



The State of Gender Equality and Climate Change in Viet Nam

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Foreword

Gender equality is an integral component of effective climate change policies. Not only are men and women affected differently by climate change, but they also offer different, complementary capacities for solutions. Any comprehensive approach to fighting climate change will ensure that both gendered impacts and responses are mapped out and reflected in government policies and measures.

This is particularly important at present, when the COVID-19 pandemic has since set back some of development progress across the region. Asia and Pacific was already tackling challenges from rising seas, more frequent disasters and extreme weather due to climate change; now these pressures are further exacerbated by the economic slowdown brought by the pandemic. As countries gear up for a sustainable recovery, with one eye on the looming threats of climate change, bringing gender equality into climate plans will ensure that nobody is left behind.

The Government of Viet Nam, in the updated nationally determined contribution (NDC) in 2020, demonstrated that gender-responsive climate action was an important part of the country's approach to climate change. Their NDC, submitted in accordance with the Paris Agreement, incorporates a section on gender equality and social inclusion.

We are glad to present the State of Gender Equality and Climate Change Assessment Report that is a fresh attempt to analyze gendered impacts in key climate change adaptation and mitigation sectors included in Viet Nam's updated NDC, such as agriculture, renewable energy, and water and waste management.

The report identifies areas of progress and concern. Among the key challenges raised by policymakers are the missing links between gender equality and climate change priorities, including gender data deficiency. These gaps prevent policies from adequately addressing gendered vulnerabilities.

Prepared by the Institute of Strategy and Policy on Natural Resources and Environment, the UN Environment Programme, and UN Women, this report aims to help fill some of these gaps by sharing information on the status of gender mainstreaming, and planning out further policy work, capacity building, coordination, and research.

We hope this report will support Viet Nam's efforts to achieve its climate change goals inclusively. By incorporating gender equality in climate action, we can forge a path towards a truly sustainable recovery.



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Acronyms and abbreviations

(I)NDC	(Intended) Nationally Determined Contributions
ADB	Asian Development Bank
AMS	ASEAN member state
ASEAN	Association of South-East Asia Nations
BAU	Business as Usual
BPfA	Beijing Platform for Action
CEDAW	Convention on the Elimination of All forms of Discrimination Against Women
CO_{2e}	Carbon dioxide equivalent
CPV	Communist Party of Viet Nam
DPSIR	Driver, Pressures, State, Impact and Responses
EMPOWER	EmPower – Women for Climate Resilient Societies
GDP	Gross Domestic Product
GHG	Green House Gas
GoV	Government of Viet Nam
INGO	International Non-governmental Organization
IPCC	Intergovernmental Panel for Climate Change
MARD	Ministry of Agriculture and Rural Development
MoF	Ministry of Finance
MOIT	Ministry of Industry and Trade
MOLISA	Ministry of Labour – Invalids and Social Affairs
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
NAP	National Adaptation Plan of Viet Nam
NGO	Non-governmental Organization
NTP-RCC	National Targeted Program to Respond to Climate Change
SDGs	Sustainable Development Goals
SFC	Sustainable Forest Certificate
SIDA	Swedish International Development Agency
SMEs	Small and Medium Enterprises
UN	United Nations
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention for Climate Change
VNGO&CC	The Network of Vietnamese NGOs and Climate Change
VWU	Viet Nam's Women Union
WB	World Bank
WHO	World Health Organization

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Executive summary

Introduction

The Government of Viet Nam (GoV) recognizes the importance of having both women and men equally involved in tackling climate change and other environmental challenges. However, although the importance of gender mainstreaming into climate change related policies has been affirmed by leaders of the GoV in general, and the Ministry of Natural Resources and Environment (MONRE), in particular, inconsistency remains in its integration into climate strategies and action plans.

The most recent policy documents in Viet Nam related to climate change and disaster risk management (DRM), the National Target Program to Respond to Climate Change (2008) and the National Strategy on Climate Change (2011),¹ include gender equality as a guiding principle and objective, respectively.

The Law on Environmental Protection (2014) also stipulates the principle that “environmental protection must be applied in harmony with ... the promotion of gender and development ... and the response to climate change”. Moreover, at the time of writing, this Law is being revised to integrate gender into specific parts of the Law (MONRE’s informant, 2020).

Viet Nam has also made an international commitment to mainstreaming gender and women’s empowerment in responding to climate change. The recently updated Nationally Determined Contribution (NDC)² under to the United Nation Framework Convention for Climate Change (UNFCCC), submitted in September 2020, makes specific reference to gender in the context of climate change³.

This said, gender equality is not explicitly mentioned in some key climate change policy frameworks, including the National Action Plan for Climate Change (2011-2020) issued by the Prime Minister in Decision No. 1471/QD-TTg, and the Action Plan Responding to Climate Change for Natural Resource and Environment Sector.

Furthermore, while according to the Law on Promulgation of Legal Documents, gender integration in legal documents, particularly laws, is mandatory in Viet Nam - at the level of circulars (technical guidelines) that guide the law, there is no regulation on mainstreaming gender equality. This has led to a situation where gender strategies and action plans, in general, and gender equality, in particular, are often not implemented.

¹ Decision No. 2139/QD-TTg dated 5th December 2011 by the Prime Minister.

² Viet Nam is one of the top countries affected by climate change and its related natural disasters. Being aware of the negative impacts of climate change, Viet Nam has actively issued and implemented various climate change mitigation and adaptation policies and programs. In September 2020, the government of Viet Nam (GoV) submitted its updated Nationally Determined Contribution (NDC) to the United Nation Framework Convention for Climate Change (UNFCCC) with a target of reducing 9% of total greenhouse gas (GHG) emission by 2030 compared to business as usual (BAU) scenario.

³ “Climate change, increased natural disasters and climate extremes produce different impacts on women and men. While men are exposed to more risks due to their involvement in search and rescue operations, women are generally more vulnerable to health and socio-economic problems. Several negative impacts of climate change on women’s health include increased prevalence of diseases and epidemics, especially among pregnant women, girls, women with chronic diseases and elderly women”.

A sector-level review of gender equality and climate change in agriculture, water management, waste management and renewable energy further reveals that integration of gender into policy at the sector-level is inconsistent. Gender is either not explicitly addressed, or not considered at all, in the water management and renewable energy sectors; meanwhile, even in the agriculture sector, where both climate vulnerability and women's participation are high, gender is only explicitly addressed in one action plan. Across sectors, there is also an overall lack of guidance on gender mainstreaming and mechanisms for the monitoring and evaluation of gender integration.

Potentially related to this, the review found that women's participation in the setting of such policies is limited - and further constrained by structural barriers at the community level. Moreover, in some cases, such as in the waste management sector, issues relating to women's participation are not fully considered by the law.

Overall, implementation of gender strategies and action plans remains weak due to a combination of unclear policies, guidelines, and the capacity of officials in translating policy direction into specific actions - reflecting a lack of technical capacity at all levels. Further compounding this issue is the absence of relevant data, analysis and evidence on gender-related aspects.

Recommendations

Recommendations to improve gender-inclusiveness in Viet Nam's national and sectoral climate-related policies include:

- [A] Promoting awareness-raising and capacity-building among policy makers**
Awareness-raising and capacity-building on gender equality and women's empowerment aspects of climate change adaptation should be an urgent priority in all sectors, promoted by using both bottom-up and top-down approaches. This awareness will enable and encourage policy advocacy across all levels of all Ministries, thus supporting the achievement of political commitments, as well as possible financing for measures ensuring gender sensitivity in the response to climate change.
- [B] Developing, and promoting the application of, technical guidelines for gender mainstreaming into climate change policies**
Clear technical guidance on how to integrate gender aspects into climate policy should be provided to policy makers. The guidelines should be easy to use, and leverage and build upon any existing ones.
- [C] Conducting studies on the gendered impacts of climate change by sector and region, and identifying entry points through which to integrate gender into climate-related policies**
Further research on the gendered impact of climate change by sector and region should be conducted in order to provide policy makers with a firm basis upon which to design and implement gender-responsive climate policies. Identification of suitable entry points through which to mainstream gender into climate policies is also critically important.
- [D] Developing a monitoring and evaluation framework for gender integration into climate policies, and establishing a database of the gendered impacts of climate change**
A monitoring and evaluation framework should be developed, and a database established, to systematically track the integration of gender into climate policies, and to understand the gendered impact of climate change by sector and region, respectively.



Photo: UN Environment Programme/Peter Hammer

I. Introduction



Photo: UN Environment Programme/Duong Tri

1.1 Context of the study

Over the past 50 years, the average temperature in Viet Nam has increased by approximately 0.5°C, and the sea level has risen by about 20cm [3]. Extreme climate events have, in parallel, increased both in frequency and intensity, especially storms, floods and droughts.

By 2100, the annual average temperature in Viet Nam is expected to increase by 2-3°C, precipitation will increase in the rainy season and decrease in the dry season, and the sea level will rise between 80-100cm⁴. The areas most vulnerable to these changes will be the Mekong Delta⁵, the Red River Delta and the Central Coast, where not only ecosystems, biodiversity and water resources will be at risk, but also related sectors such as agriculture, public health and infrastructure. The poor, ethnic minorities, the elderly, women, children and people with disabilities will be among those who bear the brunt of the negative impacts of climate change. [4].

Climate change adaptation is vital for Viet Nam, and is regarded a priority by the Government [2]. However, while measures to prevent future losses from river floods, storm surges, saline water intrusion and drought are technically possible, to be effective, these would need to be implemented within the 21st century. Currently, this requirement exceeds the nation's financial resources.

The Government of Viet Nam (GoV) has developed a number of policies and strategies on climate change, particularly at the national level, to provide a framework for sectoral and local climate action.

Considerable literature on climate change impacts in national, regional and global contexts, has been produced and published worldwide, helping to inform national policy makers and providing them with recommendations for action. Examples include the reports of the Intergovernmental Panel on Climate Change (IPCC), and the ASEAN report on the State of Climate Change in ASEAN Region.

However, there are gaps in in-depth understanding of the country-specific inter-linkages between climate change and gender equality.

⁴ According to Viet Nam's climate change and sea level rise scenario (MONRE, 2016).

⁵ The Mekong Delta is among the world's most susceptible and vulnerable to sea level rise [1].

Practitioners are often guided by assumptions and generalizations, and face challenges in assessing climate vulnerabilities in a sex-disaggregated manner. At the same time, existing capacities and skills among men and women are not presented as potential solutions in addressing climate change. In the absence of the right data, analysis and evidence on gender-related aspects, countries remain limited in their ability to include and consider gender equality in the institutional and policy frameworks of climate change, in climate action design and implementation, and in reporting on progress to the Sustainable Development Goals (SDGs) and the Paris Agreement.

This study aims to contribute to strengthening country-driven processes through presenting more evidence on national-level linkages between gender equality and climate change, and analyzing the gendered impacts of climate change, specifically in the agriculture, water resources, and waste management and energy sectors.

These four sectors play an important role in Viet Nam and are included in the first Nationally Determined Contribution (NDC) as part of commitments in adaptation (agriculture and water resources) and mitigation (waste and energy)⁶.

