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POLICIES AND LAWS ON CLIMATE CHANGE ADAPTATION AND ENVIRONMENTAL RISKS OF CENTRAL BANKS: FROM AWARENESS TO ACTION AND PRACTICE IN VIETNAM

POLÍTICAS E LEIS SOBRE ADAPTAÇÃO ÀS MUDANÇAS CLIMÁTICAS E RISCOS AMBIENTAIS DOS BANCOS CENTRAIS: DA CONSCIENTIZAÇÃO À AÇÃO E PRÁTICA NO VIETNÃ

VO THI MY HUONG
PhD Student at the University of Economics and Law, Vietnam National University Ho Chi Minh City (VNU-HCM), Vietnam. Email: huongvtm@uel.edu.vn ORCID: https://orcid.org/0000-0003-1943-6827

VIEN THE GIANG
Ho Chi Minh University of Banking, Vietnam. Corresponding author: E-mail: giangvt@hub.edu.vn ORCID: https://orcid.org/0000-0001-9218-473X

ABSTRACT

The study aims to explore the relationship between climate change, environmental risks, and the monetary policy of central banks because responding to climate change and environmental risks is an urgent issue, especially in the current period, as these environmental challenges have increasingly serious impacts. This study employed a qualitative approach based on secondary data sources, which are findings published domestically and internationally as well as relevant legal documents. The methods used in this work include: i) Analyzing the written law method; ii) General methods of social science; and iii) Comparative method. The study identifies the development of awareness and addressing climate change and environmental risks of the central banks. In the past, addressing climate change and environmental risks was primarily the responsibility of state regulatory agencies on natural resources and environment. These agencies often took actions independently or encouraged businesses to reduce greenhouse gas emissions, which were the main contributors to climate change. Currently, it has been demonstrated that monetary policy and environmental policy have a close relationship because both affect the achievement of macroeconomic objectives. Central banks have paid more attention to environmental issues and climate change. Central banks have transitioned from passive participants to an indispensable part in adapting to and addressing climate-related issues and environmental risks. Countries are seeking a legal framework to integrate climate change and environmental risks into monetary policy and practices, and Vietnam is no exception.

Keywords: Climate change; Monetary policy; Central bank; Law and policy; Vietnam

RESUMO

O estudo visa explorar a relação entre as mudanças climáticas, os riscos ambientais e a política monetária dos bancos centrais, porque responder às mudanças climáticas e aos riscos ambientais é uma questão urgente, especialmente no período atual, pois esses

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desafios ambientais têm impactos cada vez mais sérios. Este estudo empregou uma abordagem qualitativa com base em fontes de dados secundárias, que são descobertas publicadas nacional e internacionalmente, bem como documentos legais relevantes. Os métodos usados neste trabalho incluem: i) Análise do método da lei escrita; ii) Métodos gerais de ciências sociais; e iii) Método comparativo. O estudo identifica o desenvolvimento da conscientização e o enfrentamento das mudanças climáticas e dos riscos ambientais dos bancos centrais. No passado, o enfrentamento das mudanças climáticas e dos riscos ambientais era principalmente responsabilidade das agências reguladoras estaduais de recursos naturais e meio ambiente. Essas agências frequentemente tomavam medidas de forma independente ou incentivavam as empresas a reduzir as emissões de gases de efeito estufa, que eram os principais contribuintes para as mudanças climáticas. Atualmente, foi demonstrado que a política monetária e a política ambiental têm uma relação estreita porque ambas afetam a consecução dos objetivos macroeconômicos. Os bancos centrais têm prestado mais atenção às questões ambientais e às mudanças climáticas. Os bancos centrais passaram de participantes passivos a uma parte indispensável na adaptação e no enfrentamento de questões relacionadas ao clima e riscos ambientais. Os países estão buscando uma estrutura legal para integrar as mudanças climáticas e os riscos ambientais à política e às práticas monetárias, e o Vietnã não é exceção.

