensions, while VFCS ST 1003:2019 is more concerned with tracking management progress.

Principle 10 under FSC-STD-VN-01-2018 and Principle 4 under VFCS ST 1003:2019 both focus on the implementation of sustainable forestry activities, but they differ in approach and emphasis. Principle 10 of FSC-STD-VN-01-2018 provides a broader framework for conducting sustainable forestry operations. It emphasizes protecting the environment and securing social benefits through the appropriate selection and execution of forestry activities in alignment with FSC policies and objectives. In contrast, Principle 4 under VFCS ST 1003:2019 focuses more on specific forestry activities related to SFM, such as afforestation, forest care, harvesting, environmental protection, and biodiversity conservation. It outlines the management, protection, development and use of forests in a sustainable manner.

5.3. Impacts of FSC and PEFC certification on Vietnam’s forest sector

Impacts of FSC and PEFC certification on Vietnam’s forest sector as identified based on existing literature are described below, distinguishing them into

environmental, social and economic ones, and summarized in Table 7.

5.3.1. Environmental impacts

FSC certification has made a notable impact on the environmental health of forests in Vietnam. Certified forests are managed according to standards that prioritize ecological integrity, biodiversity conservation, and sustainable practices. Research indicates that FSC-certified areas have successfully reduced illegal logging activities and enhanced the preservation of natural habitats. For example, in Quang Tri and Phu Tho provinces, the introduction of FSC standards has contributed to the conservation of significant forest areas, helping maintain diverse ecosystems and promoting the sustainable use of forest resources (Huong *et al.*, 2014).

Additionally, FSC promotes stakeholder engagement in forest management, encouraging local communities to actively participate in monitoring and protecting forest resources. This participatory approach has raised awareness about the importance of sustainable forestry practices, leading to improved management of biodiversity and ecosystem services (Nambiar *et al.*, 2014).

PEFC's focus on sustainable practices in plantation forestry has resulted in improved resource efficiency and reduced environmental impacts during timber harvesting. The certification has facilitated the adoption of best management practices, although concerns remain regarding its effectiveness in maintaining complex forest ecosystems (Nông nghiệp Việt Nam, 2024). Based on the current literature, it can be reported that there is no substantial evidence yet regarding the impacts of PEFC certification in Vietnam specifically in relation to natural and semi-natural forests.

When comparing FSC and PEFC certifications, key differences emerge in their environmental impacts. FSC certification is more focused on maintaining biodiversity and ecosystem services, fostering community engagement, and addressing illegal logging, leading to stronger conservation outcomes in natural forests. In contrast, PEFC primarily targets plantation forests and emphasizes timber production, which may result in limited biodiversity benefits due to monoculture practices. However, it is important to acknowledge that these conclusions are drawn from existing literature, and there may be other aspects and perspectives not fully captured in current research. This presents a limitation as the findings may not cover the full range of environmental impacts associated with both certification systems.

5.3.2. Social impacts

The social impact of FSC certification in Vietnam is notable, particularly in terms of community engagement, economic benefits, and social equity. As already observed and reported for the environmental impacts, FSC standards emphasize the involvement of local communities in forest management, which fosters a sense of ownership and responsibility among stakeholders. This participatory approach has led to improved livelihoods for many rural communities reliant on forest resources, as it

encourages sustainable practices that enhance both economic and social conditions (Nambiar, 2021).

Moreover, FSC certification has facilitated capacity-building initiatives, providing training for local communities in sustainable forest management techniques. Such training empowers communities to manage their resources effectively, increasing their resilience against environmental and economic challenges (Keenan *et al.*, 2020). The certification also promotes equitable distribution of benefits derived from forest resources, helping to reduce socio-economic disparities and improve the overall welfare of forest-dependent populations (Dân tộc và Phát triển, 2024).

The social impact of PEFC in Vietnam, while less pronounced than that of FSC, has nonetheless contributed to local economic development. PEFC promotes sustainable forest management practices that can increase timber production and generate income for local communities involved in plantation forestry. This focus on economic viability helps improve livelihoods, particularly for those engaged in timber harvesting and related activities (Dinh *et al.*, 2017).

5.3.3. Economic impacts

The economic standards of FSC focus on ensuring that forest management contributes to the long-term economic sustainability of forest ecosystems while providing fair economic benefits to all stakeholders involved. In Vietnam, The FSC has brought new opportunities for farmers, such as increased selling prices and extended trade networks. Hoang *et al.* (2014) highlighted that FSC certification in Quang Tri province (Vietnam) has allowed smallholder forest owners to participate in global markets, particularly in Europe and North America, where demand for sustainably sourced timber is growing. As a result, certified forest owners have enjoyed price premiums of up to 14% over non-certified timber, enhancing economic viability for sustainable forest management (Tran and Huynh, 2020).

