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A Scientific Review on the Issues of Sustainability in Vietnam During the Period from 2011 to 2021

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ABSTRACT

Vietnam is an active member of the United Nations and must make great efforts to implement sustainable development. Through better perception, natural resources, policy, and scientific studies may support the country in developing a hybrid approach to achieve the Sustainable Development Goals (SDGs) convincingly. The review demonstrates that Vietnam has achieved the expected results on most goals. Nevertheless, gaps in regions, socio-economic groups, and gender equality lead to uneven development in some regions. Regional boundaries that function as urban and rural, plains and mountainous, or ethnic minorities also limit approaches to food production, freshwater, and overall policy implementation. There are rising environmental issues that negatively affect long-term development such as pollution (air, water, and soil), salinization due to rising sea levels, climate change, and depletion of natural resources, etc…. Owing to rapid economic development, and the lack of awareness of the SDGs among residents and young people, Vietnam has not yet made strong progress toward sustainable development. Appropriately, scientists have paid increasing attention to the quest to interpret insurmountable obstacles to sustainable development to provide policymakers with better and more powerful solutions and response capabilities and help them achieve their overall goals conclusively.

1. INTRODUCTION

Sustainable Development (SD) was considered a formal concept in The Brundtland Report, published in 1987 by the United Nations World Commission on Environment and Development after an upsurging recognition of the ecological, resource crisis in the prior from the beginning of the 18th century to the end of the 20th century [1].

Vietnam joined the United Nations (UN) on 20 September 1977 after reunification and the establishment of the Socialist Republic of Vietnam in July 1976. With the support of the UN, a powerful revolution took place in areas such as administration, policies, social protection, health care, education, and agriculture. Moreover, Vietnam also has actively participated in the implementation of the global sustainable development agenda.

From 1992 to 2012, Vietnam became part of the Earth Summit on Environment and Development in Rio de Janeiro, Brazil in 1992; the World Summit on Sustainable Development in Johannesburg, South Africa in 2002; the Rio Declaration on Environment and Development, the Global Agenda 21; etc; and active commitment to implementing sustainable development. Specifically, Vietnam implemented the Strategic Orientation for Sustainable Development (Vietnam Agenda 21) on 1 August 2004. Accordingly, The National Council on Sustainable Development was established in 2005 and was entrusted with providing counsel to the Prime Minister and delivering detailed guidance on the accomplishment of the Strategic Orientation for Sustainable Development nationally. Subsequently, Vietnam has made considerable efforts to implement sustainable development projects and achieve remarkable performance in economic, social, and environmental areas. Characteristically, Vietnam has released a sequence of policies that take responsibility for SD. The Socio-Economic Development Strategy for 2001-2010 and The Socio-Economic Development Strategy for 2011-2020 are powerful evidence. Vietnam has also signed international agreements such as the Montreal Protocol on Substances which Deplete the Ozone Layer; the Vienna Convention on Protection of the Ozone Layer and Viet Nam's Comprehensive Poverty Reduction and Growth Strategy (CPRGS), which was adopted in 2002, and organically linked economic growth objectives to hunger eradication, and poverty reduction, and ensured social equity and sustainable development. In addition, the support and integration with other sectoral programs, including the National Target

Program on Rural Clean Water and Sanitation from 2006; the Program on Saving Electricity for the 2006 – 2010 period; the Program on Distribution of Populations in Areas Prone to Natural Disasters; Critical and Highly Critical to Protective Forests and Strictly Protective Premises of Special-Use Forests for the 2006 - 2010 period and Orientations to 2015; and the National Target Program on Construction of New Rural Areas for the 2010 – 2020 period, were provided. In this stage, there was a governmental review named the National Report at the UN Conference on SD (2012) [2]. This review was considered an instruction manual for the implementation of SDs in Vietnam by the government. It also provided impressive achievements and imperfections. A review of energy access programs was presented to show the discourse on the energy approach and sustainability [3], and some discussions about regional problems such as floods and salinity in the Mekong Delta [4], coastal zones [5], and landslide geohazard in north-western of Vietnam [6]. These scientific findings can greatly contribute to the understanding of poly-makers. Nevertheless, there are several serious obstacles. In particular, the economy was not associated with social development and the protection of natural resources; poverty, unemployment, and education quality did not improve significantly [2].

