



## **Developing the Forest Carbon Credit Market in Vietnam: Current Situation and Policy Recommendations**

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### **Abstract**

*For decades, carbon markets have been seen as an important tool of the solution to climate change. This study evaluates the legal and policy framework of Vietnam's carbon credit market in general and forest one in particular and its practical development issues in the country; moreover, it sheds light on the pilot implementation of the forest carbon credit market in practice at the local level, identifying main challenges for and difficulties in upcoming market development. Based on current circumstances and the policy agenda of the market development, the paper provides policy recommendations to overcome the aforementioned challenges and promote the development of the Vietnam's carbon credit market in the next decade.*

**Keywords:** Credit carbon, Credit carbon market, Forest carbon, Vietnam.

## Introduction

Climate change, a consequence of high - carbon emissions, has caused numerous serious impacts on global ecosystems and socio-economic systems. One of the measures for countries to effectively reduce emissions is to establish and promote carbon credit trading activities. At the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26), Vietnam made strong commitments along with nearly 150 countries to reach "net-zero" emissions by the mid-century and joined 140 countries in the Glasgow Leaders' Declaration on forests and land use.

The carbon credit market is considered an effective tool to reduce greenhouse gas emissions, contributing to Vietnam's commitments as it enters the phase of implementing the mandatory requirements of the Paris Agreement on climate change. In 2023, Vietnam successfully sold 10.3 million forest carbon credits from six provinces in the North Central region through the World Bank, for USD5/ton, generating USD51.5 million (approximately over VND 1,200 billion).

To date, there are multiple studies on carbon credit market in the world in general and in Vietnam in particular. However, studies on forest carbon credit market are much fewer. Among earliest studies on this area, Vi Thuy Linh *et al.* (2013) studied the carbon market within and outside the framework of the Kyoto Protocol, market limitations, main mechanisms of the voluntary carbon market as well as prospects for participation in the carbon market for the Vietnamese forestry sector. The study emphasized that the preparation of complete policies and the full system of greenhouse gas inventory and measurement methods are prerequisites for the forestry sector to succeed in the carbon market.

A recent representative study of Pham Thu Thuy *et al.* (2022) made an attempt to identify forest carbon potential, review relevant policies, and explore opportunities and challenges for Vietnam to develop and operate a forest carbon market. The study also provides policy recommendations for Vietnam and other stakeholders on developing effective, efficient and equitable forest carbon policies and projects.

For practical issues of forest carbon credit, Forest Carbon Partnership Facility (2020), Project "*Supporting readiness preparation for REDD+ phase 2 in Vietnam*" (FCPF-2) focused on overarching outcome of the project, especially improved governance and transparency for sustainable forest resource management (including REDD+ interventions) within participant countries.

This study evaluates key legal and policy framework of Vietnam's carbon credit market and its practical development issues in the country; moreover, it sheds light on the pilot implementation of the forest carbon credit market in practice at the local level, identifying main challenges for and difficulties in upcoming market development, and provides main policy solutions.

The paper is structured into four sections. The first section introduces briefly some conceptual issues of carbon credit market. The following section analyzes the formation and development process of Vietnam's carbon credit market in recent years. The subsequent section discusses main drawbacks and limitations in the development of Vietnam's carbon credit market. The last section concludes the paper and provides key policy implications for Vietnam.

### **1. Some conceptual issues of carbon credit market**

There are multiple definitions of carbon credit. In this study, a carbon credit is understood as a credit for greenhouse gas emissions reduced or removed from the atmosphere, created by an emissions reduction project, that can be used by governments, industries or individuals to offset emissions they create elsewhere. One carbon credit is equivalent to one tonne of CO<sub>2</sub>, or gas equivalent, and is bought and sold through international brokers, online retailers and trading platforms.

In Vietnam, according to Clause 35, Article 1, Law on Environmental Protection No. 72/2020/QH14 of 2020, Carbon Credit is a tradable certificate and represents the right to emit one ton of carbon dioxide (CO<sub>2</sub>) or one ton of carbon dioxide (CO<sub>2</sub>) equivalent.

Carbon market is a market, through which countries can buy or sell units of GHG emissions in an effort to meet national limits on emissions, under the Kyoto Protocol or under other agreements (OECD, 2013).