Palavras-chave: Mudança climática; Política monetária; Banco central; Lei e política; Vietname

1. INTRODUCTION

Climate change and environmental risks pose challenges to central banks in their efforts to stabilize the value of money and the financial system, which are the core objectives of monetary policy. Climate change and climate-related risks are considered a new type of financial risk that directly affects business results (of business entities in the economy), the capital circulation within the economy, and the safety and soundness of financial institutions, which is reflected in the ability to recover lent capital and the risk of capital loss. This is viewed as a convincing reason to encourage central banks to concentrate more on financial stability and sustainable growth (Dikau, S., Volz, U., 2018; Campiglio, E., Dafermos, Y., Monnin, P. *et al.,* 2018: 462–468) in establishing and operating national monetary policies, which is expressed through the regulation and guidance of credit capital into environmentally friendly and low-risk business investment projects. The effectiveness of central banks in addressing climate change-related issues and environmental risks depends on their organizational structure, the level of independence of monetary policy from fiscal policy, and the management of the relationship between growth objectives and the stabilization of currency value and maintaining financial system stability, including the regulation of

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unstable financial activities to green finance (Raberto, M., Ozel, B., Ponta, L. *et al.,* 2019: 429-465).

Countries develop strategies associated with the historical conditions of economic and social development and the impacts of climate change and environmental risks. Accordingly, the policy and legal framework for dealing with climate change and environmental risks must be specified in the development strategy of central banks and the Law of the Central Bank. Specifically, the legal content related to combating climate change and environmental degradation must be integrated into the central bank's functional mandate. With an established legal basis, the central bank's decisions directly affect the goals of sustainable economic development, climate change adaption, and mitigation of negative impacts on the ecological environment. As a result, there will be an increase in credit capital for environmentally friendly business investment projects.

Vietnam, significantly impacted by climate change and experiencing serious environmental degradation, is actively implementing strategies to address climate change because this is an irreversible development direction. Vietnam stated that *"the State plays the role of creator and leader; people and businesses are central participants with the effective participation of socio-political organizations"* (Prime Minister, 2022) in carrying out the national strategy on climate change. However, the tasks and authority of the State Bank of Vietnam in the National Strategy on Climate Change for the period up to 2050 remain undefined, despite its legal status as a ministerial-level agency of the Government and the central bank. Meanwhile, the Strategy for Development of the Vietnam Banking Industry to 2025, with a vision to 2030, issued together with Decision No. 986/QD-TTg dated August 8, 2018, of the Prime Minister of Vietnam, identified the monetary and banking systems as the lifeline of the economy, highlighting their important role in the overall Vietnam financial system. The State Bank of Vietnam is undergoing modernization to ensure a solid legal status and accountability; working towards the primary goal of controlling inflation, contributing to stabilizing the macroeconomy, and promoting sustainable growth. In the meantime, it serves as a focal point in enhancing financial stability and this function should be supplemented in the Law on the State Bank. Given the above orientations, it can be affirmed that the State Bank of Vietnam plays a vital role in the strategy for sustainable development and stability of the financial system in Vietnam. From an international perspective, climate change and environmental risks are new types of

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financial risks that have disrupted the circulation of financial resources and threatened financial stability. Therefore, it is essential to consider and assess the law on the financial stabilization function of the State Bank of Vietnam in relation to the implementation of the Climate Change Strategy. The assessment will help suggest measures to combat environmental challenges through monetary policy tools as well as the functions of the State Bank of Vietnam.

2. RESEARCH METHOD

This study employed a qualitative approach based on secondary data sources, which are findings published domestically and internationally as well as relevant legal documents. From the collected data sources, this research used the following main research methods:

- The method of analyzing written law (Nguyen, N.D., 2020) was used to analyze and evaluate Vietnamese legal regulations related to climate change and environmental risks and operations of the State Bank of Vietnam.

- General social science methods, including analytical and synthetic methods, were used flexibly and throughout this research to clarify the scientific arguments presented (Anol Bhattacherjee, 2012).

- The comparative method aimed to clarify the similarities, differences, approaches, and solutions adopted by central banks in fighting against climate change and environmental risks.