The assessment also contributes to the implementation of Viet Nam's updated NDC and National Adaptation Plan (NAP) to climate change for the period 2021-2030, with a vision to 2050, through the inclusion of gender equality and gender considerations in designing and implementing activities to achieve proposed targets therein.

1.2. Scope, objectives and duration of the study

1.2.1 Scope and objective of the study

The study was conducted in Viet Nam and focuses on assessing the links between climate change impacts and gender equality in key sectors. Findings from this study will be used to inform policy makers and practitioners on the linkage between gender equality and climate change in these sectors, and more broadly at the national level.

Specifically, the objectives of this study are:

- (i) to provide an overview of the climate change framework, and gender integration into climate policies, in Viet Nam, in four selected sectors: agriculture and water management (adaptation), and energy and waste management (mitigation);
- (ii) to identify gaps and opportunities to include gender equality aspects into sectoral action-planning, in implementing NDC and NAP in Viet Nam.

In order to achieve the above objectives, this study answered the four following key questions:

1. What are the gendered impacts of climate change in the four selected sectors in Viet Nam?
2. To what extent have these gendered impacts been addressed through integration in the national and sectoral climate policies?
3. What are the challenges and opportunities to integrate/include gender considerations in future sectoral and national climate policies?
4. In what ways can gender mainstreaming into climate policy actions of selected sectors be enhanced and contribute to implementation of the updated NDC and NAP of Viet Nam?

1.2.2 Duration of the study

The study was carried out between 2 January 2020 and 31 March 2021.

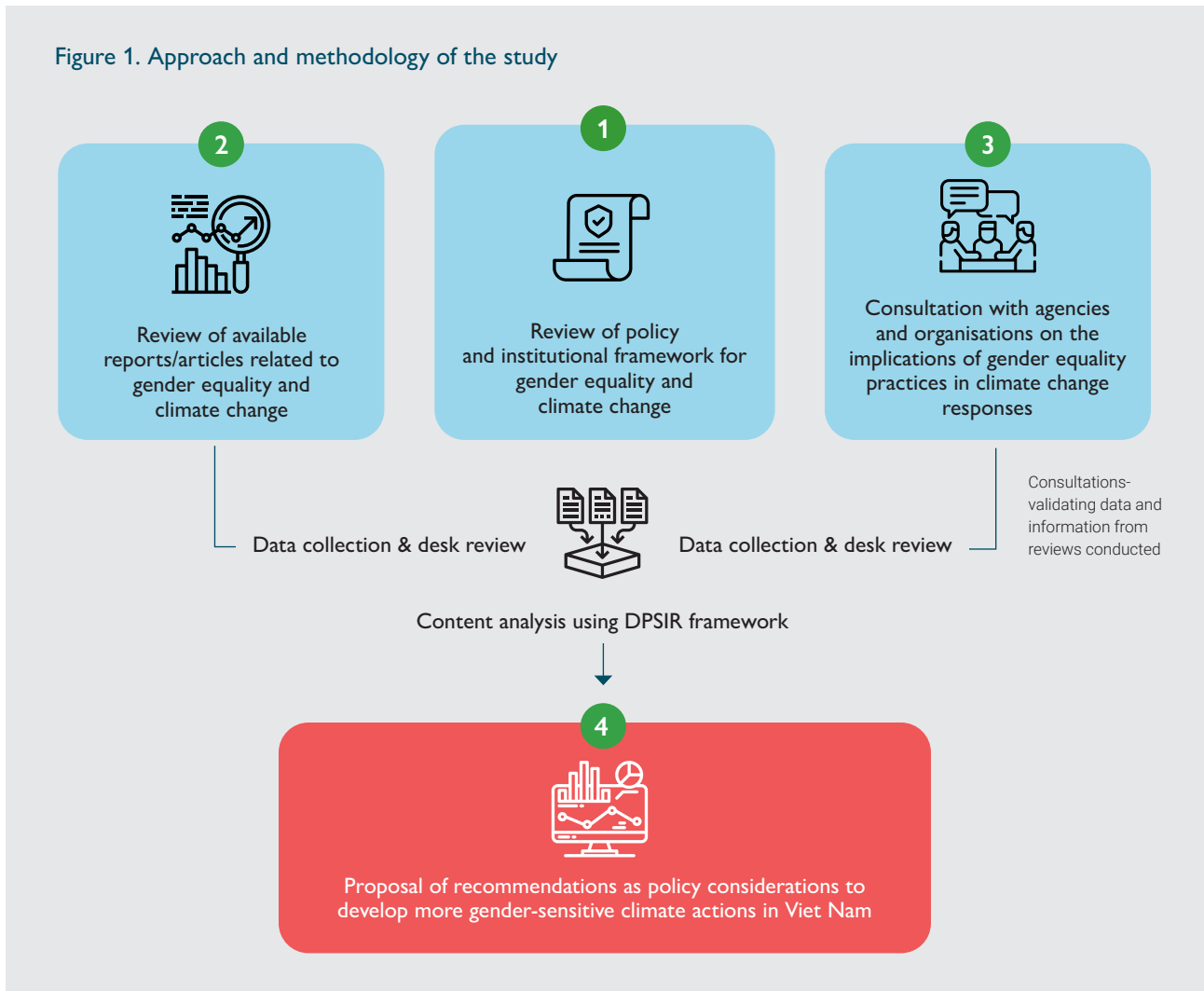
⁶ The adaptation component of the updated NDC of Viet Nam highlights impacts of climate change to sectors and regions. For example, monitoring data on water resources show that, in recent years, water flows at hydrological stations in major main river basins have been below average for several years. In many places, water levels have reached historic lows, causing water shortages for agricultural production and for people's daily use. It is also causing deeper saline intrusion into estuaries.

1.3 Approach and methodology

1.3.1 Study approach

In order to achieve the objective of the study (see section 1.2.2), the following approach and methods (Figure 1) were applied.

Firstly, the policy and institutional frameworks on gender equality and climate change were analyzed. Second, reports/articles related to gender and climate change, particularly in agriculture, water resources, waste management and energy sectors, were reviewed. Third, consultation meetings with representatives from relevant agencies on the implications of gender equality practices in climate change responses in the sectors were carried out in order to validate findings from the first and second steps; insight stories of gender integration into climate policies were also collected. Finally, recommendations were proposed as policy considerations to develop more gender-sensitive climate actions in Viet Nam, particularly relating to agriculture, water resources, waste management and renewable energy.



In this study, the Drivers, Pressure, State, Impact and Response (DPSIR) framework was applied to analyze gender integration in climate policies/actions of four sectors (agriculture, water resources, waste management and renewable energy).

While conducting the assessment, the DPSIR framework was redefined to fit the context, with the entry point for assessment being the state of integration of gender equality perspectives in existing climate policies at national and sectoral levels. The following key questions were fully or partly addressed for each sector:

1. **What is the state or trend (S) of gender equality in responding to climate change?**
 - [A] What is the current state or trend of gender integration in the specific sector?
 - [B] What is the intended or aspired state of gender integration in the specific sector?
2. **What are the pressures (P) responsible for the present state of gender equality and climate change?**
 - [A] What are the root causes and social forces exerting pressure on the present state (short-term)?⁷
 - [B] What are the external factors (outside of the scope of a specific sector) exerting pressure on the present state?
3. **What drivers (D) led to these pressures (P)⁸?**
 - [A] Economic situation and social norms.
 - [B] Long-term factors (from gender and social inclusion perspectives)
4. **What are the impacts and effects (I+E) on the present state of gender equality and climate change on society?**
 - [A] If we do not successfully integrate gender into the specific sectors, what will be the impacts or effects?
 - [B] How do the changes in climate affect women and men differently? What are the gendered vulnerability impacts?
 - [C] Are there gendered differences in the emissions profile?⁹
5. **What responses(R) or actions/policies (P)¹⁰ have been or should be taken?**
 - [A] Where are we heading in terms of policy work aimed at gender integration in the sector?
 - [B] What are the recommendations for policy work that will put women and men on an equal ground or establish them as equal agents in this sector?
 - [C] What research work on gender integration is still required to address the revealed gaps?
 - [D] What socio-economic factors will shape different outcomes and resources and should be taken into account? What is the gender sensitivity of the actions/policies?

⁷ Root causes may include political, economic, social, technological, environmental and legal factors.

⁸ Drivers may be common or similar across sectors.

⁹ For the mitigation sector only.

¹⁰ This should help reduce the gap between the intended or aspirational state and the current state.

1.3.2 Study methods

In order to address the above four research questions, the following study methods were adopted:

A. Desk reviews

Desk review was used to identify the gendered impacts of climate change in the four selected sectors, and the existing level of integration of gender equality into Viet Nam's institutional setting and policies relating to climate change.

Documents reviewed comprised (1) legal and policy documents on gender equality in Viet Nam; (2) Viet Nam laws and policies on climate change, particularly in the selected sectors; and (3) relevant documents and studies of international organizations and government agencies.

The institutional setting and policy framework for gender equality and climate change were also reviewed to understand the policy making process and possible entry points for mainstreaming gender considerations into climate policy formulation and implementation in Viet Nam.

B. Stakeholder consultations

First consultation meeting. In the first consultation meeting, participants from the General Statistical Office (GSO) and Non-Governmental Organisations (NGOs) indicated their concerns on gendered climate change impacts. Ways to include gender consideration into the future development plans of the selected sectors, as well as in the implementation of the updated NDC and NAP of Viet Nam, were also discussed.

Inception workshop. At the inception workshop held in February 2020, gender experts and representatives from GSO, Ministry of Labour – Invalids and Social Affairs (MOLISA) and Viet Nam's Women Union (VWU) all shared that data on the gendered impacts of climate change are limited, and that there may be a need for more studies to generate such data.

Other consultation meetings and communications. A number of consultation meetings and communications also took place with key stakeholders (10 representatives from agriculture, water resources, waste management and renewable energy sectors, GSO, NGOs and relevant experts), both virtually and in-person, to discuss gender issues and actions undertaken to incorporate gender considerations into sectoral development plans, particularly as they related to climate action.

Other participants involved in this study included academia and experts from research institutions and universities who provided input on how to integrate gender considerations into climate policy formulation and implementation at the national level, particularly in the four selected sectors.

Stakeholder consultations were also used in the assessment process and during the finalization of the final report in order to identify challenges and opportunities to mainstream gender into climate change-related policies in the selected sectors, and particularly in the implementation of NDC's sectoral priorities. These consultations were used to validate information and data from desk reviews, and to collect participatory recommendations for improved gender integration into future climate change policies.

C. Peer review and technical workshop

The draft assessment report was shared with relevant persons - in particular, climate change and gender policymakers and practitioners - for peer review, and a technical workshop was organized to collect feedback, comments, and suggestions for improving the study quality and validating the findings presented in the final report.