In the past 10 years, there were some vivid achievements and outcomes until 2016 in Vietnam's Voluntary Review (2018) which was a formal review from the government. Regardless, the existing issues create many obstacles for Vietnam to achieve SDGs including inappropriate policies in ethnic minorities, rural areas, etc…; Vietnam is one of the countries affected the most by climate change such as disasters, drought, salt water intrusion, etc…; the lack of finance to implement SD [7]. In this stage, there was also an inclusive review of energy for a clean and more sustainable economy in Vietnam that discussed energy resources, policies, and science to support SD [8] and other scientific results on the sustainability and productivity of resources in Vietnam [9], the effect of the industrial revolution on sustainable economic development [10], and the evaluation of irrigation systems for agriculture [11], etc…These findings are observed and disputed to solve problems related to SDGs. Nonetheless, there is a lack of review of the scientific results as an overview for poly-makers to reach goals in vision.

This review discusses scientific findings on current issues according to specific objectives:

- Conducting a comprehensive review of sustainability in the three areas of people, nature, and the economy including the updating results of SDGs from 2010-2020
- Implementing a review of policies following sustainable development and studies providing solutions in certain areas in Vietnam from 2010-2020
- Discussion of the links between resources, policies, technologies, observational research, and economic conditions.
- Forward-looking perspectives and suggestions for sustainable development for Vietnam are provided based on potential areas.
- Research strategies and scientific topics would be proposed to enhance policy and decision-making.

These targets tend to deliver prospective and principal supplements to fill the gaps in articles and summarize the proposed policies and decision-making processes, as well as in conjunction with awareness-raising of SDGs in Vietnam.

2. MATERIALS AND RESEARCH APPROACH

We have made use of systematic literature review (SLR) and meta-analysis studies following the framework as Figure 1 [12].

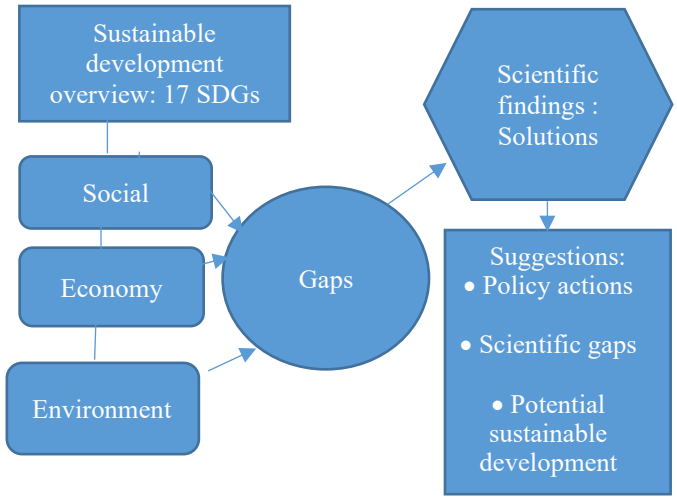

Figure 1. Research approach

3. THE OUTSTANDINGS AND RESTRICTIONS OF SUSTAINABLE DEVELOPMENT IN VIETNAM

Viet Nam's Sustainable Development Goals consist of 115 nationalization targets which were established following "Transforming our World: The 2030 Agenda for Sustainable Development".

3.1 Human and social sustainability

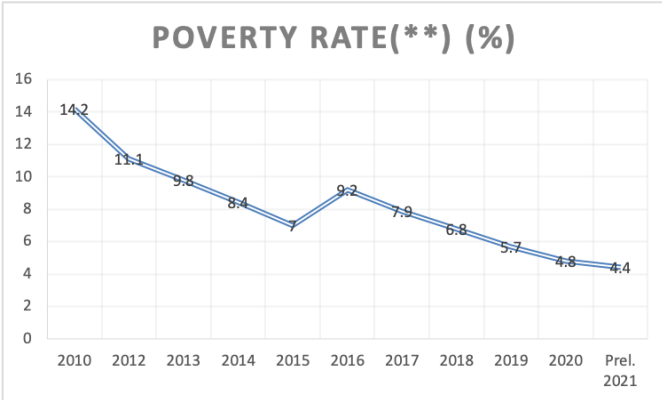

Figure 2. Vietnam poverty rate
Source: General Statistics Office of Vietnam (GSO VN)

In 2010, Vietnam's Human Development Index (HDI) was 0.6; however, this value is unchanged at 0.704 from 2012 to 2020 which seized the nation to a high human development categorization —standing in 117 out of 189 countries and regions. Vietnam's 2020 HDI of 0.704 is less than the median of 0.753 for countries in the high human development group and less than the average of 0.747 for East Asia and the Pacific countries. From East Asia and the Pacific, Viet Nam is compared with the Philippines and Thailand, which have HDIs ranked 107 and 79, respectively [13].

