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TRANSFORMING DEVELOPMENT MODELS TO ADAPT TO CLIMATE CHANGE IN VIETNAM TODAY

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Abstract:
In the context of climate change and increasing sea level rise, unpredictably affecting the survival of humanity, there is a danger of erasing the economic development achievements of countries. In response to climate change and sea level rise, countries have transformed their growth model to green growth - considering this an inevitable development trend, both a means and a result of sustainable development and environmental protection. Vietnam is not an exception to that general trend. The article clarifies a number of contents related to climate change, overviews climate change in Vietnam in the past time and scenarios to cope with climate change to clarify the transition to green growth in accordance with the circumstances of Vietnam, thereby making some recommendations to better implement green growth in Vietnam in the coming time.

Keywords: climate change, green growth, sea level rise, sustainable development, environmental protection

1. Introduction

In the 21st century, climate change becomes one of the biggest challenges facing humanity, an issue that the international community must pay attention to because no country can live in peace with climate change. Vietnam is a developing country but also a country heavily affected by climate change, the impact of climate change is currently creating great challenges, affecting many development goals and sustainability in Vietnam. Therefore, for Vietnam "*green growth is not only an inevitable choice but also an opportunity to become a pioneer in the region, catching up with the development trend of the world*". Green growth is considered as the key to ensuring the successful implementation of the objectives in the 10-year socio-economic development strategy for the period 2021-2030; at the same time, creating opportunities for Vietnam to continue its innovation

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momentum, accelerate the transformation of growth models in depth, and promote quality, efficiency and sustainability (Nhi, 2023). Successful growth transformation will contribute to realizing the goals of the 13th Party Congress and Vietnam's international commitments.

2. Research methods

To achieve the above purpose, the basic research methods used in the article are logical, historical, analytical and document methods. The materials used are mainly original documents through the Complete Document of the Communist Party of Vietnam, reports of domestic and foreign organizations.

3. Research results

3.1. Climate change and response to climate change

To date, there are many concepts of climate change. According to the Intergovernmental Panel on Climate Change (IPCC, 2007), climate change is a change in the state of the climate system, which can be identified by the mean variability and variability of its properties, maintained for a sufficiently long time, typically decades or longer. Climate change can be caused by natural processes within the climate system, or by external influences, or by permanent human action that alters the composition of the atmosphere or uses land.

In Vietnam, climate change is the term used to refer to the change of climate due to human impacts that change the composition of the earth's atmosphere. The change of the climate system including the atmosphere, hydrosphere, biosphere, lithosphere at present and in the future due to natural and anthropogenic causes during a certain period, measured in decades or millions of years. Variation can be a change in the average weather or a change in the distribution of weather events around an average (Science Committee, 2017, p.22). In a word, climate change is the change of the climate system from biosphere, atmosphere, hydrosphere to lithosphere in the present and in the future. Climate change has diverse manifestations such as: - The warming of the atmosphere and the Earth in general; - Changes in the composition and quality of the atmosphere are harmful to the habitat of humans and organisms on Earth; - Sea level rise due to melting ice, leading to flooding in lowlands and small islands in the sea; - The movement of climate zones that exist for thousands of years in different regions of the Earth leads to the risk of threatening the life of living species, ecosystems and human activities; - Changes in activity intensity of atmospheric circulation, water cycle in nature and other biogeochemical cycles; - Changes in biological productivity of ecosystems, quality and composition of the hydrosphere, biosphere, and geosphere (Science Committee, 2017, p.23).

Responding to climate change is simply understood as human activities aimed at reducing greenhouse gas emissions and adapting to climate changes that have and will take place. Mitigation includes activities that directly or indirectly aim to reduce the level

or intensity of greenhouse gas emissions. Adaptation includes initiatives and solutions for activities that modify the environment and human way of life to reduce vulnerability to existing or potential climate change and to take advantage of the opportunities created by it. Mitigation and adaptation actions should complement each other: GHG emission mitigation is an opportunity for green economy development. Climate change adaptation should be central to production and livelihood activities.