Photo: UN Environment Programme/Jack Young

1.3.3 Limitations

There were a number of limitations and challenges encountered during the course of this study. These included:

- Lack of availability of data. There was a lack of general and national statistical datasets on the gendered impacts of climate change in specific sectors, and the linkages between climate policy objectives and actions taken on the ground.
- Restrictions imposed by the Covid-19 pandemic. Limited time and information sources may have led to the exclusion of other aspects related to the impact of climate change on gender equality. In particular, during the period in which this study was undertaken (January 2020 - March 2021), the Covid-19 pandemic in Viet Nam and the region prevented direct interaction between the research team and EmPower project team; also, interviews with key stakeholders, at times, had to be conducted online.
- Limitations of the DPSIR framework. The DPSIR framework has previously mainly been applied in environmental management studies. Being newly-applied to a gender study, the team encountered challenges in understanding the linkages between drivers, pressures, states, impacts and responses of, and to, gender equality in responding to climate change. In addition, identifying the entry points from which to assess the state of gender equality and climate change was also challenging.



II. National context of Viet Nam

2.1 Socio-economic development

Viet Nam is one of the fastest growing economies in the world. The accelerated economic pace is due to labor shifting from agriculture towards manufacturing and services, private investment, a strong tourist sector, higher wages in non-agriculture sectors, and accelerating urbanization. Exports also constitute an increasingly significant contribution to Viet Nam's GDP, and certain sectors, such as industrial production, textile, electronics and seafood production have been growing rapidly. Notwithstanding this, labor costs remain competitive, which continues to attract foreign investment into the country.

The latest data released by the World Bank shows that agriculture sector accounts for 39.4% of employment, with industry and services accounting for 25.8% and 34.7%, respectively – but that the most value added to GDP is contributed by services at 45.5%, compared to 14.7% contributed by agriculture. The industry sector, however, is the fastest growing, achieving growth of 8.9% compared to 7.0% in the service sector (Table 2).

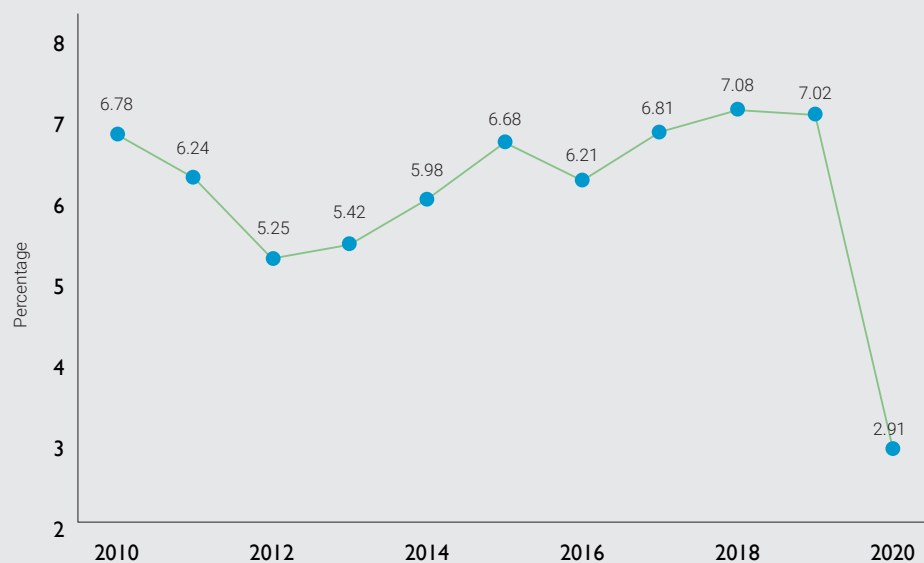
The unemployment rate in Viet Nam is low, at 2.2% in 2019 (GSO, 2020), and is expected to remain stable in the following years (Table 1).

Overall growth was expected to reach 7% in 2019, down from a 10-year high of 7.1% a year earlier. According to International Monetary Fund (IMF) forecasts as at 14 April 2020, due to the outbreak of COVID-19, GDP growth was expected to fall to 2.7% in 2020 and pick up to 7% in 2021, subject to the post-pandemic global economic recovery. The actual GDP growth rate of Viet Nam in 2020 was 2.91% (Figure 2), which was higher than the forecast of the IMF.

Viet Nam's gross national income (GNI) per capita increased by 354.5% between 1990 and 2020 to reach \$US 7,433 (constant 2017 purchasing power parity).

Despite impressive economic growth, however, challenges remain in ensuring inclusive economic development, particularly with regard to gender equality, and narrowing the income gap between the rich and poor. Other structural issues include deficiencies in infrastructure, lagging public sector reforms, a weak banking system, and an overall challenging business climate. Unaddressed, these will hinder the achievement of the Sustainable Development Goals (SDGs).

Figure 2.
GDP growth of
Viet Nam in period
of 2010-2020



Source: VnExpress International, 2020

Table 1. Viet Nam's key economic indicators in 2017-2021

Main Indicators	2017	2018	2019	2020 (e)	2021 (e)
GDP (billions USD)	220.38e	241.27e	261.64	284.85	308.63
GDP (Constant Prices, Annual % Change)	6.8	7.1	7.0	2.7	7.0
GDP per Capita (USD)	2,353e	2,551e	2,740	2,955	3,172
General Government Gross Debt (in % of GDP)	58.223e	55.562e	54.346	53.341	52.505
Inflation Rate (%)	3.5	3.5	2.8	3.2	3.9
Current Account (billions USD)	4.68	5.84e	5.73	5.44	5.27
Current Account (in % of GDP)	2.1	1.9	4.0	0.7	1.0

Source: Retrieved from ADB's website (2020)
Note: (e) Estimated Data

Table 2. Viet Nam's sectoral indicators

Breakdown of Economic Activity by Sector	2017	2018	2019
Employment by sector (in % of Total Employment)	39.4	25.8	34.7
Value added (in % of GDP)	14.7	34.2	45.5
Value added (Annual % Change)	3.8	8.9	7.0

Source: World Bank – 2020 (Latest available data).

Gender in socio-economic development

Literacy, Education and Training

Viet Nam has made remarkable progress in eradicating illiteracy and providing universal education, with national statistics indicating almost gender parity in the attendance of girls and boys in general education [8].

The literacy rate of the population aged 15 years and above is 95% on average (female 93.6% and male 96.5%), which is largely due to the implementation of literacy programs and reduced gender inequality in terms of access to education, as stipulated in the Action Plan on Gender Equality in Education 2016-2020.

In recent years, global data has shown that there has also been improvement in women's enrolment and attainment in tertiary education. Currently women's enrolment in tertiary education is 31.7% higher than that of men, at 25.5%. However, women's participation in science, technology, engineering and mathematics (STEM) education is less than half of that of men's (15.38% vs. 31.19%). This is reflective of the traditional expectations impressed upon girls and boys when it comes to choices regarding course of study or occupation.

Similarly, women often choose vocational training programs that lead to traditionally women-dominated occupations, such as nursing, garment factory workers, precluding them from developing career prospects in non-traditional and emerging roles and other economic opportunities [10]. Finding job opportunities in climate change and the digital economy may require a change in traditional perspectives on possible career paths.

Health

Viet Nam has undertaken enormous efforts to ensure universal access to reproductive and sexual health services and improve maternal health care services. This has resulted in the successful achievement of the Millennium Development Goal 5 - MDG5 (Improve Maternal Health), with a 75% reduction in the maternal mortality rate in 2015 compared to 1990. This serves as baseline data for implementing Sustainable Development Goal 3 - SDG3 (Ensure Healthy Lives and Promote Well-Being for All at All Ages).

However, the gap in maternal mortality rate between regions and socio-economic groups remains a concern. The maternal mortality rate for ethnic minority women, such as those living in the remote areas of Dien Bien and Lai Chau provinces, is four times that of Kinh women, the biggest ethnic group in Viet Nam. In addition, some groups of women, including unmarried young women, migrant women, and those living in remote areas, have limited access to family planning services and higher education systems. The gender roles and unequal power relations between men and women further enable male partners to prevent women from using contraception. As a consequence, there is a rising trend in the adolescent pregnancy rate. More than 6% of girls aged between 15 and 19 give birth, which poses risks both to their health, as well as their futures as a whole. [11].

2.2 Population

Viet Nam ranks the 15th in the world, and the 3rd in the ASEAN region (after Indonesia and the Philippines), in terms of total population.

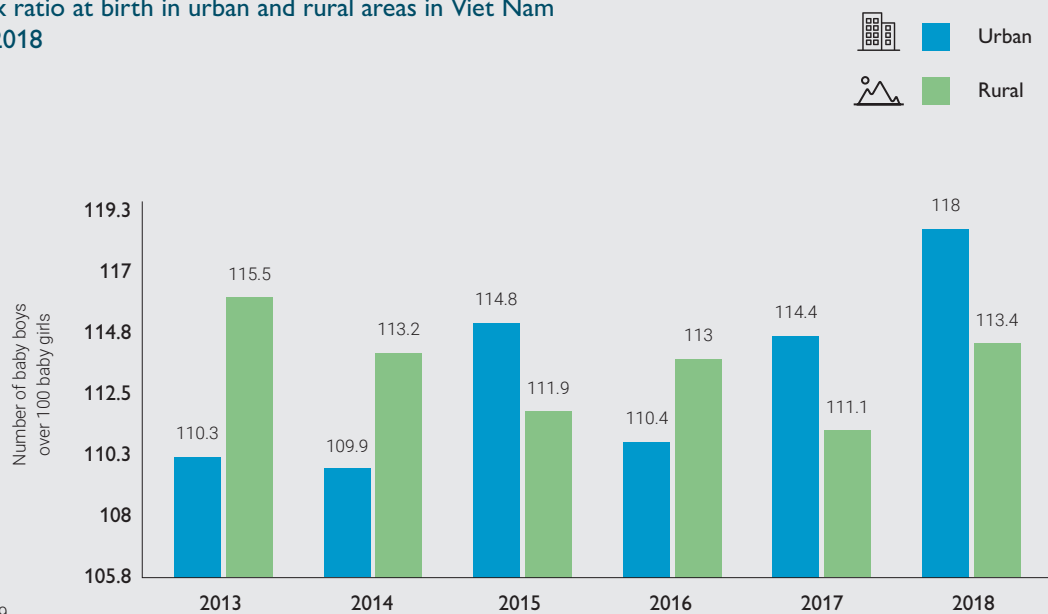
The population in 2019 was 96,208,984 (48.3% women and 47.9% men), with a growth rate of 1.06% nationwide. The urban population accounts for 34.4% of the total population, with Hanoi and Ho Chi Minh city being the most populated cities in the country, with a population density of 2.398 people/km² and 4.363 people/km² respectively [8]. According to the Statistical Year Book released by the GSO in 2020, during 2009–2019, there was an increase of 10 million people to Viet Nam's total population.

The fertility rate in Viet Nam has been quite stable (2.1 in 2013, 2.04 in 2017, 2.05 in 2018, 2.049 in 2019 and 2.041 in 2020) [12]. According to UN Projections, this stability will remain until 2050 [13]. The Viet Nam Population's Strategy by 2030 issued by Decision No.1679/QĐ-TTg in 2019 aims to grant all women of childbearing age access to modern contraceptives and services that would prevent infertility and promote reproductive health. The strategy established 8 goals, including having a fertility rate of 2.1 and gender balance of 109 boys per 100 girls at birth [14, 15].