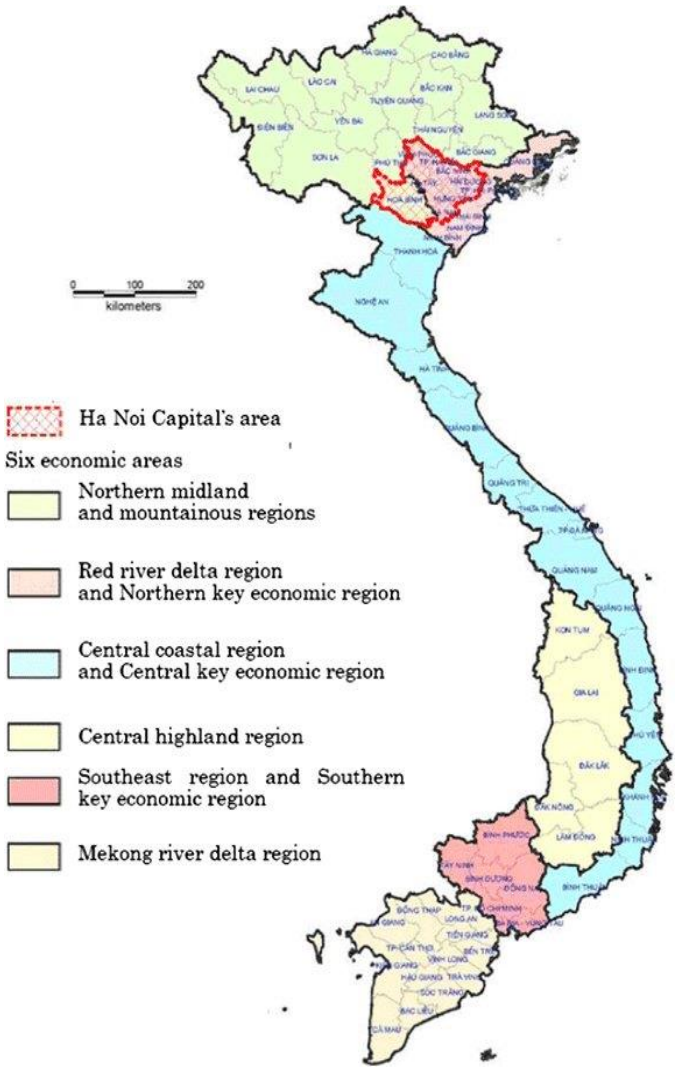

Figure 3. Map of the Six Large Regions and Provinces in Vietnam [14]

The National Target Programme on Sustainable Poverty Reduction (NTP-SPP) was released in 2016-2020 to pay more attention to vulnerable groups, which are mostly ethnic minority people. Results are witnessed in Figure 2: Compared with that in 2010, the poverty rate in 2021 was reduced by 1 third of 3 times. This process is still needed to reach the poverty goal. The reason is that there are obstacles in the northern midland and mountainous regions and in the central highland where ethnic minorities live (overview of the regions in Figure 3). However, the government issued the "Decision approving a number of Millennium Development Goals (MDGs) indicators for ethnic minorities associated with the SDGs after 2015". As shown in Table 1, the Vietnam Multidimensional Poverty Index (MPI) decreased significantly in 2020 in comparison to 2016 in the Northern midland and mountainous regions and the central highland; however, it was still 2 times or 3 times greater than that in other regions. Although Vietnam has achieved and continues to reduce poverty rates significantly, it has not achieved SDG 1 of poverty.

Similarly, Vietnam has achieved a decline in hunger. According to the 2021 Global Hunger Index, Vietnam ranks 61st of the 116 countries with moderate hunger levels. Due to the increasing population, and climate change (one of the five countries most affected by climate change), targets related to ending hunger and improving nutrition are being influenced substantially.

By the end of 2020, 90.85% of the population had health insurance, compared to 59.57% in 2010. Therefore, Vietnam has completed SDG 5 to reduce maternal mortality. However, there was a slight decrease in the under-five mortality rate from 23.8% in 2010 to 22.3% in 2020. In the SDG 6 targets, gender quality does not reach targets in terms of narrowing the gap in women's participation in leadership and managerial positions, or women's educational attainment [15]. In addition, while the percentage of households with hygienic water was relatively high 97.4% in 2020, a slight increase of 90.05% was observed in 2010. The water resource master plan is still unclear, and it is difficult for highland ethnic people to access clean water due to the topography.

To conclude, referring to the human pillar, Vietnam has achieved certain results in the past 10 years, especially in SDG 5 (gender equality), and SDG 6 (water and sanitation). Nevertheless, despite considerable efforts by polices, strategies, and plans have been released to pursue goals. Among ethnic minorities, the multi-dimensional poverty rate is still high, and there is a gender imbalance in access to education, and difficult access to clean water. In terms of regions, the northern mountainous region of the Central Highlands contributes to high poverty and a slow-going drop in the under-five malnutrition rate. Although there is a "Decision approving a number of MDGs indicators for ethnic minorities associated with the SDGs after 2015" for ethnic minority groups and another plan for certain regions, the lack of envelopment of governmental assistance and effective application leads to a gap in performance to achieve goals.