In order to proactively respond to climate change and reduce the dangers and challenges posed by climate change to humanity, the United Nations Conference on Climate Change was first held in 1995 in Germany, then the conference is held annually within the framework of the United Nations Framework Convention on Climate Change (UNFCCC), these conferences are the official meeting place of the Parties to the UNFCCC (Conference of the Parties, COP) to assess the process of coping with climate change. To date, 27 conferences of the Parties to the UNFCCC (COP 27) have taken place. In which, COP26, in Glasgow (Scotland, UK), is the largest and most important international conference on climate change, which is of particular interest to the international community in the context of climate change complicated and unpredictable developments with increasingly serious impacts on a global scale. Therefore, it requires countries to take strong action to achieve the goals set out in the Paris Agreement on climate change. At COP 27, countries continue to promote global efforts to fulfill their commitments to respond to the climate crisis.

In the twenty-first century climate change becomes one of the biggest challenges facing humanity. Climate change is the main manifestation of global warming and sea level rise that have created the current extreme weather phenomena. Along with that is destroyed ecosystems, loss of biodiversity, according to current earth temperature calculations, species are disappearing or in danger of extinction. About 50% of plant and animal species will face extinction by 2050 if the earth's temperature increases by another 1.1 to 6.4 degrees Celsius (Male, 2021). occurred in many places causing damage to both people and property, leading to the risk of war and conflict between countries and territories due to increasingly scarce food and fresh water. Climate change causes adverse impacts on production, reducing productivity, salinization of water sources, droughts and floods, along with unusual natural disasters, causing loss and reduction in product quality, affecting the quality of products, greatly affecting the income and well-being of people and other living things. Therefore, green growth is one of the solutions to cope with climate change in Vietnam.

Green growth is defined by the World Bank (WB) as "*efficient in using natural resources, clean in reducing pollution and impact on the environment, flexible in adapting to threats of natural disasters*" (World Bank, 2012). According to the Organization for Economic Cooperation and Development, green growth includes "*promoting economic growth and development while ensuring that natural assets continue to provide environmental resources and services for sustainable development*". For this to happen, green growth must be the catalyst for investment and innovation, the basis for sustainable growth, and the creation of new economic opportunities (OECD, 2014). According to the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP): Green growth is

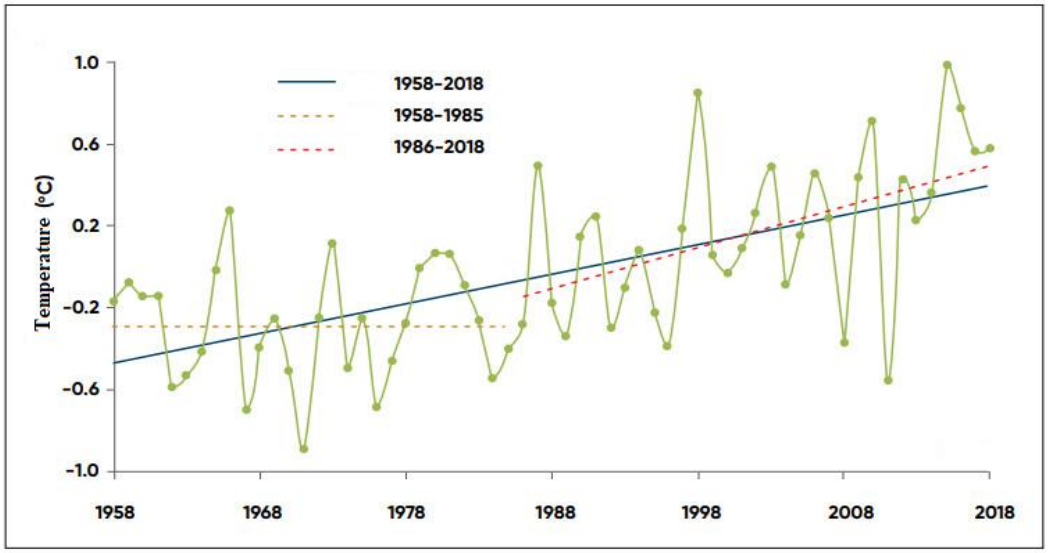
a strategy to achieve sustainable development. Green growth is GDP growth that maintains or restores the quality and integrity of the ecological environment, while meeting the needs of all with the lowest possible environmental impact. This approach seeks to harmonize economic growth and environmental sustainability to adapt to climate change by promoting fundamental changes in society's production and consumption. Therefore, many countries around the world are moving towards this trend towards sustainable development.