Sex ratio at birth

The imbalanced sex ratio at birth (SRB) is a demographic challenge and policy issue in Viet Nam. The SRB rose from an estimated 106 male births per 100 female births in 2000 to 113.8 in 2013. From 2014 to 2017, there was a slight reduction, but it again increased to 114.8 in 2019. The increase in SRB occurs in both rural and urban areas, but has been more dramatic in urban areas [12]. The data in Figure 3 show that there are more boys than girls born in both urban and rural areas in Viet Nam.

Figure 3. Sex ratio at birth in urban and rural areas in Viet Nam from 2013-2018

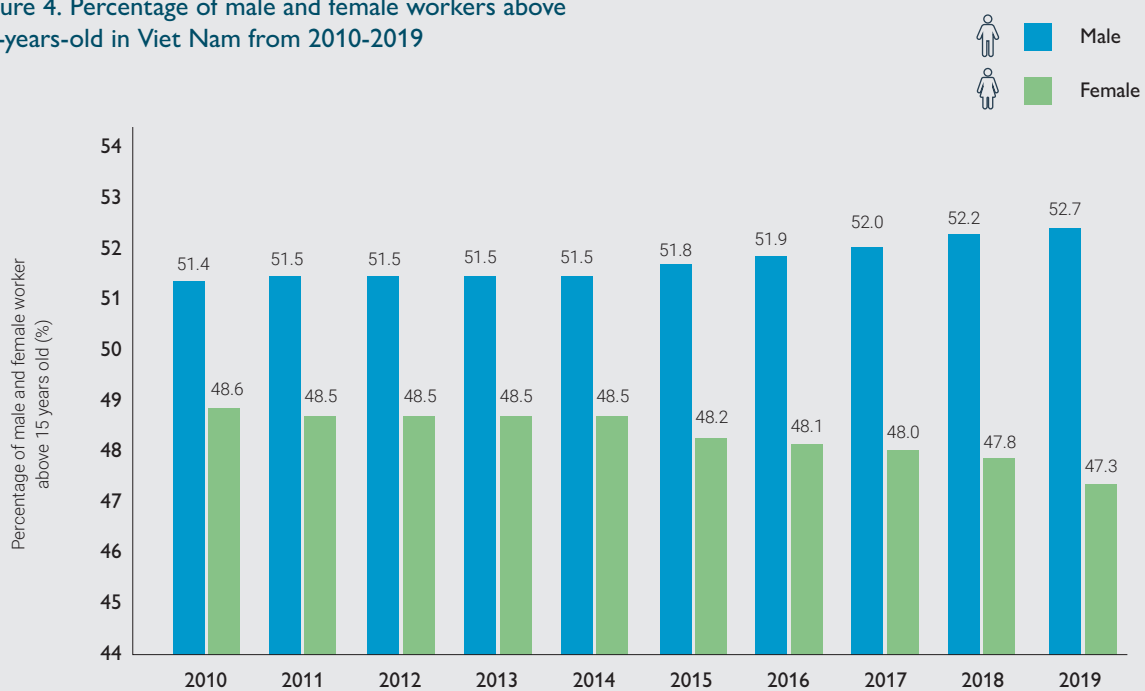


Source: GSO, 2019

In 2018, the increase was even more striking in certain regions, including the North Central and Central Coastal areas, Central Highlands, and South East, with the South East region recording the most imbalanced SRB in Viet Nam [12]. Prior to this, the Red River Delta, Mekong River Delta, and Northern Midlands and mountainous regions had higher SRBs than others.

There are three main reasons for the unbalanced SRB in Viet Nam, namely: 1) the preference for sons; 2) sex selection technology; and 3) low fertility.

Figure 4. Percentage of male and female workers above 15-years-old in Viet Nam from 2010-2019



Source: GSO, 2020 [8]

Gender and life expectancy

According to Viet Nam's Statistical Year Book 2019, on average, people born in 2019 are expected to live to 73.6 years; however, female life expectancy (76.3 years) is significantly higher than that of males (71.0 years). This is not significantly different from the life expectancy rate in 2009, when the average life was 73.5 years (76.2 for women and 70.9 for men).

With the low fertility rate of 2.07 %, Viet Nam will soon grapple with an ageing population [8]. Viet Nam entered the aging stage in 2011, and is predicted to become a country with a very old population by 2038, when the percentage of people aged 60 or over will exceed 20% [16]. It is expected that elderly Vietnamese will account for a quarter of the population by 2049,¹¹ and that this will result in the country experiencing an "elderly population crisis".

¹¹ According to the General Office for Population and Family Planning, Viet Nam.

2.3 Employment

Figure 4 shows that in 2019, there were relatively more male workers in the labour market, as compared to 2010 - likely making it more challenging for female workers to find decent jobs. The relative percentage of female and male workers above 15 years old in 2010 was 48.6 and 51.4, respectively, while in 2019, these numbers were 47.3 and 52.7, respectively.

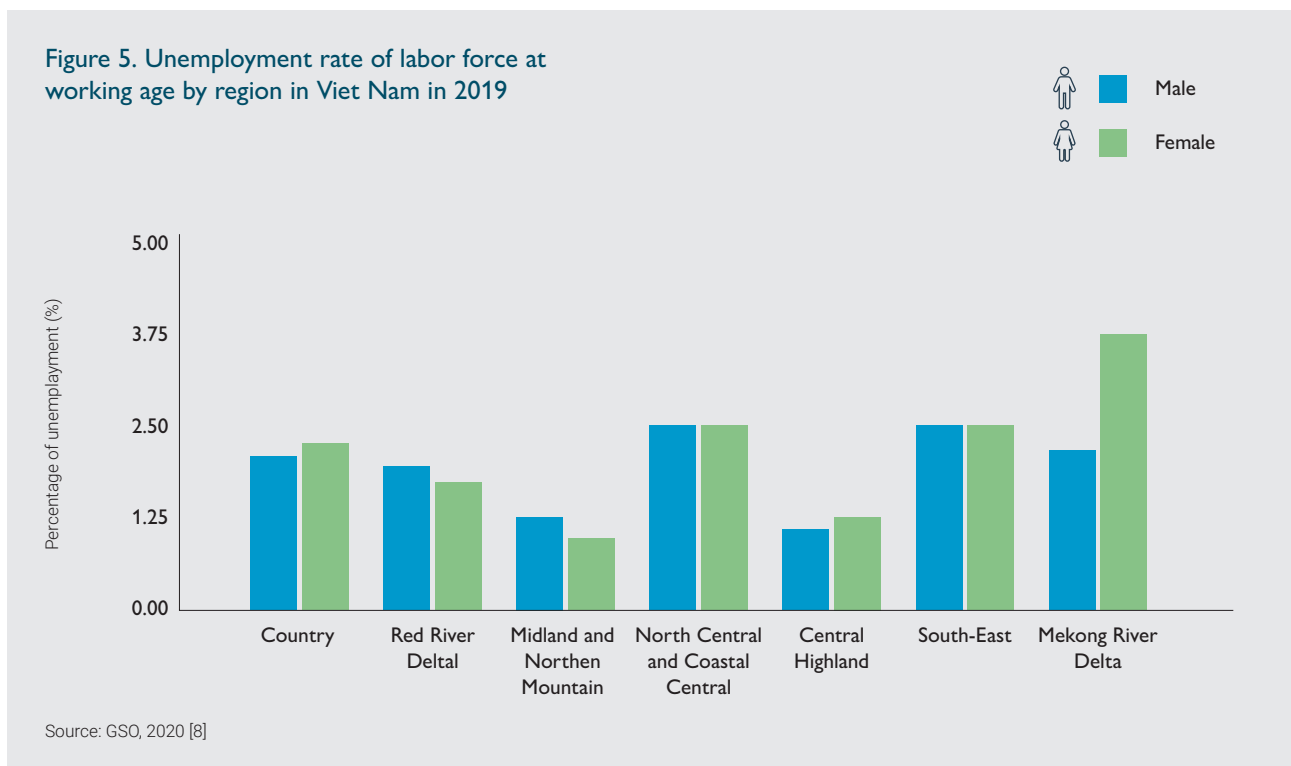


Figure 5 shows that in Viet Nam, the unemployment rate in the female population is just slightly higher than in the male population. However, the unemployment rate amongst females in the Mekong Delta region is much higher than that amongst males [8].

In Viet Nam, labour force participation rate is 79.1% female and 86.4% male. Every year only 48% of women entering the labour force find jobs [11], and gender gaps remain when it comes to compensation (in 2015, the average income of a man was at least 10.1% higher than that of a woman with the same qualifications). Furthermore, the salary of men with vocational training is 15% higher than those of women with the same level of education.

Women make up 60% of the agricultural labour force, but only 9% of them are farm owners, due to their limited access to resources and discriminatory practices relating to land use rights. According to the World Economic Forum (WEF), women own only 19.3 % of Vietnamese businesses [9]. The same pattern is evident amongst the top-level management of firms, where 22.4 % are women and 77.6% are men.



2.4 Gender equality in Viet Nam

Viet Nam has been praised for its achievement of gender targets and the strong commitment of the Government to promote gender equality and women's empowerment. Such efforts have paid off with improved rankings in several global indices, including the Human Development Index, the Gender Development Index, and the Gender Inequality Index.

Human Development Index (HDI): The HDI measures progress in standard of living, health and education. In 2020, Viet Nam's Human Development Index (HDI) was 0.704, increased from 0.475 in 1990 [18, 19]. Viet Nam ranks 117th out of 189 countries and territories, and falls in the medium human development category.

Gender Development Index (GDI): The GDI was first introduced by the Human Development Report Office (HDRO) in 2014, based on the sex-disaggregated Human Development Index, and was calculated for 166 countries. The GDI measures gender inequalities in achievement in three basic dimensions of human development: health (measured by female and male life expectancy at birth), education (measured by female and male expected years of schooling for children and mean years for adults aged 25 years and older) and control over economic resources (measured by female and male estimated GNI per capita). The 2020 female HDI value for Viet Nam is 0.703 in contrast with 0.705 for males, resulting in a GDI value of 0.997, placing it into Group 1¹². In comparison, GDI values for Philippines and Thailand are 1.004 and 0.995 respectively [19].

Gender Inequality Index (GII): The 2010 HDR introduced the GII, which reflects gender-based inequalities in three dimensions – reproductive health¹³, empowerment¹⁴, and economic activity¹⁵. Viet Nam has a GII value of 0.314, ranking it 68 out of 162 countries in the 2018 index. In Viet Nam, women hold 26.7 percent of parliamentary seats, and 66.2 percent of adult women have reached at least a secondary level of education compared to 77.7 percent of their male counterparts. For every 100,000 live births, 54 women die from pregnancy related causes; the adolescent birth rate is 30.9 births per 1,000 women of ages 15-19.

¹² As identified by UNDP, Group 1 comprises countries with high equality in HDI achievements between women and men (absolute deviation of less than 2.5 percent).

¹³ Reproductive health is measured by maternal mortality and adolescent birth rates.

¹⁴ Empowerment is measured by the share of parliamentary seats held by women and attainment in secondary and higher education by each gender.

¹⁵ Economic activity is measured by the labor market participation rate for women and men.