Additionally, FSC certification often requires investments in better forest management practices, which can lead to increased operational costs. However, Hoang *et al.* (2019) noted that these investments are often offset by the long-term economic gains in market access and price premiums, as well as the environmental and social co-benefits of sustainable forest management. Smallholders in Quang Tri province who work in cooperatives or through group certifications have been particularly successful in minimizing these costs, as the collective structure allows for sharing resources and certification costs.

Maraseni *et al.* (2017) suggested that an aggregation of at least 3000 hectares might be necessary to spread the fixed costs of FSC certification over a sufficient large number of growers to make it cost effective. Additionally, Maraseni *et al.* (2017) reported that net returns from both FSC-certified and non-certified timber products are positive for both actors (smallholder tree growers and a sawmilling company in Quang Tri Province) and are higher from certified timber production than non-certified timber production.

The representative from PEFC Vietnam presented the smallholder group forest certification pilot models of PEFC/VFCS in Ha Xa village, Quang Tri Province during the final webinar of the PEFC Group Certification Dialogue Webinar Series. He emphasized that the PEFC/VFCS certification for a group of Acacia forest owners has not only enabled them to generate extra revenue streams but also reduced pressure on forests through sustainable management practices (PEFC, 2022).

PEFC's standards are structured to be more flexible, and for being particularly sustainable for plantation forests and large-scale commercial operations. The system is designed to be cost-effective, which appeals to both private forest owners and large companies looking to minimize certification expenses. Bui *et al.* (2017) found that PEFC certification in Vietnam has lower upfront costs compared to FSC, making it a more attractive option for larger forest enterprises and those managing plantation forests with fewer biodiversity concerns. This cost-effectiveness has made PEFC a preferred choice for Vietnam's fast-growing plantation sector, which prioritizes timber production over environmental and social considerations.

Furthermore, PEFC's focus on streamlining certification processes allows companies to achieve certification more quickly, reducing the economic barriers to entering certified timber markets. Le and Do (2016) report that PEFC-certified companies in Vietnam benefit from reduced compliance costs and faster certification timelines, making it a more accessible option for enterprises with large-scale commercial operations.

The key economic difference between FSC and PEFC lies in the costs of certification and market access. While FSC offers greater market access and potential price premiums, it typically requires higher upfront investments in sustainable forest management practices. In contrast, PEFC is more cost-effective, but may not provide the same level of market recognition or price premiums as FSC, particularly in international markets. Hoang *et al.* (2014) observed that FSC-certified timber is generally more recognized and favored in environmentally conscious markets, while PEFC remains more suited for domestic or regional markets that prioritize cost-effectiveness over stringent sustainability criteria.

Moreover, besides timber and wood-based products, FSC standards, through a dedicated Procedure (FSC-PRO-30-002), allow for assessing and valuing FM benefits in terms of improved ecosystem services. Vietnam has been one of the pilot countries for the ForCES project and hosts one of the pioneering cases of ecosystem services assessment against FSC standards. A specific example for this is the Huong Son State Forest Company in Ha Tinh Province. This site offers various ecosystem services but faces threats such as deforestation, forest degradation, wildlife poaching, and flooding. Notably, half of the area is under formal protection, while the region is proposed for the UN-REDD+ program, indicating strong potential for private sector sponsorship of high conservation value forests. In collaboration with SNV and FSC, Huong Son aimed to establish payments for FSC-verified ecosystem services as a new revenue source for forest protection, particularly after the government imposed a moratorium on logging in natural forests. The focus was on carbon, biodiversity conservation, and watershed

services. The site achieved FSC certification, essential for verifying ecosystem services impacts, and became the first to have its carbon maintenance impact verified. Efforts continue to verify impacts related to biodiversity and watershed services, and FSC is working with SNV to find a sponsor to establish a viable business model for sustainable forest management (FSC, 2017).