Table 1. Vietnam multidimensional poverty index (MPI) by regions

		2016			2020		
		H	**A**	**MPI**	**H**	**A**	**MPI**
	Nationwide	9.9	35.3	0.035	4.8	34.1	0.016
Area	Urban	3.9	33.1	0.013	3.2	32.4	0.010
	Rural	12.7	35.6	0.045	5.6	34.6	0.019
Region	Red river delta	1.5	31.5	0.005	0.3	32.8	0.001
	Northern midland and mountainous regions	17.4	37.2	0.065	7.4	36.0	0.027
	Central Coastal and central key economic region	7.5	36.0	0.027	3.3	34.0	0.011
	Central highland	20.6	36.5	0.075	8.9	34.7	0.031
	Southeast	4.9	32.3	0.016	6.2	32.7	0.020
	Mekong river delta	19.5	34.4	0.067	8.1	33.8	0.027

Source: GSO VN
H: Headcount ratio
A: Average deprivation share
The MPI: expresses quite accurately the areas of education, health, housing, water and sanitation, and access to information.

3.2 Economic sustainability

The government has released the strategies named National Green Growth Strategy 2011- 2020 and Vision to 2050 as well as the National Action Program on Sustainable Production and Consumption by 2020 with a vision to 2030 and other policies to pursue SD economic growth. As a result, Vietnam's annual average GDP growth reached the target of SDG 8.1 with a GDP growth rate of 5.25 to 7.02 % from 2010-2019, excluding 2020 due to the effects of the epidemic, which had a GDP growth rate of only 2.91%. The productivity of the employed population in 2020 was 3 times greater than the 1.869$ per person. Detailly, the data in Figure 4 shows that the labor of mining and quarrying is more productive than that of other fields. Positively, the productivity of scientific and technical activities is increasing and becoming greater than that of agriculture and construction.

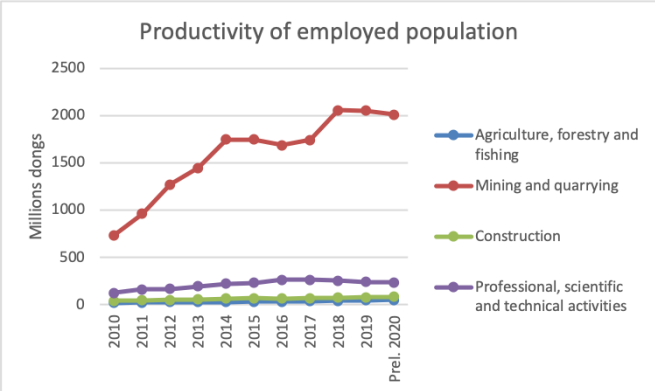

Figure 4. The productivity of the employed population in some areas
Source: GSO VN

Table 2. Assessment on improving policy and mechanisms to implement SCP

2020 Targets	Achievement	Notes
The percentage of firms that apply clean technology in energy consumption and environmental pollution reaches 60-79%	Unknown	By 2030, achieve the target
50% of industrial enterprises apply cleaner productions	In 2010 11%, in 2015 32%, in 2020 50% achievement Achievable	In 30 provinces
The improvement of the green sector, environmental industry sector, and waste recycling sector in GDP up to 42-45%	Unknown	Certain scientific findings and policies assist these activities

Source: [16]

Additionally, sustainable consumption and production (SCP) is an important part of a sustainable economy, Table 2 shows the effectiveness of the policies and actions taken to accomplish SCP. Although enterprises had to reach 60-79% of the total applied clean technology in 2020, there is currently no data on the SCP. The green sector and the environmental industry sector also experience similar situations. The lack of results is limited to reaching the targets in 2030. The aim of industrial companies to apply clean was 50% which was obtainable in 2020 compared to 11% in 2010.

Ultimately, Vietnam economy is developing as the SDG targets. Nevertheless, green growth strategies are often applied when there is a lack of resulting data on how the green economy will follow SD until 2020.

3.3 Environmental sustainability

Vietnam is one of the five countries most affected by climate change worldwide. However, Vietnam still faces challenges and difficulties due to weak intercooperation, and the lack of funds to access technology or support adaptability [7]. Besides, due to industrialization and urbanization, Vietnam is facing pollution, resource and biodiversity depletion [17, 18]. There have been some vivid outcomes in recent years.

Particularly, following the Cleaner Production (CP) Strategy 2010- 2020, Vietnam still did not reach its target in 2020 and even reached the target in 2015 (Table 3).