As such, climate change becomes a global threat and one of the biggest challenges facing humanity. This is an issue that the international community must pay attention to because no country can live peacefully in the face of climate change, "*countries in the world are all on the same boat. If the ship sinks, no one will have a chance to survive. This will be the path that can only go forward, not the right of every country to step back. But only when we really accompany, commit and create a firm belief, can we mobilize maximum strength to protect this ship*" (Pham Quang Vinh, 2021).

3.2. The status of climate change in Vietnam

With its geographical location and unique natural conditions, Vietnam is one of the countries heavily affected by climate change, with unusual climate phenomena such as: unusual floods, droughts, and droughts. sea level rise, extreme weather events, rising temperatures. Therefore, the Ministry of Natural Resources and Environment has developed the National Climate Assessment Report and Climate Change Scenarios to analyze the impacts of these impacts. Climate change for Vietnam now and in the future. The specific manifestations of climate change in Vietnam in recent years and the forecast of some future scenarios can be generalized into the following basic contents:

Figure 1: Evolution of the annual mean temperature error standard



Source: (Ministry of Natural Resources and Environment, 2020, p. 78)

Firstly, the annual average temperature tends to increase nationwide.

According to the Climate Change Scenario 2020 version published by the Ministry of Natural Resources and Environment, the average annual temperature tends to increase. Towards the end of the century, the temperature increase will increase.

Figure 1 shows 3 periods on average, the average temperature across the country from 1958 to 2018 has an increasing trend, with an average increase of 0.89°C/61 years, However, the rate of increase is very different between two half periods, in the first 27 years (1958-1985) the increase was very little, only 0.15°C, average 0.056°C/decade; in the following 33 years (1986-2018) increased to 0.74°C; average 0.22°C/decade (Ministry of Natural Resources and Environment, 2020, p.77) the increase in annual mean temperature gradually increases over decades, the strongest increase in the recent decade (2011-2018). In addition, the temperature also varies between seasons of the year and between regions in the country.

Extreme temperatures, record high temperatures were recorded in recent years: Tuyen Hoa station (Quang Binh) 43.0°C in April 2019, at Lao Cai station 41.8°C on the day May 22, 2020. Vietnam's highest temperature record is 43.4°C observed on April 20, 2019 at Huong Khe station (Ha Tinh). In contrast, the phenomenon of severe cold, severe cold lasting for 38 days in the North in 2008, ice and snow appeared on the top of Mau Son (Lang Son) and Hoang Lien Son (Lao Cai), the lowest temperature was down to -2÷ -3°C, snow and ice appear in many places, have had snow many times and even in places where there has never been snow in history such as Ba Vi (Hanoi) and Ky Son (Nghe An).

Second, the average annual rainfall for the whole country in the period 1958-2018 tends to increase slightly.

In terms of annual rainfall and rainy season, both tend to increase over most of the country; dry season rainfall tends to increase, with an increase of 2.1% in 61 years. Annual rainfall tends to decrease in most of the northern and western parts of the Central Highlands, and tends to increase in most of the southern area, with the most in the South Central region (Ministry of Natural Resources and Environment, 2020, p. 81). Seasonal rainfall for each climate zone tends to increase in most seasons and increases the most in winter, while in the northern region, autumn and summer tend to decrease.

Third, the number of storms and tropical depressions tends to increase and develop unpredictably.

In recent years, natural disasters have been complicated, fierce and difficult to predict. Hurricanes are also more unpredictable because of their unusual trajectory and intensity. On average, there are about 12-13 storms and tropical depressions annually (Ministry of Natural Resources and Environment, 2020, p. 83). In the last 30 years alone, Category 4 and Category 5 hurricanes have doubled. The warm waters increased the strength of the storms. It is the high temperatures in the ocean and in the atmosphere that drive the storm's speed to terrifying levels. Warming water temperatures in the seas and oceans are an invigorating factor for hurricanes. Severe storms are increasing day by day. In the past 30 years alone, the number of severe thunderstorms has nearly doubled.

Fourth, the sea level tends to change and rise.

Increasing temperatures on Earth are causing sea levels to gradually rise. Rising temperatures cause glaciers, sea ice or continental ice on Earth to melt and increase the

amount of water that flows into the seas and oceans. The average annual sea level change trend is 2.7 mm/year; but not equally in the coastal areas, the strongest increasing trend is the coastal area from Quang Ngai to Binh Thuan with an increase of 4.2÷5.8 mm/year. slower growth in provinces from Ho Chi Minh City. From Ho Chi Minh City to Tra Vinh with an increase of 2.2÷2.5 mm/year (Ministry of Natural Resources and Environment, 2020, p.84).