Gender Gap: The Global Gender Gap Index was first introduced by the WEF in 2006 as a framework for capturing the magnitude of gender-based disparities and tracking their progress over time. The index benchmarks national gender gaps on economic, education, health and political criteria. According to the Gender Gap Report 2020, Viet Nam ranked the 9th in the East Asia and the Pacific (20 countries) and 87th out of 153 countries - indicating that Viet Nam has bridged 70% of its gender gap [9].

Gender-based Violence: Gender-based violence (GBV) remains a pressing issue in Viet Nam, as traditional beliefs play a significant role in the construction of gender identities, while the patriarchal system allows men to commit violence against their female partners. The prevention and addressing of GBV has not been as effective as expected due to challenges to policy implementation. These include insufficient coordination, financial resources, lack of capacity of relevant stakeholders, inadequate strategic monitoring and limited collaboration between service providers and projects [17].

The GoV has taken important steps to ensure that legislation supports gender equality by ratifying CEDAW in 1982. The GoV approved the Law on Gender Equality (2006) and the Law on Marriage and Family (2000); in addition, the constitutional reform process (2013) enshrined the prohibition of discrimination between men and women. The Law on Domestic Violence Prevention and Control came into effect in 2008 as one of the most proactive measures taken towards ending many forms of GBV at home. A number of programs and projects on GBV have also been implemented nationwide, including the Program for Prevention and Response to Gender-Based Violence (2016-2020) and Vision to 2030; the National Action Plan on Prevention of Domestic Violence (2014-2020); the Project on the Reduction of Domestic Violence in Rural Areas of Viet Nam (2015-2020); the Annual Plan to Minimize Teen Marriage and Consanguineous Marriage in Ethnic Minorities in 2018; and a program to support gender equality among ethnic minorities in 2018-2025 [11].



Photo: UN Environment Programme/Danh Vo

BOX 1:**Gender-based violence facts and figures**

- In 2019, 62.9% of women experienced at least one or more forms of violence (physical, emotional, sexual, etc.) committed by their husbands in their life time
- Nearly 1/10 of women's injuries requiring medical treatment are caused by physical and/or sexual violence committed by their husbands or partners
- Women experiencing physical and sexual violence are likely to have a 30.8% reduction in their annual income compared to women not experiencing violence
- Viet Nam experiences a productivity loss equivalent to 100,507 billion VNDs, equivalent to 1.81 per cent of 2018 GDP, due to physical and/or sexual violence experienced by women aged 15 to 64 who are married or have partners
- Most women (90.4%) who experience physical and/or sexual violence committed by a husband or partner do not seek help from formal services or authorities

Source: MOLISA, GSO, and UNFPA (2020).

Women's political participation: Vietnamese women's participation in political life remains very low compared to that of men (26.7% female vs. 73.3% males of parliament members). This is higher than the average rate of 19% for Asian countries, and the global average of 21%, but far from achieving the target set in the National Strategy for Gender Equality (2011-2020) of 35%. Only 4% of women hold ministerial positions. According to the Global Gender Gap Report 2020 prepared by the WEF, in Viet Nam, there is only one woman in the cabinet of 25 ministers – one the world's lowest ratios [9]. Women's representation in People's Councils at lower levels has, however, increased during the 2016-2021 term. According to a report prepared by Viet Nam Women's Union in 2016, women account for 26.42% at the provincial level, 27.51% at the district level and 26.7% at the commune level. In general, women's involvement in lower levels of administration is higher than at the national level.

Although Viet Nam's legal frameworks for protecting women's human rights and promoting gender equality are significant, GBV remains prevalent as a result of a patriarchal culture of devaluing women's and girls' lives, contributions and roles in socio-economic development in the household and community. Box 1 presents key facts and figures on GBV in Viet Nam.

Socio-economic status contributes to the vulnerability to, and/or perpetuation, of GBV, influencing as it does peoples' perceptions of gender roles – and, in turn, access to information, educational opportunities, services (e.g. healthcare and social services), and even legal literacy (police and justice sectors). GBV and gender-biased sex selection share the common root of patriarchal norms and negative interpretations of masculinity based on physical strength, authority, and dominance [17]. Marrying too early also ultimately prevents both young girls and boys from opportunities to pursue higher education and training. Despite the numerous efforts to eliminate child marriage and all forms of GBV, early marriage is still obvious in rural, mountainous and remote areas, particularly amongst ethnic minority people [22].

Overall, Viet Nam has improved gender equality and gender inclusion in socio-economic development. In the context of climate change, however, more effort and investment are required to ensure that gender achievements will be maintained and improved in the coming period.



UN Environment Programme/Casey Nguyen

2.5 Impacts of climate change in Viet Nam

Viet Nam is one of the countries most severely affected by climate change and related disasters. The Mekong Delta is among the world's most susceptible to sea level rise; as such, climate change adaptation and vulnerability reduction is vital for Viet Nam, and are regarded by the Government as its key priorities [23].

Over the past 50 years, the average temperature in Viet Nam has increased by approximately 0.5°C and the sea level has risen by about 20cm. Extreme climate events - especially storms, floods and droughts - have increased both in frequency and intensity [24].

According to Viet Nam's climate change and sea level rise scenario assessment, by 2100, the annual average temperature in Viet Nam is expected to increase by 2-3°C; precipitation will increase in the rainy season and decrease in the dry season; and the sea level will rise between 78-100 cm [24]. Under a RCP 4.5 scenario, the average maximum temperature will experience a relatively larger increase in the North, and is expected to rise even higher by the end of 21st century (Figure 6). Meanwhile, changes in annual rainfall will be greater in the North East and along coastal regions (Figure 7).

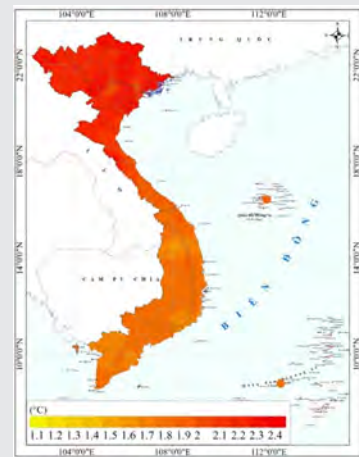
Figure 6.
Changes in average annual maximum temperatures (°C) based on RCP4.5 scenario



Map provided by ISPONRE



a. Mid-21st century



b. End of the 21st century

Figure 7.
Changes in annual rainfall (%) based on RCP4.5 scenario



Map provided by ISPONRE



a. Mid-21st century



b. End of the 21st century



Photo: UN Environment Programme/Center of Help for Indigenous Value, Promotion and Sustainable Environment (CHIASE)

Viet Nam is already facing significant losses and damage caused by climate change. The losses and damage go beyond coping capacity, even if climate change adaptation and GHG emission reduction measures are comprehensively applied. According to MONRE's technical report updating Viet Nam's Nationally Determined Commitment (NDC), from 1995 to 2017, damage caused by natural disasters in Viet Nam came to 14 trillion VND per year, with an increase in damage of 12.7 percent annually. 2017, which saw a large number of storms (16 storms), posted record damage valued at 38.7 trillion VND, or approximately 2.7 billion USD [25].

In addition, over the past 30 years, the average number of dead and missing people due to natural disasters totalled 500 annually; thousands of people were injured and annual economic losses accounted for approximately 1.5% of GDP [29].

Climate change impacts are differentiated across geographical areas of Viet Nam. Coastal regions and islands, for example, are frequently affected by climate phenomena such as storms and tropical depressions, floods and landslides, while delta areas are affected by storms and tropical depressions, floods and erosion in the rainy season, and drought and saltwater intrusion in the dry season. The mountainous and midland areas are often affected by floods, flash floods, landslides, forest fires and prolonged drought.

The sectors most susceptible to climate change are agriculture, public health and infrastructure, impacted as they are by natural ecosystems, biodiversity and water resources [25]. The most vulnerable regions are found along the Mekong Delta, the Red River Delta, the Central Coast and the North Mountains; and the most impacted groups include the poor, ethnic minorities, the elderly, women, children and people with disabilities. Compounding this is the fact that livelihoods of the poor and ethnic minorities tend to rely on agricultural production and natural resources [26].

Agriculture

Cultivated land, soil quality and crop yields in the Red River Delta and Mekong River Delta are diminishing due to erosion, landslides, flooding and salinity. With increasing temperatures causing fluctuations in rainfall, pests and diseases will also multiply and develop alongside strengthened pathogenicity and increased disease transmission risk among animals, affecting the quality and productivity of crops and livestock – which, in turn, will be further exacerbated by the expected increased risk of drought and water shortages in agricultural areas. As sea-level rise penetrates deeper into the continent, many freshwater aquatic species stand to lose their habitats, greatly affecting coastal economies and fishing and aquaculture activities, in particular.

According to the climate change and sea-level rise scenario for Viet Nam released by MONRE in 2016, if the sea level rises 100cm and no coping solutions are adopted, then 38.9% of the Mekong Delta area is at risk of flooding by 2100 [24]. This includes about 570,000 hectares of planted rice crop, or 3,177,000 tons of rice, equivalent to a loss of about 17,500 billion VND (in 2016 prices). Agricultural value-added will decrease by 5% in 2030 and 5.8% by 2050. Losses and damages to agriculture caused by sea-level rise could eventually amount to nearly 43 billion USD from 2020 to 2100. As mentioned in the technical report updating the NDC of Viet Nam [4], this damage would amount to 46% of national rice production by 2100. The losses are even more pronounced in regions including Thai Binh in the Red River Delta, and the provinces of Dong Thap, An Giang and Kien Giang, in the Mekong River Delta; for example, in Can Tho City, damages would come to a staggering 70% of rice production [4].

Water Management

Viet Nam faces several challenges with regard to water security. Viet Nam's water resources depend largely on river water originating abroad, with 63% of the country's total river flow coming from outside the territory: 90% of the Mekong River basin relies on foreign flows; 50% of the Red River basin does the same. Other problems include: the uneven distribution of water resources in terms of both time and space; imbalances between water demand and water storage capacity; unreasonable and unsustainable exploitation and use of water resources; low water use efficiency; polluted, degraded, scarce, and depleted water sources; and seriously declining water quality. In addition, natural disasters and climate change are causing saline intrusion and droughts [4]. As a result, Viet Nam will not have enough water for domestic and production uses, particularly for mass agriculture production purposes.