Carbon markets aim to reduce greenhouse gas (or CO<sub>2</sub>) emissions efficiently by setting limits on emissions and allowing trading of emission credits, which are instruments that represent emissions reductions (UNDP, 2016). Trading allows companies/countries that can reduce emissions at low costs to sell excess credits to emitters that pay higher costs, thereby reducing the economic cost of reducing emissions as low as possible. The end result of this process is to establish a price for each unit of carbon emissions in the market (carbon pricing) and provide price signals for businesses to make decisions to reduce carbon emissions in the most economically optimal way. The commodities traded on the carbon market are greenhouse gases, mainly CO<sub>2</sub>, so the market is characterized by its "invisible" nature. CO<sub>2</sub> is the most common greenhouse gas and is therefore often the first greenhouse gas selected for inclusion in the ETS, while other GHGs such as CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFC, PFC, etc. are also often included in the ETS and converted to equivalent CO<sub>2</sub> units. Some sectors such as electricity, aviation, steel, etc. have GHG emissions that are easier to measure than others and are therefore more feasible to include in the ETS (ICAP, 2017).

### **2. Formation and development process of Vietnam's carbon credit market**

Vietnam has actively prepared legal documents to develop the domestic carbon credit market in the context of fast-growing global development of carbon credit markets. On November 17, 2020, the National Assembly issued Law on Environmental Protection No. 72/2020/QH14, Article 139 of which set up an initial basis for the establishment and development of the carbon credit market. This was Vietnam's first legal basis for setting total emission limits, determining allocation methods, and carbon credit offset mechanisms.

On January 7, 2022, the Government issued Decree No. 06/2022/NĐ-CP on reducing greenhouse gas emissions and protecting the ozone layer. According to the Decree, by the end of 2027, Vietnam aims to: (i) Establish regulations for managing carbon credits, the trading of emission limits, and carbon credits; establish operational rules for the carbon credit exchange; (ii) Pilot the mechanism of exchanging and offsetting carbon credits in potential sectors and provide guidance on implementing the exchange and offset mechanisms for carbon credits within the country and in accordance with the provisions of domestic laws and international agreements of Vietnam; (iii) Establish and operate a pilot carbon credit exchange from 2025; and (iv) Implement activities to enhance capacity and raise awareness of carbon credit market development. By 2028, the official operation of the carbon credit exchange will be established, and regulations will be enacted for connecting and trading carbon credits domestically with regional and global carbon credit markets.

On January 18, 2022, the Prime Minister issued Decision No. 01/2022/QĐ-TTg, establishing a list of sectors and facilities required to conduct greenhouse gas (GHG) inventory. According to the Decision, six sectors are required to conduct GHG inventory, namely: energy, transportation, construction, industrial processes, agriculture, forestry, and land use. A total of 1,912 facilities will participate in the domestic carbon market in the future. On November 15, 2022, the Ministry of Natural Resources and Environment issued Circular No. 17/2022/TT-BTNMT, on technical measurement, reporting, and appraisal of GHG emissions reduction and GHG inventory in waste management. With the commitment to achieving the target of "Net Zero" emissions by 2050, the Vietnamese government is scheduled to begin conducting GHG inventories in 2023 to raise awareness among businesses about the global environment and meet the requirements of importing countries. In 2023, nearly 2,000 businesses in Vietnam participated in the "Net zero" pathway.

According to Official Letter No. 648/VPCP-NN dated January 26, 2022, from the Government Office, the Ministry of Finance and the Ministry of Natural Resources and Environment are responsible for developing a domestic carbon market establishment project. The Ministry of Finance has submitted Document No. 222/TTr-BTC to the Prime Minister to approve the Carbon Market Development Project in Vietnam. After the project is approved and based on legal regulations, the Ministry of Finance will continue to study and propose issuing financial regulations and policies to effectively operate the market.

At the COP 26/CMP 16/CMA 3 Conference (Glasgow, United Kingdom) at the end of 2021, Prime Minister Pham Minh Chinh committed that "Vietnam will develop and implement strong measures to reduce GHG emissions using its own resources, along with financial support and technology transfer from the international community, especially developed countries, including implementing mechanisms under the Paris Agreement to achieve net-zero emissions by 2050. In the Nationally Determined Contributions (NDC) Technical Report, updated in September 2022, Vietnam aims to reduce its total greenhouse gas emissions by 43.5% by 2030 with international support, an increase of 16.5% compared to the 2020 NDC. The reduction will mainly focus on the energy sector, agriculture, forestry and land use, waste, and industrial processes (Government of Vietnam, 2020; 2022).