3. RESULTS AND DISCUSSION

3.1. Development of awareness and addressing climate change and environmental risks

Climate change and environmental risks have posed serious risks to socio-economic activities, making them a global threat. Therefore, countries must address not only the consequences but also potential risks. The effects include “loss of land and property, health and ecological damages, threats to human security, and potential human casualties” (Voigt, C., 2008: 1-22) that are more widespread with many unpredictable risks. Identifying the risks caused by climate change is crucial for us to

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seek appropriate solutions. According to Olovsson, C. (2018: 1-8), climate change risks are categorized into two types: physical risks and adaptation risks. Physical risks describe the losses caused by extreme weather events (such as droughts, floods, storms, and heat waves), rising sea levels, and changes in ecosystems. Adaptation risks describe economic risks and financial losses that arise from the sudden transition from a fossil fuel-based economy to a less fossil fuel-based economy, that is, the shift from a green economy to a brown economy. Mark, S., and Georgia, G. (2024) presented that another climate change risk is liability risk, which applies to entities that contribute or fail to adapt to climate change. Although the consequences of climate change and environmental risks happen on a larger scale and their effects are increasingly exacerbated, adaptation to climate change and environmental risks is not always supported by countries, especially in international forums. The development of awareness and response to climate change and environmental risks can be outlined as follows:

First, seek consensus

Initially, the impacts of climate change and environmental risks were not clear on a global scale since they occurred individually in a specific scope. However, when their frequency is increasing, countries focus on discovering the causes of climate change and environmental risks, especially those linked to the economic industry. Therefore, coping with environmental risks and climate change adaptation always poses a dilemma because the objectives of economic growth and ecological environment protection often conflict. Furthermore, as climate change and environmental risks do not affect specific geographical areas, addressing these challenges requires the involvement of both states and international cooperation. Active participation from international organizations is also crucial since the legal framework for environmental protection and international conventions aimed at mitigating climate change impacts (Chowdhury, A., & Hossain, M.B., 2021: 14-28). Any disagreement among countries, especially those with large emissions from economic activities, can hinder efforts to address climate change and environmental risks. Seeking consensus and unification on the issues is a major and global issue that requires the participation and responsibilities of all countries and territories. This is expressed in international conventions on combating climate change. Sustainable development is considered a success and consensus among countries is increasingly evident. In addition, both fiscal policy and climate change have an impact on

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macroeconomic objectives; therefore, it is possible to find a connection between monetary policy and climate policy based on the nature of macroeconomics. (McKibbin, WJ, Morris, A.C., Wilcoxen, P.J., & Panton, A.J., 2020: 579-603). This is regarded as a compelling reason for central banks to seek consensus in developing monetary policy to deal with climate change-related issues.

Second, find ways to adapt to climate change in each industry and field

Moreover, finding suitable solutions to climate change adaption and environmental risks in each industry and field needs more attention. For instance, based on the analysis of the current development of many large urban centers located along the coast or in low-lying areas around the mouths of large rivers, Gasper, R., Blohm, A., and Ruth, M. (2011: 150-157) argued that the urban development causes economic activities and people to suffer climate-related hazards, including rising sea levels and floods due to heavy rainfall. This becomes a major challenge for the stability of people's lives. For the energy industry, climate change and environmental risks also present two major challenges: providing safe and cheap energy sources to meet the growing demand and responding to climate change. To deal with these challenges simultaneously, it is a must to find a unified solution between countries based on the international legal system (Farah, P.D, & Rossi, P., 2011).

Third, raise social awareness and promote the role of indigenous knowledge in climate change adaptation.

The consequences of environmental pollution from production and consumption activities are a significant concern in many countries because it directly and adversely affects the quality of life and human health (Nguyen, V. H. A., & Ho, T. T., 2023: 2-14). Ensuring environmental security is a precondition for sustainable economic development, in which the transition to a green economy and green growth is inevitable. Quantitative research findings indicated that economic growth, which contributes to environmental pollution, motivates the countries in the ASEAN-10 bloc to prioritize environmental issues in economic development while seeking appropriate adaptation solutions (Pham, V. T., & Bui, T. A.,2022: 5-23).