According to statistics, in the period 2011-2020, extreme climate has caused serious economic damage, with a total loss estimated at 229,958 billion VND (equivalent to 10 billion USD, at the exchange rate in 2022), about 2,153 people died, 316 people were missing and 4,117 people were injured due to natural disasters. Post-disaster losses also include disease outbreaks caused by contaminated drinking water and mental health problems caused by trauma, anxiety, and stress. Climate change is also one of the reasons for increasing migration and forcing tens of thousands of households to permanently relocate, risking the loss of cultural identity and local knowledge. Direct damage to public and private property, on average, Vietnam suffers about $2.4 billion each year (equivalent to 0.8% of GDP) due to extreme weather events. Moreover, taking into account the overall costs of environmental degradation, the damage caused by climate change is estimated at around US$10 billion in 2020, equivalent to 3.2% of GDP (Bao Chau, 2022). Therefore, without effective adaptation solutions, a temperature increases of 1.0oC and 1.5oC can cause losses of about 1.8% of GDP and 4.5% of GDP, respectively; economic loss is about 4.3 billion USD in the next 10 years, this is one of the factors that reduce the growth of our country.

3.3 Scenario to cope with climate change in Vietnam

In order to actively respond to climate change over the years, Vietnam has developed and published scenarios for climate change and sea level rise. In 2009, Vietnam first published the scenario of climate change and sea level rise, which is the basis for the formulation of strategies, master plans and plans for socio-economic development in the period 2010-2015. In 2012 and 2016, the scenarios of climate change and sea level rise were continued to be published, in order to provide the latest information on the changes and trends of climate and sea level rise, creating a basis for serving the formulation of strategies, master plans and national action plans to respond to climate change in the 2016-2020 period.

Inheriting from the 2016 climate change and sea level rise scenario, the 2020 climate change scenario is based on the latest announcements of the Intergovernmental Panel on Climate Change (IPCC), with the results The latest of global climate models, hydrometeorological observations, sea level data from satellite and topographic data. In it, the change in the 21st century of climatic factors such as temperature (average annual temperature, season and extreme temperature), rainfall (yearly rain, rain in circulation seasons, is mentioned, dry season, rainy season, extreme rain) and some extreme climate phenomena (storms and tropical depressions, number of days of intense cold, harmful cold, number of days of heat and drought).

Table 1: Summary table of climate change scenarios of Vietnam in the mid-century (2046-2065) and late-century (2080-2099)

Criteria	According to the scenario RCP4.5		According to the scenario RCP8.5	
	2046-2065	2080-2099	2046-2065	2080-2099
Average annual temperature across the country	The common increase is from 1.2 1.7°C, of which, in the North, it is common from 1.6 1.7°C, in the South, it is common from 1.2 1.3°C.	Temperature increases from 1.6 2.4°C, of which, in the North, the increase is common above 2.0°C, in the South, the increase is common below 1.8°C.	The temperature increase is common from 1.7 2.3°C, in which, the increase in the North is more than 2.0°C, the increase in the South is less than 2.0°C.	The common increase in temperature is from 3.2 ÷ 4.2°C, in which the North increases from 3.8 ÷ 4.2°C, the South increases from 3.2 ÷ 3.5°C.
Average annual rainfall across the country	Uptrend with a popular increase of 10 ÷ 15%	uptrend with a popular increase of 10 20%	uptrend with a popular increase of 10 ÷ 15%	popular increase from 10 25%
Rainfall in rainy season	the common increase is 5 25%, the highest increase is in the Northeast coast, the North Central Coast and the South Central Coast.	increase in popularity by 10 25%, especially in coastal areas and island stations in the Northeast and South Central Coast, the rainfall may increase by 30 40%.	The trend is increasing over most of the country with a common increase of 5 25%, especially in island stations and the Northeast coast, the rainfall increases by 30 35%.	increase in popularity by 15 30%, especially in the coastal areas of the Northeast and the South Central Coast, the rainfall may increase by 40 60%.
Hot weather (number of hot days/year)	The number of hot days increases in popularity from 15 30 days	The number of hot days increases in popularity from 40 60 days	The number of hot days increases in popularity from 40 70 days	The number of hot days increases in popularity 75÷90 days
Drought		The number of drought months in the dry season tends to increase over most of the North Central Coast, Central Highlands, part of the North and South Central Plains.		The number of drought months increases over most of the country and tends to decrease in a part of the Northwest, Central and Southern regions of the South.
Sea level rise	In 2050, the coastal area of Mong Cai - Hon Dau has the lowest sea level rise of 22 cm (14 cm ÷ 30 cm). The	In 2100, the coastal area of Mong Cai - Hon Dau has the lowest sea level rise of 52 cm (33 cm ÷ 75 cm), the Truong Sa	Mong Cai - Hon Dau coastal area has the lowest sea level rise of 26 cm (18 cm ÷ 35 cm). The area of Truong	The coastal area from Mong Cai to Ngang Pass has the lowest sea level rise of 72 cm (49 cm ÷ 101 cm),