Despite the absence of an official domestic market, Vietnam is actively formulating a legal framework to implement the future carbon credit market. Several provinces in the country have implemented pilot projects for forest carbon credit trading to generate revenue from sustainable forest management, use, and development. In 2021, Quang Nam province became the first locality in Vietnam to approve the pilot project for forest carbon credit trading as a measure to reduce GHG emissions through forest conservation and restoration, sustainable forest resource management, and Reducing Emissions from Deforestation and Forest Degradation (REDD+). The pilot project is scheduled to last for five years (2021-2025). With a forest area of 680,000 hectares, covering 58.6%, including 466,113 hectares of natural forests, Quang Nam has the potential to absorb over 11.2 million tons of carbon dioxide between 2018 and 2030. Based on a price of USD 5 per carbon credit, Quang Nam earns approximately USD5-10 million annually from forest carbon credit sales. The pilot project aims to increase the natural forest area by 20% in the next 10 years, achieving a forest coverage of 61% by 2025, restoring and enriching the forests with approximately 7 million cubic meters of timber and reducing approximately 14 million tons of CO<sub>2</sub> emissions from the forests by 2030.

In 2023, the Department of Agriculture and Rural Development in Gia Lai province implemented the pilot project for forest carbon credit trading<sup>1</sup>. Gia Lai has the largest forest area in Tay Nguyen, which is a region located in the South Central part of Vietnam, and ranks fifth nationwide, with approximately 723,000 hectares of forest. The forest carbon stock in Gia Lai is very high, reaching over 150 tons/hectare, totaling around 50 million tons.

In June 2023, the People's Committee of Son La province established a task force to develop and implement a pilot project for forest carbon credit trading. The project aims to protect natural forests, enhance the resilience of upstream forests, establish new protective forests and special-use forests to increase carbon absorption capacity, generate stable financial resources for forest protection and development, increase community participation in forest protection, management, and development, and contribute actively to GHG emissions reduction. In phase 1 (2023-2025), the pilot project will be implemented on an area of 2,000 hectares. In phase 2 (2026-2030), it will expand to 10,000-50,000 hectares, and in phase 3 (from 2030 onwards), it will cover the entire natural forest area of the province.

In October 2023, the Department of Agriculture and Rural Development of Kon Tum province and EcoTree Joint Stock Company (based in Ho Chi Minh City) held a meeting to discuss the proposal for a pilot project for carbon credit trading in Kon Tum province. If the project is implemented, it will bring significant benefits to the province. With the existing 600,000 hectares of forests in Kon Tum, it has the potential to generate around 3,000 billion VND annually. In the initial phase, EcoTree Joint Stock Company will pilot the project on 100,000 - 150,000 hectares of protective and special-use forests (forest enrichment). In these special-use and enriched forests, the carbon absorption rate is estimated at 25-30 carbon credits/hectare/year, with each credit equivalent to one ton of CO<sub>2</sub>, and EcoTree Joint Stock Company will purchase the credits at a price of 10 Euro/credit.

Vietnam has also actively and proactively participated in international carbon credit market via signing international legal documents and stipulating relevant regulation.

In 1992, 196 countries agreed to sign the United Nations Framework Convention on Climate Change (UNFCCC) to demonstrate efforts to combat climate change and reduce global GHG emissions. In 1997, UNFCCC member countries adopted the Kyoto Protocol, allowing countries listed in Annex B of the Protocol to implement or trade emission reductions through three mechanisms: CDM under Article 12, Joint implementation (JI) under Article 6, and international emissions trading under Article 16. On December 3, 1998, Vietnam signed the Kyoto Protocol and ratified it on September 25, 2002. However, Vietnam, not being listed in Annex I of the Protocol, is not obligated to commit to quantified emission reductions during the Protocol's effective period.