Table 4 shows the waste collection rates in several popular areas in Vietnam. In the large cities including Ha Noi, Ho Chi Minh, Da Nang, Dong Nai, and Hai Phong, the waste collection rate is more than 90%, while some urban areas and suburbs of provinces such as Nghe An, and Kien Giang, the waste collection rate is 50 to 60%. The reason is that poor or rural areas still exist in the informal sector of waste collection [19]. This leads to difficulties in waste collection in the whole country.

Table 3. The results of strategy on CP

Indicators	Target of Strategy		Achieved in 2015	Achieved in 2020
	2010-2015	2016-2020		
Percent of enterprises conceive broadly the benefits of CP	50	90	55	68.5
Percent of enterprises that applied CP and are capable of saving energy, resources	25	50	24	46.9
Percent of specialists who have full-time, ability for catering instruction and consultation on CP application	70	90	73	-
Percentage of medium and large enterprises with a department in charge of cleaner production activities		90		21

Source: Viet Nam Cleaner Production Centre

Unfortunately, the flourishing economy and urbanization tendency in the last minute of the 2000s have caused a serious growth in waste generation each year. However, segregating waste at the source has not been conducted properly in Vietnam. The recycling of waste is performed by individuals

or groups of personal interest for their living outside of a formal management system. As a result, recycling can not be evaluated in Vietnam [20, 21].

Table 4. Rates of municipal solid waste collection in several localities in 2019

	Region	Percent of Collection		Region	Percent of Collection
1	Ho Chi Minh	91%	8	Bac Ninh	83%
2	Da Nang	100%	9	Dong Nai	99%
3	Hai Phong (urban)	98%	10	Nghe An (urban + suburbs)	50%
4	Ha Noi (urban + suburbs)	93%	11	Quang Nam	90%
5	Thua Thien Hue (urban)	83%	12	Kien Giang (urban + suburbs)	60%
6	Ha Tinh	88%	13	Ba Ria – Vung Tau	94%
7	Long An	90%			

Source: 2016-2020 National Environmental Assessment Report [22]

In summary, Vietnam's efforts include participating in conferences, submitting and making commitments to reduce pollution, and adapting to climate change, and conserving biodiversity. Among the pillars of the environment, Vietnam does not fulfill its goals in this area due to asynchronous management. Among the 3 pillars of people, the economy, and the environment, Vietnam is trying to achieve 5 to 6 SGDs by 2030. Currently, Vietnam has not yet achieved any goals, however, Vietnam is being on the promised process of implementing SD.

4. POLICIES AND STUDIES SUSTAINABILITY IN VIETNAM

4.1 Social development

Sustainable Poverty Reduction (NTP-SPP) in 2016-2020, the 2011-2020 Development Strategy of the Viet Nam Bank for Social Policies outlines the GOVN's efforts for poor and near-poor households, "Decision approving a number of MDGs indicators for ethnic minorities associated with the SDGs after 2015" for ethnic minorities. Regardless, these distinct groups might bear their concerns. Specifically, Hmong and Dzao people are popular ethnic groups in Vietnam. Nevertheless, the livelihoods of Hmong residents are more vulnerable to climate change in natural contexts such as threats, land, water, and food, while the livelihoods of Dzao people are more vulnerable due to socio-economic conditions such as socio-demographic outline revenue, and social networks [23].

Additionally, this study highlights the gap between national policy and implementation at the provincial level, and the provincial government should play a more important role in linking national policy to the actual livelihoods and demands of farmers [24]. The administration might plan realistic solutions to resolve the current issues. Based on these findings, there are optimal propositions such as rapid urbanization including rural-to-urban migrants functioning as students can help promote and transform the countryside area through their skills and knowledge accumulation [25]. This approach can promote incentive mechanisms for new graduate students to return to their hometowns to pursue their careers. Besides, there is a clearheaded analysis that agriculture is still partly responsible for Vietnam's society, especially for the smallholder farmers in the northern midland and mountainous regions, which are based on agriculture-based livelihoods [26].

4.2 The economy

Economic development has consistently focused on mild-income countries. As a result, industrial development has been unsustainable in the last 10 years. The Mekong Delta area which is the center of economic development in Vietnam is a representative illustration [27, 28]. The principal interpretation that Vietnam has formulated on imported resources predominantly for production is a challenge in economic development [9]. In addition, compared to Japan, Korea, and China, the rising affluence in Vietnam is the main factor influencing the lowest productivity materials and carbon use efficiencies [9]. The intellectual justification is the incompetence of project managers, limited sustainable materials and technologies, maintaining the current practice and resisting the change toward sustainability, lack of government incentives, and low implementation level of sustainable practices [29].

Like for social problems, sustainable agricultural development, and modification in connection with sustainable agriculture development are restricted at the provincial level [30]. According to agricultural development, findings, it is recommended that the authorities have an obligation to implement policies to promote to small-scale and diversified farms because of their role in the sustainable development of national pig production in the northern mountains of Vietnam [31].