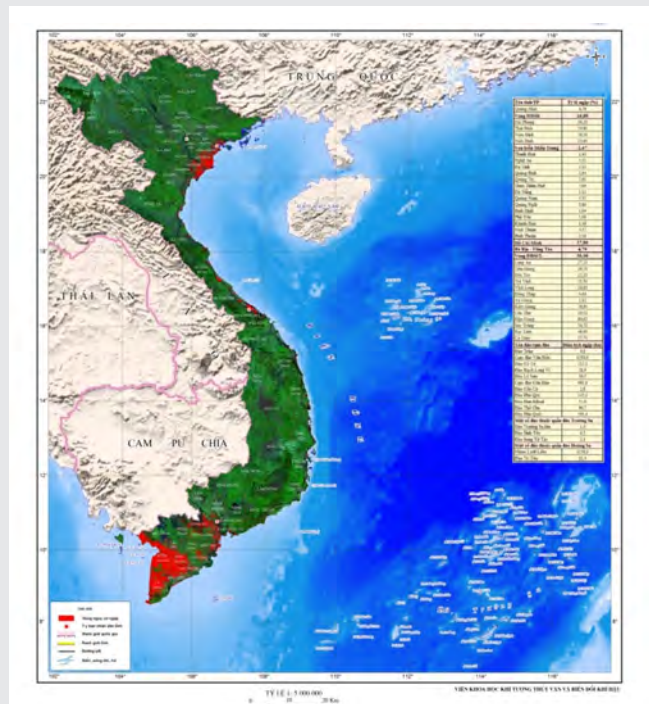
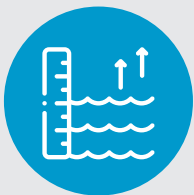
(Renewable) Energy

Increased temperatures will also lead to an increase in electricity consumption for cooling; moreover, changes in rainfall and runoff will affect the operation of hydropower reservoirs. Climate change also alters the structure of the wind and radiation system, thereby affecting the potential and ability to exploit renewable energy sources (specifically, wind and solar energy). Operation of offshore oil rigs, oil and gas transportation systems and gas power plants in coastal areas will also be affected by sea-level rise.

Industry

Industrial processing and manufacturing sectors will be affected by climate change too, as raw materials supplied to the food processing, textile, and garment industries will significantly decline due to a lack of access to material extraction areas, for example in the Mekong Delta provinces [25]. According to the 2016 climate change and sea-level rise scenario of Viet Nam, if the sea level rises by one meter by the end of the 21st century, most coastal industrial zones will be flooded [24].

Figure 8.
The inundation risk map with sea-level rise of 100cm



Source: Climate change and Sea level rise scenario of Viet Nam (2016)

Without implementing climate change adaptation measures, by 2100, when the sea level rises by 100cm, over 10% of the Red River Delta and Quang Ninh province, more than 2.5% of the area of the central coastal provinces, and over 20% of Ho Chi Minh City, will be at risk of being inundated. This will directly affect 9% of the population of the Red River Delta, including Quang Ninh province, nearly 9% of the population of the central coastal provinces, and approximately 7% of the population of Ho Chi Minh City. Up to 39% of the Mekong Delta could be submerged, affecting 35% of the population - and with the risk of losing 40.5% of the total rice production in this region (Figure 8).

Other impacts

Health and mortality

Natural disasters such as storms, surges, floods, droughts, heavy rains and landslides, are projected to increase in intensity and frequency, increasing the number of deaths. Disasters will also indirectly affect health due to environmental pollution, malnutrition, and disease, in addition to socio-economic, planning, employment and income disruptions. The most vulnerable will be poor farmers, ethnic minorities in rural area, the elderly, children and women. Extreme weather phenomena will become more frequent, with the work of women in Northern mountainous areas, in particular, becoming even harder, as their role involves preventing livestock from freezing when there are severe and damaging cold spells [27].

Climate change-induced migration

Climate change also adversely affects the economic activities of millions of households, reducing income, food security and health, leading to an increased risk of poverty. This is also one of the main reasons leading to an increase in migration from rural to urban areas. The number of women migrating from rural areas to cities, and particularly to urban areas and industrial zones, is increasing at a much higher rate than among men. In the context of migration and living far away from home, women face more risks, difficulties and challenges, not only in terms of income but, also, in terms of housing and sanitation, especially among those with unstable jobs [28].

Natural disasters, sea-level rise, saline intrusion, inundation and erosion also threaten to reduce the area of cultivated land, undermine the food supply, cut into the housing stock, damage natural resources and force poor people in both coastal and rural areas to leave their homes and communities behind.

Other climate-change related impacts include slow-onset phenomena such as drought, increased salinity of water, soil degradation and desertification, all of which threaten to make some regions uninhabitable. Climate change-induced migration might eventually come to include two types: temporary seasonal migration and permanent resettlement [28].

Implications

Viet Nam is facing losses and damages beyond its resilience and adaptive capacity. Sharing and managing risks of loss and damage must be considered at both the national and international level. The increasing impact of climate change on residential areas, economic zones, and ecosystems will lead to unavoidable losses which may lead to further gender inequality due to changes in livelihood activities and employment opportunities. [25, 30]



III. Institutional and policy framework for gender equality and climate change in Viet Nam



Photo: UN Environment Programme/Tin Ly

3.1. Introduction to policy making system in Viet Nam

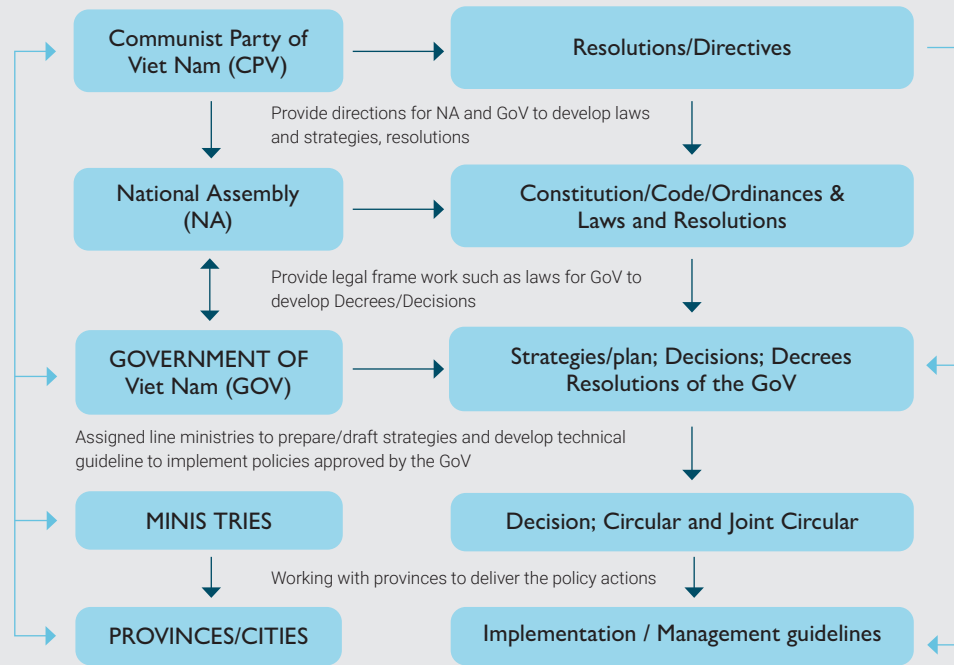
Gender equality and climate policy making processes in Viet Nam at the national level are in line with the institutional structure of the political system. For administration purposes, Viet Nam is divided into four levels: the central government and three levels of local government (provincial, district, and commune level). Provinces are divided into districts and provincial cities; districts are divided into communes and townships. Among these four levels of government, only central and provincial governments can propose policies. The government system in Viet Nam is quite unique, as it basically has two levels of governance: national and local. While the local level is divided into lower administrative systems, such as districts and communes, these play no role in reframing national and provincial policies [31].

In Viet Nam, both the Communist Party of Viet Nam (CPV) and state systems formulate policies. The policy documents that are formulated by the CPV and state agencies are illustrated in Figure 2. These policy documents comprise: (1) Constitution; (2) Code; (3) Law; (4) Resolution; (5) Ordinance; (6) Decree; (7) Decision; (8) Circular; and (9) Joint Circular.

Figure 9 shows that CPV allows the GoV to develop laws to be submitted to the national assembly (NA) for approval. Once the law is passed by the NA, GoV then develops decree/s for guiding the implementation of that law. Once the GoV has developed decree/s, line ministries prepare circulars or joint circulars to implement regulations mentioned in the decree/s [31].

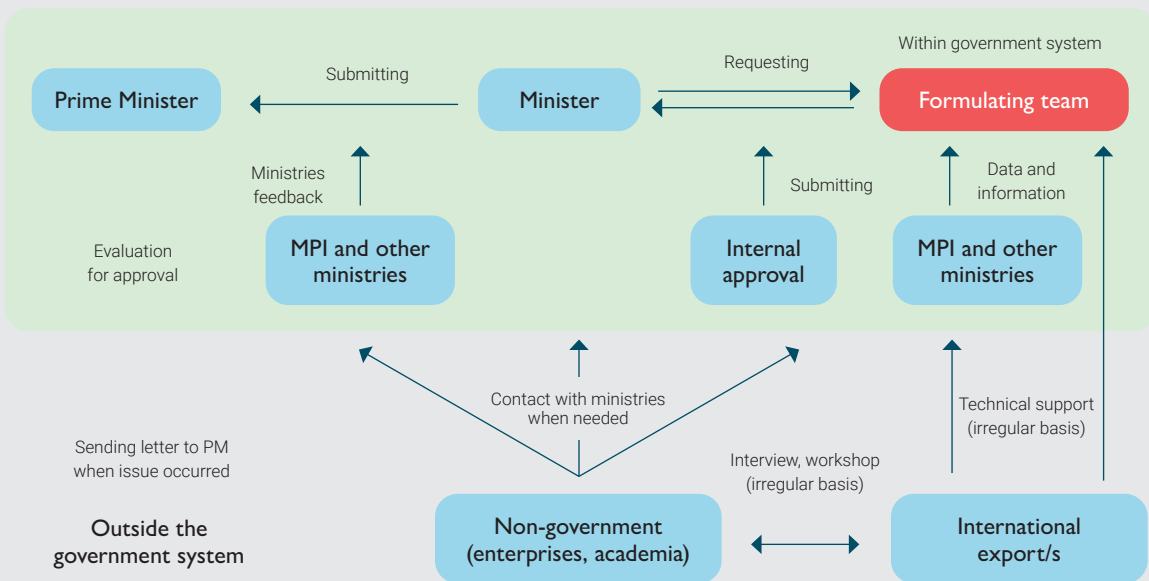
The policy making process is summarized in Figure 10, and can be applied to all public policies in Viet Nam, including the development of the national action plan for climate change or a new strategy for gender equality.

Figure 9.
Structure of national policy formulation system in Viet Nam



Source: Adapted from L. Nguyen (2017)

Figure 10.
The diagram of current public policy formulation procedure in Viet Nam



There is no channel for frequently policy dialogue between ministries and other stakeholders

Source: Adapted from Ohno (2009) [32]

According to a report prepared by Spratt (2009) for the United States Agency for International Development (USAID), policy development in Viet Nam is a lengthy and multilayered process that comprises the following steps [33]:

- (1) Assessing the need for a new policy (agenda setting);
- (2) Drafting its various versions (policy formulation);
- (3) Sending it to provincial level for feedback (policy formulation);
- (4) Returning it to the authorizing ministry (policy formulation);
- (5) Sending it for review to other ministries and sectors (policy formulation);
- (6) Accepting comments (policy formulation);
- (7) Getting experts to review and approve the policy (policy adoption); and
- (8) Obtaining the Prime Minister's approval (policy adoption).

The above-mentioned steps are applied to the case where the GoV assigns a particular ministry to formulate a policy.