- *Clean development mechanism (CDM)*

In the early 2000s, Vietnam engaged in the exchange of carbon credits abroad through the CDM. Starting from 2005, the government issued several legal documents to establish the legal framework for CDM projects in Vietnam. On October 17, 2005, the Prime Minister issued Directive No. 35/2005/CT-TTG regarding the organization of implementing the Kyoto Protocol under the UNFCCC, requiring relevant ministries to forecast the market for trading "Certified Emission Reductions (CERs)" and provide guidance for authorized agencies, organizations, and enterprises to develop CDM projects in Vietnam. On August 2, 2007, the Prime Minister issued Decision No. 130/2007/QĐ-TTg on certain mechanisms and financial policies for CDM investment projects. As of December 5, 2022, a total of 258 CDM projects and approximately 30,763,808 carbon credits have been issued from CDM projects in Vietnam (UNFCCC, 2022).

Until now, Vietnam has only one successful registered reforestation project in Cao Phong district, which is located in Hoa Binh province, under the CDM. The estimated emission reductions for the project are 2,665 CERs/year during the 2009-2025 credit period. Although it has been successfully registered, no carbon credits have been issued for this project yet (Duong Van Huy, 2022).

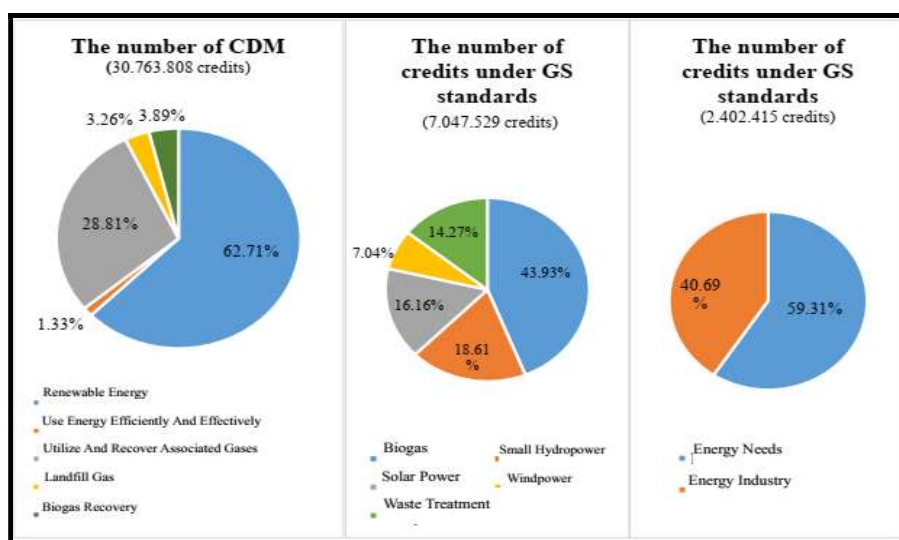
- *Carbon credit projects under independent international standards*

In addition to CDM, Vietnam has also developed carbon credit projects under independent international standards. As of November 2022, Vietnam had 20 projects registered under the Gold Standard (GS) and 27 projects registered under the Verified Carbon Standard (VCS), with the number of issued carbon credits being 7,047,529 and 2,402,415, respectively (Berkeley Public Policy, 2022). The GS projects included 2 Biogas projects (3,096,068 credits), 12 small Hydropower projects (1,311,359 credits), 3 Solar projects (1,138,796 credits), 2 Wind projects (495,847 credits), and 1 Waste Treatment project (1,005,459 credits). The VCS projects included 6 Energy Efficiency projects (1,424,816 credits) and 21 Industrial Energy projects (977,599 credits).

• *REDD+ Project*

In 2008, Vietnam officially became a member of the Forest Carbon Partnership Facility (FCPF), a global partnership of governments, businesses, civil society organizations, and indigenous organizations with a focus on reducing emissions from deforestation and forest degradation, conserving forest carbon stocks, sustainable forest management, and enhancing forest carbon stocks in developing countries. FCPF supports the implementation of REDD+ in Vietnam through two phases. Phase 1 from 2008-2012 focused on establishing the legal framework for REDD+ in Vietnam, enhancing capacities in laws and regulations that directly or indirectly impact REDD+ (IDLO, 2011). The project "Support For REDD+ Readiness Preparation Phase 2 in Vietnam" (FCPF-2), funded by FCPF with a non-refundable grant of 5 million US dollars through the WB, continued readiness preparation activities for REDD+ in six provinces in the North Central Region (Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri, and Thua Thien Hue) from November 2016 to December 2019. The Ministry of Agriculture and Rural Development was the project's host institution, and the Forest Projects Management Board was the project owner (FCPF, 2020).