Apart from ecological environment studies, it is essential to demonstrate the effects of climate change on people's awareness and action to adapt to climate change and environmental risks. In fact, the threats of climate change to people's lives have not received sufficient attention in scientific and public discussions. This oversight has led to an imbalance in research on individual adaptation to climate change, which

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mainly depends on social perception. From the results of an online survey of 342 adults in the United States, Helm, S.V., Pollitt, A., Barnett, M.A., Curran, M.A., & Craig, Z.R., 2018: 158-167) revealed that ecological stress is linked with depressive symptoms and both positive and negative pro-environmental behaviors. From the survey results, the authors recommend that public policies on climate change adaptation should consider not only natural aspects but also social aspects such as the motivations and attitudes of those affected by climate change. In other words, the social aspects are necessary to understand potential delays in adaptation, which can adversely impact mental health on a large scale. Similarly, two extensive surveys conducted in Australia by Bradley, G.L, and Reser, J.P., 2017: 29-51) indicated that individual psychological adaptation processes are associated with understanding and acceptance of the real threats of climate change. Through environmental experiences and behaviors, individuals can develop eco-friendly lifestyles. By enhancing green identity as well as psychological adaptation (Bradley, G.L, Babutsidze, Z., Chai, A., & Reser, J.P., 2020) to pro-environmental behaviors, there will be a decrease in harmful behaviors to the environment. Moreover, the number of litigation cases related to climate change and environmental risks witnessed a noticeable increase and took place at both national and international levels. Arguments for assigning legal responsibility to subjects related to climate change based on environmental rights are established under the public trust doctrine and human rights are recognized in the constitution, including the right to life and the right to a quality environment (Solana, J., 2020: 344-372; Preston, B.J., 2018: 131-164). This increase in legal cases reflects a growing public awareness and demand for environmental rights, despite variations among countries.

3.2. Participate in addressing climate change and environmental risks in the operations of central banks

3.2.1. The process of awareness of climate change and environmental risks of central banks

How climate change and environmental risks have an impact on socio-economic life and what central banks are responsible for addressing these issues are being raised as the negative consequences of climate change and extreme weather events become more obvious. In terms of history, although climate change has been a public

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policy issue for decades, central banks recently started to consider it relevant to their objectives (DiLeo, M., 2023: 671–688). The effects of climate change on central bank operations are presented in both monetary policy and financial stability. These impacts are gradually changing the perception and choice of how central banks deal with climate change and environmental risks through monetary policy and financial stability. This is fundamental to the political system to easily implement sustainable and prudential policies in the long term to benefit climate and other important social challenges (Olovsson, C. 2018: 1-8). In this way, it can prevent financial risks related to climate change. Although climate-related financial risks have been recognized by central banks and supervisors as important factors in stabilizing finance, the policy framework only avoids short-term market disruptions without addressing long-term climate risks that could become the cause of disasters. In order to cope with them more thoroughly and effectively, Chenet, H., Ryan-Collins, J., & Van Lerven, F., (2021) argued that the approach to addressing climate-related financial risks should be based on the "precautionary principle" and modern macroprudential policy.

The current major discussions regarding climate change, environmental risks, and the role of central banks emphasize how to integrate climate and sustainability issues into monetary policy and shape the "catalyst and leading" role of central banks in addressing climate-related financial risks (Gonzalez, C.I., 2021). Assessing central bank engagement in combating climate change gradually affirms the positive and indispensable role of central banks in promoting the "green" economy through their functions, Arseneau, David M., Alejandro Drexler, and Mitsuhiro Osada (2022) presented that the role of the central bank in improving green economic development and climate change adaptation is expressed through the calculation and consideration of environmental risk levels, including climate change risks, the short-term and long-term stability and development of the financial sector and the macroeconomy. Consequently, the central bank will promote credit capital into investment and business through monetary policy tools.