Simultaneously, sustainable tourism has been fascinating in the recent past because it contributes substantially to a sustainable economy in Vietnam. Regardless, the tourism industry has generally progressed to attractive destinations. Especially, Quang Nam has the most highly evolved sustainable tourism development on the southern central coast of Vietnam [32]. The policies for sustainable destination development need to involve residents's support as local people which is called community tourism [33]. Moreover, the most important collaboration between the environment, local resources, and interagency is the main aspect that has a great influence on tourism sustainability [34].

4.3 Environment

In this area, research papers show considerable concerns about the environment in which Vietnam is struggling to follow environmental sustainability. Regardless, there is an invisible manifestation that the rising foreign direct investment in Vietnam leads to decreasing environmental degradation [35]. To achieve green progression, Vietnam needs to go along behind green foreign direct investment (FDI).

Furthermore, the scientific results are unexpected matters. The impacts of climate change such as salinity intrusion may lead to a decrease in two-thirds of land areas suitable for rice cultivation in the Mekong Delta by 2050 [36]. This significantly accelerates seawater intrusion into groundwater

in Ho Chi Minh City [37]. Moreover, the current groundwater abstraction networks are heavily concentrated in a few specific areas in Hanoi [38]. This is the chief reason for flooding in Hanoi during heavy downpours.

The obvious explanation for Municipal Waste Management (MWM) is that different localities in Vietnam have different solutions for Municipal Waste Management [39]. This is simply because some localities have proposed their action plans, but many localities are waiting for help from the government. Policymakers should establish mechanical–biological treatment facilities because this proposal provides assistance in separating household waste mechanically from waste-to-energy plants, which is the best alternative for the current municipal solid waste management system of Hanoi through 2030 [40]. Compared to Asian countries such as Malaysia, China, India, and Vietnam the government plays a similar role in making policy decisions. This leads to solutions that should be synchronized from society to the economy and the environment as well as from province to nation. Meanwhile, non-governmental and social organizations are more collaborative with the governments in Western countries to solve the problems of sustainability [41].

5. THE PROMISING POSSIBILITIES OF SUSTAINABLE DEVELOPMENT IN THE CURRENT CONTEXT

5.1 Renewable energy

The development of renewable energy is an action in the National Strategy on Climate Change and the National Strategy on Green Growth. As displayed in Table 5, renewable energy capacity in Vietnam is diverse, bagasse, solid biofuels, and renewable waste are examples. The total capacity in 2020 with 35.649MW was 3 times higher than in 2011 with 10.241MW which presents great innovation in renewable energy recently. Especially, the dramatic development of Wind energy and Solar energy from 2015 until now, is shown in Figure 5. From 2018, Solar energy capacity rose sharply to 16504MW far beyond wind energy and others. The potential renewable energy in Vietnam manifests huge reserves (Table 5), and the current capacity accounts for only 10% of the total renewable energy [42].

Table 5. Renewable energy (RE) capacity in Vietnam

CAP (MW)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total RE	172.518	172.518	172.518	189.490	214.490	240.490	240.490	336.490	335.990	335.990
Total capacity	10 241	13 713	14 901	15 263	15 263	17 485	18 214	18 711	23 722	35 649
Win energy	31	31	53	53	136	160	205	237	375	600
Solar energy	5	5	5	5	5	5	8	105	4898	16504
Bioenergy	125	125	125	136	161	188	192	380	380	380
Solid biofuels and renewable waste	125e	125e	125e	136e	161e	186e	190e	378e	378e	378e
Bagasse	125e	125e	125e	125e	150e	174e	174e	353u	352e	352e
Renewable municipal waste						1u	5u	15e	15e	15e
Other solid biofuels				11u	11u	11u	11u	11u	11e	11e
Biogas						2e	2e	2e	2e	2e

Source: International Renewable Energy (RE) Agency (2020) [42]

Accordingly, Vietnam has the enormous potential to expand renewable energy when the current capacity is many times lower than the total renewable energy.