**Figure 1: The quantity of CDM credits (up to December 2022) and the quantity of credits according to GS and VCS standards (up to November 2022) in Vietnam**



Source: UNFCCC, 2022; Berkeley Public Policy (2022).

The Ministry of Agriculture and Rural Development developed the North Central Region Emission Reduction Plan and included it in the results-based payment list. On February 1, 2018, the Carbon Fund Council approved the plan in Resolution CFM/17/2018/2. On October 22, 2020, the Ministry of Agriculture and Rural Development, as the implementing agency of the Program, and the International Bank for Reconstruction and Development (IBRD) (a member of the World Bank Group) as the Trustee of FCPF, signed the Emission Reductions Payment Agreement (ERPA) for the North Central Region,

which was held in Hanoi. The ERPA aims to transfer the emission reduction of 10.3 million tons of CO<sub>2</sub> equivalent in the North Central Region from 2018 to 2024 to FCPF, with a total value of USD 51.5 million (at a price of 5 USD/credit). On December 28, 2022, the Government issued Decree No. 107/2022/NĐ-CP on the pilot transfer of emission reduction results and the financial management of GHG emission reduction agreements in the North Central Region.

In 2023, for the first time in the forestry sector, Vietnam successfully sold 10.3 million forest carbon credits (10.3 million tons of CO<sub>2</sub>) through the WB at a price of 5 USD/ton, earning USD 51.5 million (around VND 1,200 billion) (Ministry of Agriculture and Rural Development, 2023). This activity is part of the ERPA for the North Central Region. Currently, IBRD has disbursed the first installment of USD 41.2 million (equivalent to VND 997 billion) to the Ministry of Agriculture and Rural Development, achieving 80% of the emission reduction results according to the signed ERPA. The remaining amount of USD 10.3 million (equivalent to VND 249 billion) will be paid upon the completion of the transfer of 10.3 million tons of CO<sub>2</sub>. With the received funds, the Vietnam Forest Protection and Development Fund will disburse the entire amount to the provinces to plan payments for forest owners. Among the six provinces, Nghe An province received the highest disbursement with over 282 billion VND, followed by Quang Binh with over VND 235 billion, Thanh Hoa with 162 billion VND, Ha Tinh with 122 billion VND, Thua Thien Hue with VND 107 billion, and Quang Tri with over 51 billion VND.

In addition to the sold credits, the WB has confirmed the emission reduction results for the entire North Central Region for phase 1 (January 1, 2018, to December 31, 2019), reaching 16.21 million tons of CO<sub>2</sub> (equivalent to 16.21 million credits). Of this amount, 10.3 million tons of CO<sub>2</sub> were transferred under the signed ERPA. With the remaining 5.91 million tons of CO<sub>2</sub>, the WB intends to purchase an additional 1 million tons of CO<sub>2</sub>. With the remaining 4.91 million tons of CO<sub>2</sub>, the Ministry of Agriculture and Rural Development is seeking the Government's approval to develop a plan for carbon credit exchange, transfer, and trading to provide additional resources for forest protection and development in the North Central Region. The implementation of the ERPA serves as a foundation for Vietnam to learn from experience in participating in emission reduction payment services, carbon credit trading, and generating additional financial resources for direct investment in forests and increasing income for forest owners.

In addition to the success of the ERPA, in Vietnam, several agreements on carbon credit exchange and trading are being developed and implemented. Generally, the expected selling price for each credit typically ranges around 5 USD/ton of CO<sub>2</sub>, which is a price that can bring good profits for localities.