Table 7: Key impacts of FSC and PEFC certification in Vietnam

Impact	FSC Standards	PEFC Standards
Environmental Impacts	Prioritizes ecological integrity, biodiversity conservation, and sustainable practices; successfully reduces illegal logging and enhances habitat preservation (e.g., Quang Tri, Phu Tho)	Focuses on sustainable practices in plantation forestry, improving resource efficiency; limited biodiversity benefits due to monoculture practices; no substantial evidence yet on impacts in natural forests in Vietnam
Social Impacts	Encourages community engagement and ownership in forest management; improves livelihoods and promotes equitable benefit distribution; facilitates capacity-building initiatives for sustainable practices	Contributes to local economic development through increased timber production; less pronounced community engagement compared to FSC, primarily focusing on economic viability for plantation forestry
Economic Impacts	Provides market access and price premiums (up to 14% higher than non-certified); requires higher upfront investments, often offset by long-term economic gains; collective structures for smallholders help minimize costs	Offers lower upfront costs and more flexibility, appealing to larger forest enterprises; faster certification processes reduce economic barriers but may lack the same level of market recognition as FSC

Chapter 6: Discussion

This chapter delves into the further implications of the findings from the comparative assessment of FSC and PEFC forest management standards in Vietnam. Additionally, the chapter identifies challenges and barriers encountered in the implementation of FSC and PEFC standards, suggests possible improvements and offers directions for further research.

6.1. Implications for sustainable forest management in Vietnam

Several implications of our findings for SFM in Vietnam can be identified: they are briefly discussed within this sub-section.

6.1.1. Contributions to the 2021-2030 National Forestry Development Planning goals

Under Decision 895/QD-TTg, the Vietnamese Prime Minister approved the National Forestry Development Planning for 2021-2030, with a vision to 2050. The plan aims to promote sustainability in the forestry sector. Vietnam seeks to improve the forestry sector's economic contribution through the sustainable use and management of forest resources. To achieve this, the plan encourages broad social participation to ensure balanced contributions from diverse stakeholders. Stakeholder engagement and participation, as well as attention paid to local communities and smallholders reprensent key aspects of forest certification.

The findings (see in 5.3) suggest that both FSC and PEFC certification schemes may contribute meaningfully to Vietnam's objectives outlined in the 2021-2030 National Forestry Development Planning.

6.1.2. Market access

To enforce VPA, the Vietnamese government has issued Decree No. 102/2020/ND-CP which sets forth regulations to verify the legality of Vietnamese timber and timber products.

Both FSC and PEFC certification schemes emphasize the legal compliance of timber sourcing which is in line with the objectives of the VPA/FLEGT and aligned with the aims of EUTR and EUDR regulations. Furthermore, they might contribute to compliance with similar regulations being developed around the World, such as the United States' Forest Act and the United Kingdom's Environment Act. With the implementation of the VPA/FLEGT agreement, FSC and PEFC certifications can support providing the necessary assurances to EU importers of timber products that the products have been sourced from sustainable and legal sources, consequently enhancing (or, at least, conserving) market access and potentially resulting in higher prices. Additionally, certified products are often viewed favorably in international markets. As the EU seeks to source only legally harvested timber, and although certified products are not automatically awarded a green lane for the EUTR and the

EUDR, the certification of Vietnamese products with FSC or PEFC will further increase the competitiveness of these products against similar but non-certified ones.

The natural forest closing policy of the Vietnamese government helps increase the value of Vietnam's NTFPs exports (quality, standards, market access, sustainability) which are closely linked to the principles and practices of forest certification. Thus, forest certification can play an important role in supporting the trade of NTFPs from Vietnam (Nguyen *et al.*, 2020).

6.1.3. Role in climate change mitigation

Both FSC and PEFC certifications play crucial roles in Vietnam's climate change mitigation strategies due to their strict principles promoting SFM.

Principle 6 of the FSC National Forest Stewardship Standard of Vietnam (FSC-STD-VN-01-2018) plays an important role in combating climate change since it helps conserve and rehabilitate the ecological functions of the forests. By mandating that forest management organizations maintain, conserve, and restore ecosystem services and environmental values, this principle may help increase carbon sequestration and storage and enhance ecosystem resilience.

Principles 5 and 6 of Vietnam's SFM standards (VFCS ST 1003:2019) are interconnected and both contribute significantly to climate change mitigation. Principle 5: "Environmental Management and Protection mainly focus on the aspects of soil and water conservation and chemical management". May reduce climate change by maintaining the carbon sinks. Principle 6: "Maintenance, Conservation, and Enhancement of Biodiversity" stresses how healthy and diverse forests act as carbon sinks. Biodiversity protection enhances ecosystem resilience to climate change and provides habitats for endangered species.

6.2. Challenges and barriers to forest certification in Vietnam

The journey toward achieving forest certification in Vietnam through schemes like FSC and PEFC presents several challenges and barriers.