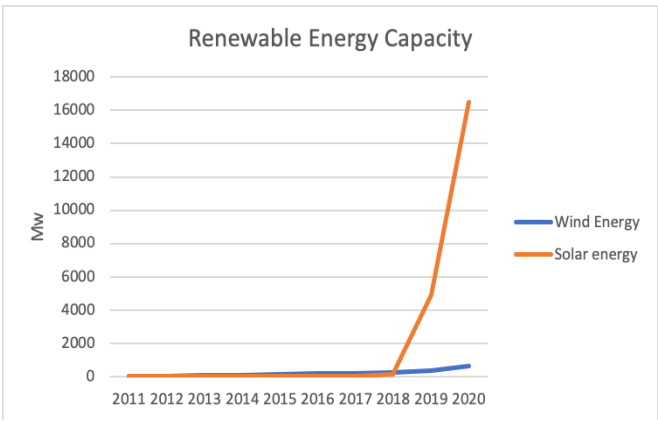

Figure 5. The renewable wind energy and solar energy capacity in Vietnam
Source: International Renewable Energy (RE) Agency (2020) [42]

5.2 Sustainable use of ecosystems

A handful of policies about organic development have been launched over the past few years. Specifically, Organic Decree 109 was issued in 2018, Circular 16 Guiding Decree in was issued in 2019, and most recently the National Organic Development Program for 2020-2030 was released in June 2020 [14]. After 3 years, organic agriculture has developed significantly as shown in Figure 6. During the past 10 years, the organic agricultural land area increased roughly 3 times in 2021 compared to 2010, together with the organic share of farms and producers.

Due to the emergence of Participatory Guarantee Systems (PGS), organic certification schemes have been approved. Despite positive attainments, organic production is still limited, and small scale when the organic share of farms is only 0.6%. The products are mostly exported to the United States, and Europe, while the domestic market demand is rising. Consequently, organic development can be probable to expand tremendously in both domestic markets and exporting.

Additionally, the State of Forests and Forestry has been observed in 10 recent years displayed in Figure 7. Positively, total forest areas extend remarkably, this leads the forest cover rate reaches to 42% in 2022. The reason for the increase in forest area is mainly planted forest, from 3.23 million in 2011 hectares to 4.656 million hectares in 2022. As a result, Vietnam's forests have the potential to create about 50 - 70 million tons of carbon credits. This helps Vietnam be on the way to reaching the goal of conserving biodiversity and

ecosystems. As presented in Figure 7, there is no data for the newly planned forests in 2019, and by 2022, the forest area should be boosted progressively over the next time.

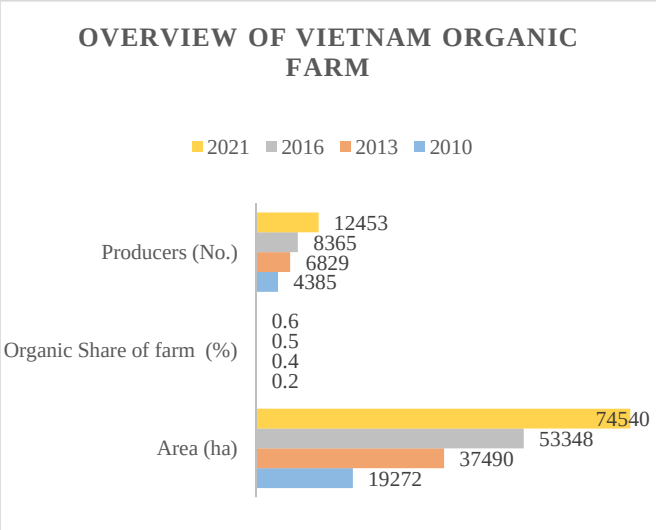

Figure 6. Vietnam organic development
Source: Research Institute of Organic Agriculture (FiBL) survey 2021, 2016, 2013, 2010

Regardless, Vietnam also has enormous potential for providing a large carbon tank because of the considerable size forest. Additionally, developing organic farms has not been paid attention to much while agriculture is the key area of economic development.

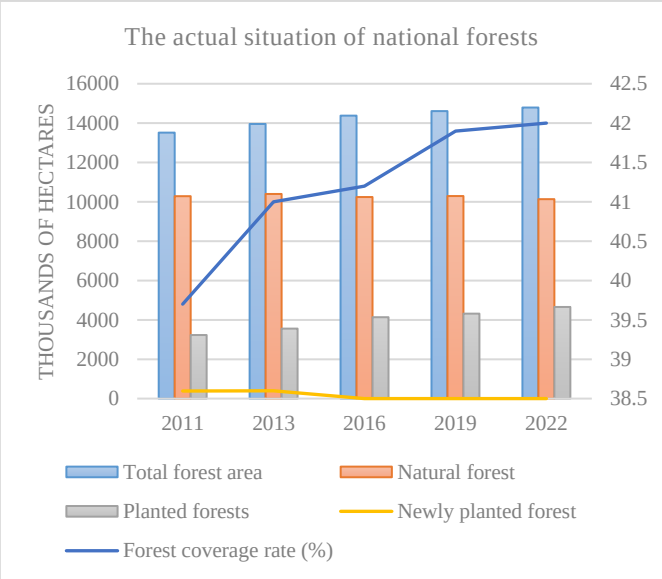

Figure 7. States of Vietnam forest
Source: GSO VN

6. DISCUSSION AND PROPOSAL FOR POLICYMAKERS

6.1 Discussion on the gaps and challenges in sustainable development in Vietnam

In general, as the poverty rate has still not dropped to zero, the government finds it difficult to remove poverty from poor districts. Some may fall back into poverty, and the majority are from ethnic minorities. These people live in mountain and highland areas and have low levels of awareness and education. Besides, arable land has apparently not changed, and the lack of productive land means they have no resources to make a living. Despite supportive policies, they remain scattered, and uneven in localities. Consequently, the poverty return rate is relatively high. Similar issues occur in terms of freshwater and sanitation, and gender equality due to the lack of equal policy support.