**Table 1: Forest carbon credit trading projects in Vietnam**

<b>Program name</b>	<b>Emission reduction payment phase</b>	<b>Implementation location</b>	<b>Payment activities</b>	<b>Expected selling price</b>
Emission Reduction Payment Agreement	2018-2025	The six provinces in the North Central Region: Nghe An, Thanh Hoa, Ha Tinh, Quang Binh, Quang Tri, and Thua Thien Hue.	The REDD+ activities include both emissions reduction and carbon absorption from deforestation and forest degradation	5 USD/Ton CO2 emission
Letter of intent with the Forest Finance Enhancement Organization Emergent (a delegated agency of the REDD+ Results-Based Payments through Enhanced Financial Support for Forests, LEAF)	2022-2026	11 provinces of South Central Region and Central Highland	REDD+ activities	10USD/Ton CO2 emission
Feasibility study for constructing the GPT Project in the forestry sector of the North Central and Northern Mountainous regions of Vietnam (SK Forest)	In the future, according to the project implementation timeline	The estimated 15 northern provinces include: Lao Cai, Yen Bai, Phu Tho, Tuyen Quang, Ha Giang, Vinh Phuc, Bac Kan, Thai Nguyen, Cao Bang, Lang Son, Bac Giang, Quang Ninh, Son La, Dien Bien, and Lai Chau.	The activities of emissions reduction from deforestation and forest degradation (REDD+) include both emissions reduction and carbon sequestration.	Not determined
The proposed project, "Reducing Emissions in the Central Highlands and South Central Region in Vietnam to contribute to the implementation of the National REDD+ Action Program (RECAF)," is funded by the Green climate fund.	2022-2027	In the four provinces: Dak Lak, Dak Nong, Lam Dong (the Central Highland) and Ninh Thuan (South Central region).	Payment for REDD+ implementation results	5USD/Ton CO2 emission
"Emission reduction payment" project led by Japan International Cooperation Agency (JICA).	2023-2028	The projected provinces include the Northern Mountainous provinces and the South Central provinces	Payment for REDD+ implementation results	5USD/Ton CO2 emission

Source: VNFF (2022), Vu Tan Phuong (2022), Pham Thu Thuy *et al.* (2022).

### **3. Main drawbacks and limitations in the development of Vietnam's carbon credit market**

Establishing a national-level greenhouse gas emissions monitoring, reporting, and verification (MRV) system is one of the tasks of the "Project on managing greenhouse gas emissions and trading carbon credits in the global market" approved by the Prime Minister under Decision No. 1775 dated November 21, 2012. In accordance with Prime Minister's Decision No. 2053/QĐ-TTg issued on October 28, 2016, implementing the Paris Agreement on climate change, one of the mandatory tasks is to establish an MRV system for mitigation activities at the national level, aiming to achieve GHG reduction targets in the NDC. Moreover, the MRV system is also regulated in Decree No. 06/2022/ND-CP, which stipulates the reduction of GHG emissions and the protection of the ozone layer, issued on January 7, 2022. However, there is currently no comprehensive legal document specifying the inventory system for GHG, the monitoring system for GHG emissions, and the monitoring system at various levels (national, sectoral, sub-sectoral, and production facility) transparently and accurately according to international standards. The roadmap for GHG emissions reduction for each sector and sub-sector is not clear, and there is a lack of legal guidance to ensure compliance and flexibility in accordance with the requirements of different markets.

Currently, relevant authorities have been developing the right to transfer emission reduction outcomes for the North Central Region ERPA project; however, this is only a standalone program. Vietnam has not yet established rules regarding carbon rights and a general framework for transferring rights for all national projects. Organizations and individuals engaged in carbon credit trading in the global market may face legal difficulties as the government has not provided specific regulations on forest carbon rights. Therefore, accurately determining the rights, responsibilities, and appropriate benefit sharing is crucial to motivate localities, organizations, and forest growers to care for and expand forest coverage, as well as to be willing to generate credits and engage in transactions in the market.

### **4. Conclusions and policy implications for Vietnam**

As Vietnam's carbon credit market is still at early stage of development, it is necessary to carry out the following policy measures in a synchronous manner:

Firstly, enhancing public awareness of the carbon credit market. As mentioned early, the capacity, knowledge, and awareness of forest growers regarding the carbon credit market are still limited. It is noteworthy that it is not easy to raise awareness among the people, especially those in forests owned by ethnic minority communities, who have long been accustomed to forest clearing for cultivation or short-term forest planting for quick income. Therefore, the provincial authorities need to develop a communication plan and coordinate with local authorities to raise awareness among the people about the benefits of forest carbon credits, in addition to traditional income sources from timber, animal wildlife, and other

forest products. Furthermore, participating in the carbon credit market is an effective method to protect the environment and ensure sustainable social well-being. This will help enhance the people's awareness and commitment to forest protection and fire prevention. With higher potential income than regular income sources, forest growers will be motivated to preserve forests and aim for stable livelihoods through forestry.