	area of Truong Sa archipelago has the highest sea level rise of 24 cm (14 cm ÷ 31 cm), the average coastal strip is 23 cm (13 cm ÷ 31 cm).	archipelago has the highest sea level rise of 57 cm (33 cm). ÷ 83 cm); average coastal range is 53 cm (32 cm 76 cm)	Sa archipelago has the highest sea level rise of 28 cm (20 cm ÷ 37 cm), the average coastal strip is 27 cm (19 cm ÷ 36 cm).	the highest in the Paracels is 78 cm (52 cm ÷ 107 cm).
Sea level rise	If the sea level rises by 100 cm, the area at risk of flooding will be in areas such as: 13.20% of the Red River Delta; 1.53% of the land area of the central coastal provinces from Thanh Hoa to Binh Thuan; about 1.53% of the land area of the central coastal provinces from Thanh Hoa to Binh Thuan; about 17.15% of the city's area. Ho Chi Minh; 47.29% of the area of the Mekong Delta… By the end of the 21st century, if the temperature increases by about 3.4 degrees Celsius, the sea level will increase by 1m, about 40% of the land area of the Mekong Delta will be permanently flooded, about 10% of the population will be directly affected.			

Source: Author compiled from Climate Change Scenario (Ministry of Natural Resources and Environment, 2020.

The scenario is the basis to help Vietnam predict the situation, choose appropriate economic development strategies to minimize risks and adapt to climate change towards sustainable development.

According to the Intergovernmental Panel on Climate Change, when the sea level rises by 1m, it is estimated that 5.3% of the natural area, 10.8% of the population, 10.2% of GDP, and 10.9% of urban areas, 7.2% of the agricultural area and 28.9% of the lowlands will be affected. (Vietnam Economic Review, 2022. In the study "The impact of climate change and natural disasters on multidimensional inequality in Vietnam" by the Mekong Development Research Institute (MDRI) and Oxfam in Vietnam, the impact of natural disasters and climate change was analyzed in 4 areas of people's life, including life and health; education; good job, financial security; living conditions. In the years 2016-2020, Vietnam suffered from many natural disasters with an average annual loss of more than 32,000 billion VND, equivalent to 0.5% of GDP, leading to hundreds of deaths (Government e-Newspaper, 2022). Climate change has the most obvious impact on production activities in the agricultural and industrial sectors, especially the processing industry. Thereby, it requires appropriate development policy to minimize the impact of climate change and natural disasters on different aspects of multidimensional inequality in Vietnam.

3.5. Promoting green growth to responsible to climate change in Vietnam today

Climate change has a great impact on the living environment as well as human livelihood, thus becoming a serious challenge to the survival of mankind. The main areas and areas affected by climate change include: freshwater resources, ecosystems, food production and forestry, coastal and lowland areas, industry and residential areas, as one of the countries hardest hit by climate change, Vietnam is making comprehensive efforts to both respond to climate change and develop its economy. Recognizing the importance