Central banks also gradually transform in accordance with green criteria such as issuing new electronic money besides physical money of central banks (Massimo, F. M., Arnaud, M., & Livio, S., 2022: 54-68). It can be seen that the transition to a green central bank is demonstrated from the organization to the implementation of its functions (Sayuri, S., 2023). Nevertheless, the effects of climate change and environmental risks on the organizational model and functions of central banks have

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been ignored because the debate on green prudential regulation is often overlooked when it comes to the governance structure of central banks. Therefore, the decision to implement green regulations of central banks is not only relevant to the functions and tasks but also the independence of central banks and the interaction between monetary policy and prudential policy (D'Orazio, P., & Popoyan, L., 2020). Based on the combination of monetary and climate policies provides central banks with detailed information to get involved in climate change issues that Chen, C., Pan, D., Huang, Z., and Bleischwitz, R. (2021) call “climate-enhanced” monetary policy. According to Thiemann, M., Büttner, T., and Kessler, O. (2023: 14-34), central banks are more aware of their roles in climate change. The perception of central bank governors on climate change has also changed significantly. Central bank governors acknowledged that central banks shape and create the policy and legal framework to harmoniously combine the functions of central banks and address climate change-related issues, not just serving as a 'mirror' or a market force.

Empirical evidence illustrated that extreme weather events such as droughts or floods affect the Euro area business cycle and the right to a healthy environment (Kılıç, A. O., 2022: 569-593). As a result, climate risks need to be evaluated not only as part of the European Central Bank's macroeconomic and monetary analysis but also as part of its portfolio and risk management (Bremus, F., Dany-Knedlik, G., & Schlaak, T., 2020: 206-213). Given the uncertain nature of issues related to climate change and environmental risks, it was affirmed that central banks play a new role in coordinating the necessary policies to combat climate change in order to fulfill their financial stability tasks (Svartzman, R., Bolton, P., Despres, M., Pereira Da Silva, L.A., & Samama, F., 2021: 563–580). Hinselmann, J.H. (2023) emphasized the role of central banks in supporting best practices for the Greening the Financial System Network to avoid “unjustified regulatory disregard” for “common human concerns” consistently through a “building block” for a polycentric regime for global climate protection. However, there is still much debate in defining the content, role, and requirements for central bank participation in the issue of climate change and environmental risks at the national and international levels, at least in terms of each country's "contribution" to climate change and environmental risks. Therefore, encouraging central bank participation in addressing this issue is unlikely to create absolute consensus.

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3.2.2. Practical implementation of climate change adaptation and environmental risks in the operations of central banks

Although reaching an absolute consensus on adaptation to climate change and environmental risks in the operations of central banks is challenging and depends on the central bank's views on climate change, environmental risks, and primary development policies of each country, we can see practical signs of adapting to climate change and environmental risks in the operations of central banks as follows:

First, central banks pay more attention to seeking methods to implement in practice from organizational models to the integration of climate change content into the content of monetary policy

According to Ha, T.T.D, Nguyen, M.S (2023: 48-53.58), 63% of central banks believed that climate change is a significant concern and 45% agreed that mitigating its consequences should be a monetary policy objective. When combating climate change, several major central banks recognized that climate change poses a threat to price stability and financial system stability - two traditional goals of central banks. Central banks and financial supervisors also acknowledged that climate change can threaten financial stability and general price levels. They also committed to addressing climate change, and biodiversity loss and, supporting the transition to a low-carbon economy. Moreover, climate change has a remarkable impact on the financial stability of the financial banking system and it is identified as a potential risk that needs to be thoroughly addressed. The analysis by Dikau, S., Volz, U. (2021) illustrated that of the 135 central banks, only 12% have explicit sustainability mandates while 40% are mandated to support the government’s policy priorities, which mostly include sustainability goals. Central banks must incorporate climate-related physical and transition risks into their policy frameworks to safeguard macro-financial stability.