One of the most significant challenges faced by the certification process in Vietnam is the limited local capacity and resources, particularly among smallholders. Although examples and good practices about the successful implementation of forest certification by Vietnamese smallholders are reported (see also 5.3) some studies highlighted issues faced. For example, Cochard *et al.* (2023) found that forest certification systems such as FSC and PEFC might be challenging for smallholders in Thừa Thiên Huế Province, Central Vietnam because of their complexity and associated costs. Thus, many smallholders may miss out on the market advantages and premium prices associated with certified products. Additionally, smallholders are often expected to provide "ecosystem services," a concept that few of them may fully understand what "ecosystem services" are or their role in supporting them (Nambiar, 2021).

In order to make forest certification economically viable, it may be necessary to have a minimum group size of 3000 ha. Additionally, the price difference between the certified and non-certified logs in recent years is narrowing and this may discourage farmers from attaining certification (Maraseni *et al.*, 2007).

According to Pham *et al.* (2023), there are gender gaps in participation in forest certification, resource accessibility, decision-making power and knowledge in A Luoi district, Thua Thien Hue province, Vietnam, with men dominating meetings and training programs and their names predominantly listed in forest land certificates while women's views are often overlooked.

Stakeholder interactions and conflicts are very complicated and therefore may represent major impediments to forest certification in Vietnam. According to Laocai Radio and Television (2023), there are nearly 30 families in Ban Rang village with more than 12 hectares of land identified as overlapping with the area of Bao Yen Forestry One Member Limited Liability Company. Such unclear land tenure rights may often cause confusion and disputes among stakeholders, leading to difficulties in the forest certification procedure. Additionally, differing interests among stakeholders may lead to tensions and conflicts that might affect the forest certification process. For instance, according to Công An Nhân Dân Online (2022), following a series of illegal logging and land encroachment for agricultural production on forest land allocated by the state to the community of Village 4, Loc Phu Commune, Bao Lam District, by the end of 2020, the People's Committee of Lam Dong Province had no choice but to withdraw up to 231 ha of forest and transfer it to the Dam Bri Protective Forest Management Board.

6.3. Limitations and suggestions for future research

Within this section the may limitations of the research are reported together with possible future research developments.

6.3.1. Limitations of the research

One of the primary limitations of this research is the use of only secondary data. Since the research was developed as desk research and did not involve any interaction with stakeholders, either through interviews, questionnaires or site visits, the first-hand empirical data is missing. This limits the ability to fully understand the practical challenges and local viewpoints of forest owners, managers and other key actors involved in the certification processes in Vietnam. It also limits the capacity to counter-check and deepen information and facts found within available documents.

Additionally, while a variety of documents, reports, and certification standards were reviewed, academic articles on PEFC in Vietnam are scarce and difficult to obtain and gaining full access to comprehensive internal reports from organizations like FSC/PEFC-certified companies in Vietnam was a major hurdle. This may have led to gaps in understanding some aspects of certification, for instance, cost-benefit analyses or compliance difficulties.

Furthermore, the relatively short duration of the research has restricted access to a broader range of materials. As a result, the findings may not fully capture the evolving trends, policies, or long-term outcomes of forest certification in Vietnam.

Finally, the risk of bias during the analysis of secondary data is always present, as reports and articles from different sources may cater to particular stakeholders (NGOs, government bodies, or certification organizations). This could give a distortion of the advantages and disadvantages of FSC and PEFC as practiced in Vietnam.

6.3.2. Suggestions for future research

Further research should include field studies, for instance, surveying forest managers and local and governmental communities, to investigate further the effects of FSC and PEFC certification in Vietnam.

Future research may also investigate more in-depth case studies of certain areas or forest types in Vietnam to explore how FSC and PEFC standards have been implemented in various contexts.

Most studies focus on plantation forests, leaving a gap in understanding how PEFC certification affects the conservation and biodiversity outcomes in Vietnam's natural forest ecosystems. This highlights the need for further research to assess the broader environmental impacts of PEFC certification in these forest types.

Chapter 7: Conclusions

This research analyzed key actors, certification standards, and the observed social, environmental, and economic impacts of forest certification in Vietnam, and allows drawing several conclusions regarding the contribution of forest certification to SFM in Vietnam.

The certification process for forests in Vietnam is a collaborative effort involving multiple stakeholders. Government agencies play a crucial role in managing, facilitating, and implementing policies related to SFM and certification standards. Certification bodies are responsible for evaluating and issuing certifications for forest areas according to FSC and PEFC standards. Forest owners include state-owned enterprises, private companies, and households that engage in SFM practices to achieve certification. Local Communities participate in forest management and benefit from certification through community forestry initiatives. NGOs support the certification process, advocate for community rights, and promote sustainable practices. Academic and research institutions provide research, data, and analysis on forest management practices, the impacts of certification, and capacity building for stakeholders. In the case of Vietnam, they are directly involved in the development and operationalization of the two schemes. FSC Greater Mekong - Vietnam offers support and resources to stakeholders in the forestry sector. Industry and trade sectors promote the supply of certified products and encourage businesses to adopt sustainable forestry practices.