of green growth as growth based on the process of changing the growth model, restructuring the economy in order to take advantage of comparative advantages, improve efficiency and competitiveness of the economy. economy through research and application of advanced technologies, development of modern infrastructure systems to effectively use natural resources, reduce greenhouse gas emissions, respond to climate change, contribute to poverty reduction and create a driving force to promote economic growth in a sustainable way. The document of the 13th National Congress of the Communist Party of Vietnam emphasized that climate change has really become the biggest challenge facing humanity. Therefore, "*adaptation to climate change is an urgent requirement and at the same time a huge challenge for our country in the coming time*" (Communist Party of Vietnam, Document of the Second National Congress of Deputies). XIII, volume 1, 2021, p.108). The Party identifies and responds to climate change as one of six key tasks to bring the country into a new stage of development, with the following requirements: Strengthening environmental protection and improvement; proactively and actively implementing solutions to adapt to climate change; building a legal system, policy and mechanism to monitor climate change; develop green economy, low waste, reduce greenhouse gas emissions; encouraging the development of a circular economy model (Communist Party of Vietnam, Document of the 13th National Congress of Deputies, volume 1, 2021, pp. 52-53). Therefore, in the country's development orientation for the period 2021-2030, for the first time, the Party sets out an orientation to respond to climate change. This is identified as one of the key orientations and the highest priority in the national development policy: "*Actively and effectively adapting to climate change; resolutely eliminate projects that pollute the environment, ensure the quality of the living environment, and protect biodiversity and ecosystems; building a green, circular, and environmentally friendly economy*" (Communist Party of Vietnam, Document of the 13th National Congress of Deputies, volume 1, 2021, pp.116-117).

The shift to green growth is not only an inevitable choice, but also an opportunity for Vietnam to become a pioneer in the region, catching up with the world's development trend, and at the same time, one of the most effective measures to take, most effectively so that Vietnam can proactively and effectively respond to climate change. Vietnam has soon approached the green growth model and started to change the growth model from brown to green. The national strategy on green growth for the period 2011-2020, with a vision to 2050 has been promulgated in 2012. Along with that, the National Assembly has promulgated, supplemented and amended a number of laws related to green growth. The latest are the National Green Growth Strategy for the 2021-2030 period, a vision to 2050 and the National Green Growth Action Plan for the 2021-2030 period with the goal of promoting economic restructuring associated with renewing the growth model, in order to achieve economic prosperity, environmental sustainability and social equity; towards a green, carbon-neutral economy and contribute to the goal of limiting global temperature rise. The national strategy on green growth this time has deepened the contents of economic development, economic restructuring associated with renovating the growth model towards reducing greenhouse gas emissions, enhancing climate change resilience with a cross-cutting approach from point of view, goal to solution for

the overall economy and priority sectors. The national green growth strategy is expected to have a positive impact on Vietnam's socio-economic development.

The transformation of the growth model to green growth, green economic development is an inevitable trend and a goal that Vietnam is aiming for in order to implement the development orientation in the spirit of the Resolution of the 13th Party Congress. The 5-year socio-economic development plan 2021-2025 and the 10-year socio-economic development strategy 2021-2030; at the same time, creating opportunities for Vietnam to become a pioneer in the region in green growth, green recovery, and catch up with the new development trend of the world.

In order to develop the green economy in association with the sustainable development of the country in a comprehensive way, both achieving the goal of economic growth and ensuring social security, protecting the environment and the ecosystem for the future, it is necessary to focus on here are some basic solutions:

Firstly, raise people's awareness about the benefits of green growth. Along with the advantages of developing a green economy in Vietnam, there are difficulties and challenges, which are: awareness and understanding of green economy are still quite new, inconsistent, incomplete and unconsensusable; domestic production technology is still backward, consuming a large amount of energy; National accumulation at the threshold of water escaping the poverty line and policies are still unclear, so the green economic structure is also a big challenge plus the lack of synchronization and small scale in development strategies and planning. going green. Therefore, it is necessary to raise people's awareness of the importance of green growth, in order to continue to form action plans and specific projects to respond to climate change and create motivations. for green growth. Enterprises are the force directly involved in the production process, promoting economic development, so they play an important role in green growth. Therefore, it is necessary to develop and implement propaganda projects to raise awareness of the political system, businesses and the community (including consumers to form the habit of "green consumption" and protect the environment) on green growth, contributing to speeding up the implementation process quickly and effectively.

Second, continue to improve the institutional and legal framework for green growth. Currently, the shift to green economy and green growth, implementation of green growth strategy is an inevitable choice to implement the country's new development orientation in the spirit of the Resolution of the 13th Party Congress. 10-year socio-economic development strategy 2021-2030, 5-year socio-economic development plan 2021-2025. Since 2012, the Prime Minister has promulgated the "National Strategy on Green Growth in the 2011-2020 period, with a vision to 2050" and the Vietnam Sustainable Development Strategy for the 2011-2020 period. The Government has approved the "National strategy on green growth for the period of 2021 - 2030, with a vision to 2050" (Decision No. 1658/QD-TTg dated October 1, 2021), which sets out the transition goals changing the growth model towards greening economic sectors, applying the circular economy model through economical and efficient exploitation and use of natural resources and energy based on science and technology, apply digital technology and digital transformation, develop sustainable infrastructure to improve