According to the research results of the economies of Brazil, China, the EU, India, and the United States from 2004 to 2020, Amit, R. (2024) argued that central banks can achieve the dual goals of maintaining price stability and sustainability by effectively controlling emissions. This measure forms the foundation of green monetary policy in combating climate change through selective credit control. It was proved that the method to address climate change and environmental risks in relation to financial risks has changed in a positive way. Obviously, central banks started using proactive

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policy interventions with the aim of reducing financial flows to projects that lead to crossing dangerous ecological tipping points, causing ecological imbalance (Kedward, K., Ryan-Collins, J., & Chenet, H., 2023: 763-781). This can be seen as a fundamental change in the perception of central banks when assessing the negative and unexpected effects of climate change and environmental risks to future price stability. Therefore, the response measures adopted by central banks are now aimed at mitigating climate change, supporting green finance, and the transition to sustainable growth (Boneva, L., Ferrucci, G., & Mongelli, FP, 2021). It can be affirmed that despite the different content of monetary policies among countries, central banks have to solve emerging problems, including sustainable development goals. They strive to incorporate climate change adaptation and environmental risks in the construction and implementation of national monetary policies regardless of their organizational model.

Second, the role of central banks in the overall strategy for adaptation to climate change and environmental risks is increasingly evident, but central banks have different perspectives in their approaches to addressing climate change and environmental risks

Siderius, K. (2023: 1588-1608) stated that, with the radical and profound change of central banks towards climate change and environmental risks, central banks became an “unexpected” climate activist because they have taken on work outside their main areas of expertise. In a comparison of the different climate change engagements of the Bank of England (BoE), the European Central Bank (ECB), and the Federal Reserve (Fed), Blondeel, M., Van Doorslaer, H., & Vermeiren, M. (2024) argued that greening monetary policy serves as a strategy for these central banks to protect their reputation or maintain technical credibility in the face of a growing cross-national consensus on the financial stability risks of climate change, as exemplified by the Fed.

From the experience, the UK central banks said that climate change policies not only help minimize climate-related risks but also positively promote credit capital for greener businesses (DiLeo, M., 2023: 671–688). In its 2021 strategic review, the European Central Bank's Governing Council agreed to prioritize climate change in its operation in the coming years (Deyris, J., 2023: 713–730). Therefore, central banks must identify and address climate-related risks as a new financial risk (Bolton, P., et al., 2020) in an era of increasingly serious climate challenges. When working on climate initiatives, central banks must comply with their mandates while avoiding

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unexpected challenges (Francesca, D., Barbara, A., Matthias, K., & Jan, C. M., 2021) due to the unpredictability of climate change and natural disasters (Hansen, L. P., 2022: 1-15). Developing appropriate response scenarios may be difficult; therefore, central banks must incorporate the physical risks of climate change into their policy frameworks to safeguard macro-financial stability, as climate risks can directly impact the traditional core responsibilities (Dikau, S., & Volz, U., 2021).

Third**,** the increasing attention and strong action by central banks on climate change is a positive signal in achieving green growth and sustainable development goals

Unlike other public institutions, only central banks possess enormous institutional resources (Siderius, K., 2023: 1588-1608), and have the right to intervene in economic and social affairs through monetary policy tools. Their decisions have a powerful impact on the macro economy, such as stabilizing the value of money, controlling inflation, stabilizing the macroeconomy, and dealing with economic crises. Although the boundaries between state interventions through central banks in markets remain debated and need to be demonstrated, especially in the context of the return of the “big state” ideology (Coombs, N., & Thiemann, M., 2022: 535-558), central bank responses to climate change and environmental risks can direct credit capital into environmentally friendly investment projects, thereby promoting green production and green consumption. This represents a huge advantage for central banks in their potential contributions to a climate-neutral economy. When conducting monetary policy, central banks need to be more concerned with the use of monetary policy tools to minimize environmental and social risks from production and business activities. The alignment of monetary policy objectives with green growth and sustainable development objectives highlights the central bank's role and participation in green credit development, and more broadly, in facilitating the "transition to a climate-neutral economy" (McConnell, A., Yanovski, B., & Lessmann, K., 2022: 339–355). Nevertheless, the results of green transformation significantly depend on the characteristics of central banks (Spyromitros, E., 2023). Therefore, emphasizing the role of central banks in the green transformation process is to identify effective measures to combat climate change and environmental risks. This approach also helps overcome the shortcomings in the institutional analysis of the green transition process at the national level, in which central banks should be more concerned and assessed in terms of their ability and the necessity of implementing the green transition (Bailey,

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D., & Jackson, J., 2023: 1–21). Even when central banks do not pay special attention to the impact of climate change on the transmission mechanism of monetary policy, they can cope with it from protective actions to more proactive measures to mitigate climate change by supporting green finance and the transition to a low-carbon economy (Boneva, L., Ferrucci, G., & Mongelli, F. P., 2022: 770–787).