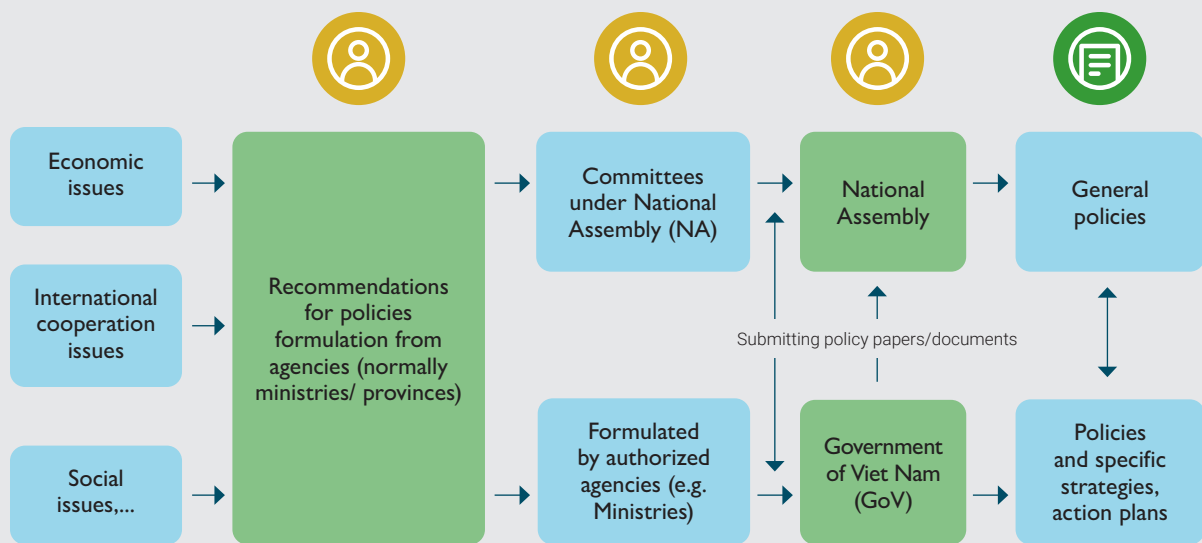


At the provincial level, the cycle of policy formulation is typically similar, with the department role replacing the ministry role. Step 1, assessing the need for a new policy, is normally carried out by the Ministry. Detailed studies to inform on the urgency and importance of the formulation of a new policy are normally not undertaken. Steps 3 and 5 may be undertaken concurrently. Step 7 can be considered as the initial approval by the minister after having received all comments from line ministries, provinces and other stakeholders, including experts. Some policy documents can be approved by the minister, but others must be approved by the Prime Minister (examples include national strategies for development of sectors, e.g. climate change action plans).

Figure 10 illustrates the two main domains involved in policy formulation at national level: (i) government actors (e.g., ministries, agencies) and (ii) non-government actors (e.g. enterprises, NGOs, CBOs, individuals, academia etc.). Most of the formulation activities take place within the government’s boundary. Non-governmental actors are normally only involved in discussion at seminars or workshops; however, climate change policy formulation currently receives active support from international agencies such as UNDP, WB and ADB.

Recommendations for policy formulation from line ministry/ies will typically be placed in an annual policy agenda [34]. Under the guidance of Committees under the NA, the GoV will be requested to develop laws to address arising issues. Figure 11 shows a schematic diagram of policy formulation (e.g. laws) steps in Viet Nam. Gender and climate change issues can be recommended by line ministries or provinces to the NA and/or GoV for the development of intervention policies/measures.

Figure 11. The schematic diagram of policy formulation steps in Viet Nam



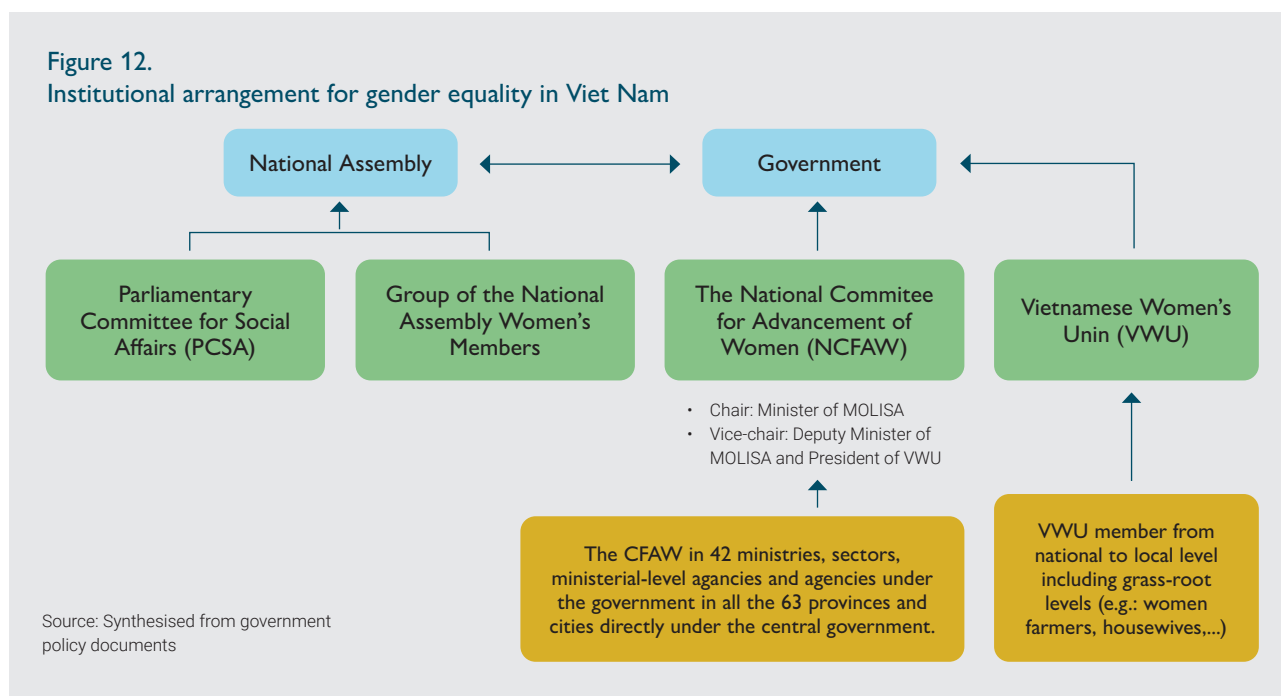
Source: Adapted from Oanh (2010)[34]

3.2 Institutional setting and policy framework for gender equality

3.2.1 Institutional setting for gender equality

The Prime Minister issued Decision No. 2351/QĐ-TTg on 24 December 2010, approving the National Strategy on Gender Equality 2010-2020 [35]. The Decision stipulates all ministries to implement this National Strategy under their designated areas. In essence, each ministry has to develop and implement annual and five-year work plans to achieve gender strategy targets and strengthen inter-sectoral coordination, particularly integrating gender equality into sectoral plans and the policymaking process. The ministry also has to hold responsibility for examining and assessing the implementation of the strategy within the ministry of agency.

At the time of writing, the National Strategy on Gender Equality 2010-2020 is being reviewed, and that of 2021-2030 is being developed on the basis of identifying key gender equality issues and strategic measures which ensure compliance with related laws and effective implementation of the Agenda 2030, CEDAW, and other related international commitments¹⁶. Figure 12 presents key institutions working on gender issues and their interaction within the government systems.



National Strategy for Gender Equality for period 2021-2030: Aiming to reduce the gender gap in the fields of economy, labor and employment

Aside from the key institutions mentioned above, a number of ministries and sectors have also assigned a specific unit to be in charge of gender equality work. For example, the Committee on Ethnic Minority Affairs (CEMA) assigned this task to the Department of Ethnic Minority Affairs, the Ministry of Home Affairs (MoHA) to the General Affairs Department for this function, and the Ministry of Culture, Sports and Tourism (MoCST) to the Family Department. Moreover, the Committee for the Advancement of Women in Ministry of Natural Resources and Environment (MONRE) has set a target of having 23.8% female leaders in the Ministry's organizational structure for 2019-2021 and 31% for 2021- 2026.¹⁷

¹⁶ National Strategy for Gender Equality for period 2021-2030: Aiming to reduce the gender gap in the fields of economy, labor and employment

¹⁷ Decision No. 2967/QĐ-BTNMT dated 20/11/2019 on the organizational structure of the Committee for the Advancement of Women within MONRE

At the local level, the Departments of Labour, Invalids and Social Affairs (DoLISAs) under the People's Committees of provinces and centrally-run cities, and Offices of Labour, Invalids and Social Affairs under People's Committees of districts, towns or provincial cities, are tasked with managing gender-related issues within the provincial territory.

Table 3 presents some institutions and their mandates to promote gender equality and women empowerment activities in Viet Nam. Among them, MOLISA and VWU are two important agencies that provide direct advice to the Government of Viet Nam on the development and implementation of gender-related policies.

Table 3. Key institutions working on gender issues and their functions

Source: Summarized from government's documents

Agency	Function
The Ministry of Labor, Invalids and Social Affairs (MOLISA)	<ul style="list-style-type: none"> • Main government agency in charge of state administration of gender equality since 2008 • The Gender Equality Department under MOLISA is responsible for reviewing and developing legal frameworks, policies and strategies in the area of gender equality at the central level • The Department holds accountability for monitoring the implementation of the Gender Equality Law (2006) and preparing the gender equality report to the National Assembly • MOLISA is also responsible for guiding the implementation of the Beijing Platform for Action
The Ministry of Culture, Sports and Tourism (MOCST)	<ul style="list-style-type: none"> • In charge of implementing the Law on Domestic Violence Prevention and Control (2007) • The Ministry is designated to develop programs and plans on domestic violence prevention and control, provide counseling services for families on domestic violence issues and deliver training courses for staff and social workers
Parliamentary Committee for Social Affairs (PCSA) under the National Assembly (NA)	<ul style="list-style-type: none"> • Responsible for gender equality nationally, including the review of proposed laws and bills to ensure the incorporation of gender aspects • PCSA has to verify the annual report of gender equality objective implementation prior to its presentation to the National Assembly • The National Assembly Women's Members group also formally promotes gender equality and gender mainstreaming in National Assembly operations
Vietnamese Women's Union (VWWU)	<ul style="list-style-type: none"> • Socio-political organization representing Vietnamese women and promoting their equality and development. VWWU has a mandate of protecting women's rights and promoting gender equality in society • VWWU has representatives from national to local, grass-roots levels; a large number of members are women farmers
The National Committee for Advancement of Women (NCFAW)	<ul style="list-style-type: none"> • An inter-sectoral committee to coordinate the advancement of women at the national level • Members are deputy ministers and equivalent positions from 16 line ministries and other national agencies • MOLISA is a core member and coordinates NCFAW's operations • Minister of MOLISA serves as NCFAW's Chair while Vice-Chairs are the Deputy Minister of MOLISA and the President of VWWU • NCFAW includes about 20 members – high-ranking officials including MOLISA's Minister; the Chairwoman of the VWWU and Vice-Ministers (and equivalent positions) from the Ministry of Justice, Ministry of Education and Training (MOET), Ministry of Home Affairs (MHA), Ministry of Agriculture and Rural Development (MARD), Ministry of Planning and Investment (MPI), Ministry of Finance (MOF) and other ministries and organizations • The NCFAW system was established in 42 ministries, sectors, ministerial-level agencies and agencies under the government, as well as in all the 63 provinces and cities directly under the central government • NCFAW is required to advise the Prime Minister on gender equality and the advancement of women and to report to the Prime Minister bi-annually on its operations • NCFAW also has to supervise and coordinate with all other ministries, government agencies, and People's Committees on their implementation of gender equality and women's advancement targets at the national level • NCFAW needs to ensure sectoral gender action plans are developed, implemented and contribute to the national gender strategy
DoLISA (at sub-national level)	<ul style="list-style-type: none"> • Both state agencies for gender equality and standing bodies of the Committee for the Advancement of Women (CFAW) at the provincial level • As at the end of 2018, all 63 localities have combined gender equality work and children's work or Children - Gender equality - Social protection under DoLISAs with the task of guiding the mainstreaming of gender equality issues in the formulation and implementation of local socio-economic development strategies and plans • The DoLISAs also advise on measures to promote gender equality in line with local socio-economic conditions (only Quang Ninh province has retained a Gender Equality Office) (MOLISA, 2019)