Enhancing public awareness of the carbon credit market is imperative for the sustainable development in forest areas in the country. One effective way to communicate with forest owners is through forums, conferences, workshops, and training sessions. The provincial authorities should actively collaborate with forestry agencies, forestry business associations, and organizations to organize counseling sessions and disseminate knowledge to the people about the mechanisms and potential benefits of participating in the market. Information about the carbon credit market can be integrated into discussions on forestry development policies. Additionally, providing information through the press, social media, and government websites can further reach the people.

Secondly, supporting people in sustainable forest management and development. To generate carbon credits from long-standing forests, households face numerous challenges and pressure from trading carbon credits versus short-term timber exploitation, forest clearing for land use, agriculture, livestock grazing, mineral extraction, and hydropower plant construction. Currently, forest environmental service payments are low and do not secure livelihood for communities, especially heavy dependents on forests. To enable forest owners to participate in carbon credit sales, support is needed to improve the quality of their forests. As analyzed above, forests with higher age and quality yield better carbon stocks. Therefore, the provincial authorities need to effectively implement training courses and provide financial support to forest owners who plant large-scale timbers following Forest Stewardship Council (FSC) certificate and to enhance market access for certified timber, and develop market linkages between timber production, processing businesses, and the wood industry.

The biggest difficulty currently faced by the people, especially in economically disadvantaged regions, is the lack of investment capital for forest planting. Therefore, the provincial authorities should continue to issue favorable credit policies and regulations to facilitate convenient conditions for organizations, households, and individuals to access investment loans. Additionally, livelihood support should be provided to the people until the forests are ready for harvest to ensure their peace of mind. The local government agencies can guide the people to implement the "short-term income for long-term livelihood" approach and diversify "livelihoods under the forest canopy" through activities such as agroforestry models, ecotourism development, etc. During the timber harvesting phase, provincial authorities should support forest owners in enhancing market access for FSC-certified timber and developing market linkages between timber production, processing businesses, and the wood industry.

Enhancing awareness through propaganda; facilitating land transfer, land leasing, and granting land use rights for planned production forests not yet allocated to people for large-scale timber planting; enhancing sustainable forest management capacity and issuing forest certification; organizing production linked to consumption. Training sessions, forums, and workshops should be conducted for the people to improve their knowledge and skills in sustainable forest farming, large-scale timber planting processes, and towards the goal of increasing forest planting area and FSC certification area. Furthermore, functional agencies need to strengthen legal enforcement to effectively address violations in the forestry sector, enhance coordination among law enforcement agencies, promote community self-governance, and improve professional capacity in monitoring and handling forestry law violations.

Thirdly, encouraging communities and businesses to actively participate in the market. In the forestry sector, the establishment and development of the forest carbon market in have recently generated significant additional revenue for forest protection and development, as well as reduction of GHG emissions. To actively participate in the carbon credit market, the provincial authorities should encourage businesses, especially those with high carbon emissions, to innovate their production technologies, aim to minimize emissions, and strive to avoid the mandatory purchase of carbon credits from the government. Additionally, businesses or forest owners should proactively research and invest in solutions to generate carbon credits, be ready to engage in transactions, and seek profits.

The current challenge for businesses and residents is the lack of a specific national MRV system. Therefore, it is difficult for forest owners to calculate and evaluate their current volume of emissions, the amount of carbon that can be stored, and convert it into credits. However, the provincial authorities can encourage stakeholders to hire third-party units to assist in GHG emission inventories, calculate the number of forest carbon credits, and provide advice on suitable carbon projects. Reports on measurement, inventory, and assessment by businesses and forest owners will help local authorities gain an overall picture of GHG emissions sources, the current status, and the potential for emission reduction and GHG absorption in the area. Based on this information, the provinces can make informed investment decisions and issue policies to promote the development of appropriate carbon credit markets in Vietnam.

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### Notes

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<sup>1</sup>In April 2023, the department, in collaboration with the People and Nature Center (PanNature), organized a workshop on “Conservation and Forest Restoration in Gia Lai Province to Promote Forest Carbon Credit Trading in Vietnam” to gather expert opinions and improve the project.