Fourth, it is essential to establish a policy and legal framework as a basis for central banks to incorporate climate change and the goals of sustainable development into their traditional functions. This ensures the active participation of central banks. As illustrated in Korea, before the National Assembly passed the Framework Act on Low Carbon Green Growth, climate change was not viewed as a key to future development (Jang, M., Kim, J. A., & Sun, S. T., 2010: 191–206). Green deals, green growth, and green economy are regarded as important for achieving the Sustainable Development Goals showing a strong commitment to transition to green growth and prioritizing green quality in economic activities. They are also effective ways for countries to develop sustainably (Adamowicz, M., (2022). Despite the efforts to address climate change, debates or legal opinions on the reconciliation of price stability with environmental and climate change issues – a function that is not the forte of central banks – have been limited in legal regulation. An example of this case is the European Climate Law, which forces the EU to achieve climate neutrality by 2050 (Stilinović, A. V., 2023: 643–671).

3.3. Addressing climate change and environmental risks of the Central Bank of Vietnam

As a developing country, Vietnam faces the challenge of reconciling economic growth environmental protection, and climate change adaptation at the national level as well as at each region (Nguyen, N.K, 2012). When assessing the impacts of climate change and environmental risks in Vietnam, the World Bank (2020: 16) noted that "*Vietnam is one of nine countries with at least 50 million people threatened by rising sea levels, stronger storms and other risks. The effects of climate change on Vietnam are both chronic and extreme. Chronic damages include saltwater intrusion in low-lying areas, such as the Mekong Delta, affecting crops and groundwater. Rising temperatures are also a contributor to the increasing frequency of forest fires".* In addition to factors such as geographical location, economic development model, and population density (Yen, N.T.H., & Dung, N.P., 2021: 222-254), resources-based

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development and the pursuit of growth goals significantly contribute to climate change and environmental risks in Vietnam. The reshaped perspective of climate change has a tremendous impact on the adaptive capacity of ethnic minority farmers in mountainous areas of Thua Thien Hue province, Vietnam (Sen, L.T.H., Bond, J., Phuong, L.T.H., Winkel, A., Tran, U.C., & Le, N.V., 2021: 239-251). Besides adaptive capacity, indigenous knowledge is the traditional agricultural practices of the Xo Dang ethnic group in Central Vietnam that are employed to combat climate change. The Xo Dang is highly aware of climate change risks and has applied their current adaptation measures, including the use of flora and fauna indicators, indigenous crop varieties, adjusted crop calendars, irrigation practices, and intercropping techniques (Van Huynh, C., et al. 2020). In other words, responding to climate change is not only the responsibility of the state but also of the national community. For the community, indigenous knowledge serves as a powerful tool to address climate change (Vietnam Association for Conservation of Nature and Environment, 2019).

In Vietnam, the State Bank serves as a state management agency for currency and banking activities and fulfills the functions of the central bank. In terms of structure, because the State Bank of Vietnam is a ministerial-level agency of the Government, it operates under the control of both the Law on Organization of the Government (as a member of the Government) and the Law on the State Bank of Vietnam. With this organizational structure, it is obvious that the State Bank is not independent (Vien, T.G., 2018:16-27). The Government has the authority to directly intervene in its operations, so the State Bank struggles to pursue the ultimate goal of stabilizing prices, controlling inflation (Vien, T.G., 2023:59-74), and maintaining financial stability, including the handling of weak commercial banks (Vien, T.G., Vo, T.M.H. 2022: 1239–1251). Therefore, it is crucial to reform the State Bank with proper legal status and accountability; gradually increase independence and accountability for the goals of monetary policy management, inflation control in alignment with the socio-economic development orientation in each period, supporting macroeconomic stability, promoting the goal of sustainable economic growth. This is both a general objective and a specific one in the Development Strategy of the Vietnamese Banking Industry for 2025, with a vision to 2030, issued together with Decision No. 986/QD-TTg dated August 8, 2018, of the Prime Minister. However, the strategy does not clearly outline the requirements, attention, and participation of the State Bank of Vietnam in addressing it. It is only responsible for promoting the sustainable development of the