The FSC National Forest Stewardship Standard of Vietnam (FSC-STD-VN-01-2018) applies to all forest operations seeking FSC certification in the country, covering natural forests, plantation forests and SLIMFs. However, it primarily focuses on timber production and does not address NTFPs. In 2023, Vietnam introduced a new FSC Interim Forest Stewardship Standard for NTFPs, allowing organizations to certify their NTFPs while supplementing the existing FSC standard with specific indicators related to NTFPs. Conversely, the Sustainable Forest Management Standards (VFCS/PEFC ST 1003:2019) endorsed by PEFC offer voluntary requirements for SFM practices applicable to both natural and plantation forests. Additionally, the Sustainable Forest Management Standard for Group Certification (VFCS SD 1001:2019) specifies certification requirements for various forest management entities under a group certification system. Nevertheless, so far PEFC certification has basically been limited to forest plantations.

The FSC develops Vietnam's National Forest Management Standard (FSC-STD-VN-01-2018) by adapting global standards (FSC-STD-01-001) with local indicators tailored through public consultation and stakeholder involvement. In contrast, the PEFC, via the VFCS, follows a government-driven approach to create national FM standards (VFCS ST 1003:2019) with input from local stakeholders but still a strong top-down approach driven by a centralized process.

FSC-STD-VN-01-2018 includes 10 principles, 70 criteria, and 206 indicators, indicating a more extensive and detailed approach to sustainable forest management.

This suggests a focus on comprehensive management practices that address various aspects of forestry. In contrast, VFCS ST 1003:2019 has 7 principles, 34 criteria, and 122 indicators, which may limit its depth and scope. This difference may imply that some critical aspects of forest management are not adequately covered.

The impacts of FSC and PEFC certification on Vietnam's forest sector are significant across environmental, social, and economic dimensions. FSC certification prioritizes ecological integrity and biodiversity, leading to reduced illegal logging and enhanced habitat preservation, particularly in Quang Tri and Phu Tho provinces. It promotes community engagement in forest management, improving livelihoods and reducing socio-economic disparities through capacity-building initiatives. In contrast, PEFC focuses on sustainable practices in plantation forestry, improving resource efficiency but raising concerns about biodiversity impacts due to monoculture practices and limited evidence of effects on natural forests. Economically, FSC opens new market opportunities, allowing certified forest owners to enjoy price premiums, although it requires higher upfront investments. Conversely, PEFC offers lower costs and faster certification processes, appealing to larger enterprises in the plantation sector, but may lack the same market recognition. Overall, while FSC provides greater access and potential benefits in sustainable markets, PEFC is designed for cost-effectiveness and accessibility, making it suitable for Vietnam's growing plantation forestry, however raising concerns about its capacity to ultimately contribute to SFM in a broad sense.

There are major implications of forest certification for SFM in Vietnam. Within the scope of the National Forestry Development Planning 2021-2030, FSC and PEFC forest certification schemes help further the sustainable approach and increase the economic potential of forestry. These certification schemes may enable smallholders to generate extra revenue while adopting sustainable management practices that reduce pressure on forests. Additionally, FSC and PEFC certifications may help ensure the legality of timber sourcing, enhancing market access for Vietnamese timber products in the EU and improving competitiveness against non-certified products. Both certification schemes can contribute to climate change mitigation targets as they promote management practices that conserve and restore forest ecosystems, maintain carbon sinks, and protect biodiversity, which are essential for increasing resilience to climate change.

Nonetheless barriers to forest certification in Vietnam remain significant. The lack of skills and resources to undertake large efforts needed to meet certification requirements, especially among smallholders, hinders certification as it is a very expensive and cumbersome process. Smallholders are therefore unable to exploit benefits that may derive from forest certification, such as access to the market. Furthermore, gender inequality is a barrier where male monopoly of roles in decision making makes women's views insignificant. Land tenure and conflicts between stakeholders also affect certification negatively as encroachment and logging activities are issues.

In conclusion, it is evident that forest certification enhances the country's efforts in SFM. Despite significant differences highlighted by the research, both FSC and PEFC offer normative frameworks that endorse environmental, social and economic goals. Together, these certification schemes provide complementary pathways for achieving Vietnam's SFM goals and addressing global challenges such as climate change. The further development of forest certification in Vietnam will be important for ensuring the future sustainability of the country's forest resources, contributing to both national development and international sustainability objectives.

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