With the goals of applying clean technology for energy consumption and environmental pollution; and improving the green sector, environmental industry sector, and waste recycling sector, a large number of enterprises have put new technology in their operation, either another. It also included retail businesses and craft villages. This is a difficult-to-make statistic. It leads to missing data, and there is an essential requirement for researchers who should perform studies on this topic.

In a sustainable environment, Vietnam still has not achieved the targets for Cleaner Production. The reasons are low awareness of businesses, techniques, investment capacity, and policies, especially because this happens at the province level.

6.2 Recommendations for the policymakers

- The government needs to connect the policies at the provincial, commune, and regional levels. Financial support could be directed more toward remote areas and smallholders. The improvement of support policies for newly graduated students should include returning to their hometown or distant region to help develop the region.
- Prioritize and support foreign investment partners that adopt cleaner production, green technology, and waste recycling. It is easier for these businesses to set up machinery systems and technicians from scratch. Besides, financial support policies for small- and large-scale domestic businesses, including support for installation and replacement of machinery, tax reduction, and product distribution, also need to be promoted.
- Garbage classification should be a mandatory activity in comprehensive households, individuals, companies, and factories. Mechanical–biological treatment facilities will support solid waste management.
- The promotion of policies for community tourism is also required to both protect the environment and bring many livelihoods to indigenous people.
- Green foreign direct investment (FDI) should be given more development conditions in Vietnam. Particularly, businesses using raw materials from local sources should be encouraged, and imported resources should be restricted.
- Facilitate, promote, and seek non-governmental organizations to develop sustainable development projects in Vietnam with funding from foreign organizations.
- Besides policies to expand renewable energy, technology, and electricity transmission systems need to be upgraded to avoid overloading the national grid, energy loss, and waste of resources.
- The area of organic agricultural land conversion as it takes time for the land to be ready for organic farming. Moreover, the government should support the raising of awareness and the production of organic output. These countries are concerned about the high cost of organic farming and unstable product output.
- The increase in new forest planting areas should be

promoted, focusing on protective forests, and reserve forests, restricting the impacts of climate change on rice cultivation in Mekong Delta, Vietnam. Sustainability (Switzerland), 12(22): production of forests that are exotic forest trees (for example: Acacia forests damage the soil quality, but they are common in the central and southern of Vietnam).

7. CONCLUSION

Vietnam is striving to embark on the SD program primitively. As a result, Vietnam has achieved vivid accomplishments including MPI, gender equality, fresh water, and sanitation, which decreased significantly in 2021 compared to 2010. Nonetheless, this is unsmooth throughout Vietnam. Differently, poor achievements are witnessed in ethnic minorities, the Northern mountainous region, and the Central Highlands.

In the economy, there is a lack of SCP data and Vietnam has great potential for solar energy development. Notwithstanding, the current solar energy capacity is hardly 10% of the total potentiality. Besides, Vietnam is experiencing hardship with the effects of climate change, pollution, and solid waste management, … Vietnam has no goals yet to implement SD. Nevertheless, Vietnam is promising in the carbon sink, organic farming that helps reduce environmental problems that need more attention from the researchers and authorities.

Scientific findings demonstrate conclusively the present context of Vietnam. There are characteristic obstacles on the circuit toward SD. There are gaps between national policy and the provincial level. Partially, the economy of Vietnam is largely dependent on imported resources.

This might result in intermittent production accompanied by poor management, technology, and restricted resources. The studies show prospects for sustainable tourism development as Quang Nam is a typical illustration. Thanks to the convincing research results, there are valuable recommendations for policymakers. Furthermore, the government should put a growing awareness of a strong network of policies between national and provincial levels. There might be an encouragement for the graduated student to spread their knowledge, and skills to the remote areas or rural areas.

Distinctly, policy incentives need to be concretized in the small-scale, individual households in agriculture. Collaboration is the most important part to be stimulated in sustainable tourism. Recurrently, green foreign direct investment (FDI) is motivated to pursue environmental sustainability and mechanical–biological treatment facilities as an effective method for municipal solid waste management.

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