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economy. To effectively combat climate change and mitigate environmental risk in Vietnam, it is vital to "*boost the efficiency of credit capital allocation to meet the requirements of socio-economic development; promote "green credit" and "green banking" to facilitate the transition to green growth, low-carbon emissions, and climate change adaptation; increase the proportion of bank credit capital invested in renewable energy, clean energy, low-carbon production and consumption sectors. Integrate sustainable development, climate change, and green growth into credit loan programs and projects*" (Prime Minister, 2018). Similarly, the National Strategy on Green Growth for the 2021-2030 period, with a vision to 2050, issued together with Decision No. 1658/QD-TTg dated October 1, 2021, of the Prime Minister, the State Bank of Vietnam takes responsibility for *"reviewing, modifying and improving banking and credit institutions in alignment with green growth goals; researching and building a green banking development model; and issuing preferential credit policies for green investment projects"*.

The National Strategy on Climate Change for the period up to 2050 issued with Decision No. 896/QD-TTg dated July 26, 2022, by the Prime Minister, outlined that climate change adaptation and the goal of net zero emissions are opportunities for sustainable development which are the first priority in development policies and the highest ethical standards of all levels, sectors, businesses, and people. The implementation of this strategy is grounded in the principles of justice and fairness, adopting a global and inclusive approach with the goal of reducing greenhouse gas emissions and achieving net zero emissions by 2050. However, in this Strategy, the State Bank of Vietnam is not directly "assigned" tasks like The Ministry of Natural Resources and Environment, the Ministry of Planning and Investment, The Ministry of Finance, Ministry of Industry and Trade, Ministry of Transport, Ministry of Agriculture and Rural Development, and Ministry of Construction. Instead, it only *"establishes and issues plan to combat climate change every 10 years according to the management field; integrating objectives, tasks, and solutions into strategies, planning, and development plans of relevant sectors and fields in accordance with practical circumstances".*

From the strategies for the development of the banking sector, the national strategy on green growth, and the national strategy on climate change, it is evident that Vietnam is actively pursuing sustainable development goals by promoting green growth at the national level as well as in the economic sectors. The strategy on climate

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change adaptation emphasizes reducing greenhouse gas emissions with the aim of achieving net zero emissions by 2025. While the tasks of carrying out this strategy have been assigned to the Ministries, the State Bank of Vietnam has not been tasked with direct implementation. This indicates that the State Bank of Vietnam has not yet established a policy to include climate change, environmental risks, green growth, and sustainable development in national monetary policy. For this reason, to create a legal foundation for incorporating environmental issues into monetary policy, it is necessary to include climate change and the environment as key goals and requirements in the amendment and supplementation of Law No. 46/2010/QH12 dated June 16, 2010, on the State Bank of Vietnam.

4. CONCLUSION

Climate change and environmental risks have affected all aspects of socio-economic life from macroeconomic goals to the production efficiency of enterprises and the well-being of people. Addressing climate change and environmental risks is an urgent task that requires the participation of central banks. They deal with these issues more effectively because they have the authority to utilize institutional resources and the great influence of national currency on economic areas and social life. When facing climate change and environmental risks, central banks have changed from passive participants to actively getting involved in "integrating" environmental issues into monetary policy or monetary policy management. This transformation represents a positive sign to address climate change more thoroughly and effectively through regulating capital sources for environmentally friendly business investment projects. Vietnam is also affected by climate change and environmental risks, but the current policy and legal framework do not yet reflect the requirements and responsibilities of the State Bank of Vietnam as an indispensable subject. Therefore, it is essential to create a policy and legal framework for the State Bank of Vietnam to proactively participate in adapting to climate change and environmental risks because national goals on green growth and climate change are unlikely to become reality without the involvement of commercial banks - the main source of capital in the economy in Vietnam.

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