growth quality, promote competitive advantages and minimize negative impacts on the environment. These strategies have identified sustainable development as a requirement throughout the country's development process, closely, rationally and harmoniously combining economic development with social development and resource protection, environment, ensuring national defense, security and social order and safety. Therefore, in the coming years, ministries, branches and localities need to perfect the framework of mechanisms, policies and laws in the direction of inter-regional and inter-sectoral coordination and integrate green growth goals and solutions to promote green growth. push to restructure the economy in association with innovating the growth model, optimizing resources, especially in building multi-purpose infrastructure. At the same time, it is necessary to promote the application of green economic tools to production and consumption activities, the system of standards and national green classification criteria to ensure consistency, transparency and regular updates for the programs, projects, products, services, technologies, industries. Improve the effectiveness and efficiency of state management in monitoring and evaluating the implementation of the National Strategy on green growth and the degree of greening of the economy.

Thirdly, promote the attraction of investment capital for green growth. To implement green growth requires huge resources, meanwhile, the State budget for green growth is very limited. Calculations by the Ministry of Planning and Investment and the World Bank show that, to implement the Green Growth Strategy to 2030, it is expected to need about 30 billion USD, of which the State budget can only meet up to 30% of the resources and need up to 70% from other sources, mainly the private sector and this resource is crucial to ensure the success of the implementation of the Green Growth Strategy. In order to mobilize private investment, government policies need to take a longer-term view instead of short-term policies to create confidence in the private sector. It can be said that converting the traditional economy to a green economy is a trend that many countries around the world are aiming for. Vietnam is setting many priorities for building a green economy and urgently needs to attract investment capital into sustainable development projects. Therefore, there is a need for innovative initiatives and solutions to mobilize private investment in projects that bring about environmental, social and governance efficiency. Thereby, contributing to creating jobs, contributing to inclusive growth as well as helping Vietnam fulfill the Sustainable Development Goals (SDGs) by 2030.

Fourth, in planning and formulating green growth strategies, it is necessary to base on climate change scenarios. Actual green growth strategy; strategies to adapt to climate change at the national level have been developed and perfected. But at the local level, the problem of planning and formulating specific strategies in each period and each sector has not done well in integrating socio-economic development with adaptation to climate change, towards green growth. Therefore, for policy-making agencies and state management agencies at all levels, it is necessary to quickly review planning, apply and integrate the National Green Growth Strategy into development plans and programs socio-economic development, continue to develop specific roadmaps and scenarios for green growth activities, and integrate green growth targets in the system of targets of

socio-economic development plans and sector strategies. Based on the general and master plans of the country, each ministry, sector, region and each locality shall develop separate master plans to serve as a basis for formulating the most effective socio-economic development strategies closely associated with the goal of increasing economic growth. Green growth, sustainable growth of which there are full, detailed calculations and orientation of production activities to adapt to climate change. To enhance resilience to the effects of climate change, in planning and formulating policies towards green growth, it is also necessary to be flexible and creative in applying eco-system-based economic models (EbA), community-based (CbA) and nature-based (NbS), for each locality, take indigenous knowledge combined with new science and technology to invest in development, put people's livelihood and safety to the forefront to bring about the highest economic efficiency, thereby contributing to reducing vulnerability and increasing adaptability to climate change, ensuring sustainable growth and development.

4. Conclusion

Climate change is considered a serious challenge for humanity in the 21st century with negative impacts, threatening the survival of ecosystems and human life. This is a global problem that requires the efforts of each country to respond as well as the close cooperation of the international community. Over the years, Vietnam is one of the countries most affected by climate change and has made many active response efforts. To address the risk of natural resource depletion, pollution and habitat degradation, countries around the world, including Vietnam, are gradually shifting their models towards green growth. Green growth is a major and important policy of the Party and State in order to green the economy, ensuring fast, effective and sustainable economic development, making an important contribution to the implementation of the National Strategy on Climate Change. In order to transform the growth model to green growth, sustainable development, and climate change adaptation, it is necessary to mobilize the strength and political determination of both the political system and the people of the country, especially the raising awareness, practical actions for green growth.

Conflict of Interest Statement
The author declares no conflicts of interest.

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