3.2.2 Policy framework for gender equality

Viet Nam's Constitution has long recognized gender equality as a necessary foundation for building a peaceful, prosperous and sustainable society. Article 26 of the 2013 Constitution states that, "women and men citizens have equal rights in all fields. The State shall adopt policies to guarantee the right to and opportunities for gender equality". As such, the Government of Viet Nam has committed to promoting gender equality by making it a cross-cutting dimension in all political, economic and cultural and social spheres, in addition to laws, regulations, strategies and action plans specific to gender equality.

Table 4. Key legal and policy documents related to gender equality and women empowerment in Viet Nam

No.	Name of Policies	Year of approval	Approval Agency	Implications	Relevance and implications to climate change
1	Gender Equality Law	2006	National Assembly	Landmark legislation on achieving gender equality in all fields of social and family life. It stipulates the requirement of gender mainstreaming in legal documents	Sets the priority for all legal documents, including climate change policies and action plans, to mainstream gender.
2	Law on Domestic Violence Prevention and Control	7.1	National Assembly	Measures to prevent and control domestic violence; articulates different types of domestic violence and respective punishments	Sets the framework to prevent domestic violence, particularly for women, children and elderly people
3	National Strategy on Gender Equality 2011 – 2020	2011	Prime Minister	Provides a roadmap for gender equality in Viet Nam for the period 2011-2020 Current: to be renewed for the period 2021-2030	Sets out the direction to promote gender equality, to which climate change actions can be referred
4	Land Law	2013	National Assembly	Recognizes both husband and wife's full names and signature on the land-use rights certificate, house ownership and other assets related to land	
5	Marriage and Family Law	Revised in 2014	National Assembly	Ensures equal rights to property and inheritance before the law in case of divorce, death This law has not yet granted legal status to same-sex marriage	
6	Law on Elections	2015	National Assembly	Introduces a gender quota to support women's candidature	
7	Law on the Promulgation of Legal Documents	2015	National Assembly	Mandates the Parliamentary Committee for Social Affairs to review and ensure the incorporation of gender issues in draft laws, ordinances and resolutions before submitting to the National Assembly for debate and/or approval	

Table 4. Key legal and policy documents related to gender equality and women empowerment in Viet Nam (continued)

No.	Name of Policies	Year of approval	Approval Agency	Implications	Relevance and implications to climate change
8	State Budget Law	2015	National Assembly	Prioritizes gender equality, hunger elimination and poverty reduction in the budgetary allocation Gender equality should be a criterion for budget allocation	
9	Law on support of SMEs	2015	National Assembly	Mentions gender aspects when supporting SMEs and providing jobs	
10	Labor Code	2012 and revised in 2019	National Assembly	Article 4 - State policies on labor states "Ensure gender equality; introduce labor and social policies aimed to protect female, disabled, elderly and minor employees"; Article 90 - Salaries states "Employers shall pay salaries fairly without discrimination against genders of employees who perform equal works"; Chapter X - Provisions applicable to female employees and assurance of gender equality	

Source: Synthesized from policy documents of Viet Nam related to gender equality

Amongst the above long list of legal documents, the National Strategy on Gender Equality 2011-2020 is the key document that provides a strong foundation for gender inclusion in the development of socio-economic strategy and human resource development. The strategy highlights the viewpoint that "[g]ender equality work is one of the basic elements to improve the quality of life of every person, every family and the whole society". It sets out the general objective that, by 2020, the substantive equality between men and women shall be basically ensured. Accordingly, both sexes will share equal opportunity, participation and benefits in the political, economic, cultural and social domains, contributing to fast and sustainable national development. The Strategy covers the areas of Political Participation, Economy, Labour/Employment, Health, Education, Science and Technology, Family and Culture. The specific objectives for each area are presented clearly in the Strategy for implementation in all 63 provinces/cities throughout the country. When the National Strategy for Gender Equality 2021 – 2030 was ratified, it adopted six objectives representing the following areas: politics, economics and labour; family and response to gender-based violence, health, and education and training. A wide range of stakeholders were involved including different ministries and international organizations. Although there were no specific objectives and targets related to climate change and DRR, there were indirect linkages made between gender and climate-related targets. An example of which is the target set on the number of female workers in the agriculture sector.



Photo: UN Environment Programme/CHIASE

3.2.3 Viet Nam's effort in implementing global commitment to gender equality

Viet Nam has committed to a number of key international conventions related to the human rights of women, and children and gender equality. These include the Convention on the Elimination of All forms of Discrimination against women (CEDAW), the Beijing Declaration on Women's Rights, the Convention on the Rights of the Child, and the United Nations Conventions against Transnational Organized Crime with Protocol to Prevent, Suppress, and Punish Trafficking in Persons, especially Women and Children. The most recently adopted one is the 2030 Agenda for Sustainable Development which sets out of 17 global sustainable development goals (SDGs), SDG 5 being gender equality (UN, 2016).

CEDAW remains one of the most important documents, legally binding Viet Nam to fulfill, protect and respect women's human rights, while taking responsibility for eliminating all forms of discrimination perpetuated by individuals and organizations against women. In 2015, Viet Nam submitted the combined seventh and eighth periodic reports to the CEDAW Committee.

¹⁸ https://tbinternet.ohchr.org/Treaties/CEDAW/Shared%20Documents/VNM/INT_CEDAW_NGO_VNM_20849_E.pdf

Of specific relevance to gender and climate change, Viet Nam's reporting on discrimination Article 14: Women in Rural Areas is noteworthy. For this article, the report implied a lack of gender mainstreaming into rural development policies and programs. Most policies were not responsive to the realistic and strategic needs of different groups, including women and men; instead, they targeted the general population. Statistically, only 30% of 23 reviewed policies and programs for rural development mentioned women as their beneficiaries.

In other development strategies in rural areas, such as the Strategic Plan for Agriculture Development by 2020, the Strategic Plan for Forestry Development by 2020 and nearly 30 related policies, there are 60 indicators to measure development by 2020, but none of them include the participation and interest of women.¹⁸ As the role and needs of women were not strongly highlighted in the rural development programs, women became passive in their participation; at the same time, benefits were distributed to them unequally. For instance, meetings at the grassroots level were mainly attended by men under the village chairman, and were simply to inform about already-decided-plans.

Women's access to land was another aspect highlighted in the most recent CEDAW report. Though the Land Law 2013 stipulated equal land-use rights to both spouses in their legal marriage, only around 10% of land use certificates have signatures of both husband and wife, due to reasons such as weak enforcement of the law, insufficient public awareness of the law, administrative complexity to print both names on the certificates, inadequate understanding of the law amongst public officers and customary law embedded within the patriarchal order preventing women from obtaining their rights to use the land and to inherit the land property after divorce.

Since the adoption of CEDAW in 1982, Viet Nam has undertaken significant efforts to bring about international recognition in promoting gender equality and protecting the rights of women and girls.

In the context of climate change, the General Recommendation No.37 on Gender-related dimensions of Disaster Risk Reduction (DRR) was issued in 2018 pursuant to Article 21 of the CEDAW by the Committee on the Elimination of Discrimination against Women. This General Recommendation provides guidance to States parties and agencies on the implementation of their obligations under the Convention in relation to DRR and climate change. The General Recommendation No.37 is expected to leverage these efforts in the area of climate change, especially as Viet Nam is one of countries in the world being most severely impacted.

Generally, Viet Nam has put gender related policies in place, and clear roadmaps have been set out to achieve international commitments on gender equality. However, in the context of climate change, challenges in including gender equality in its national and, particularly, sectoral, climate actions still prevail. Currently, some regulations are in place (for example Law on the Promulgation of Legal Documents in 2015) requiring gender consideration in the development of laws, but not for law guidelines, such as decrees and circulars. The overview of policy making system presented in 3.1 provides some thoughts on where and when gender equality can be integrated into public policies generally, and in climate policies, particularly.

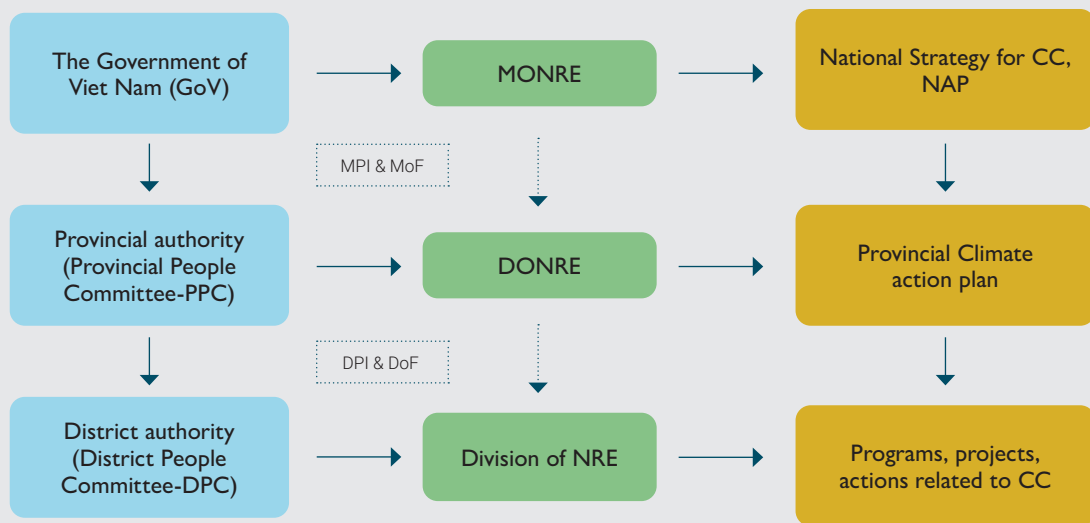
3.3 Institutional setting and policy framework for climate change in Viet Nam

3.3.1 Institutional setting for climate change in Viet Nam

Climate change is a complex and a multi-sectoral issue in Viet Nam, as in other countries. In order to manage and coordinate efforts in responding to climate change impacts, a number of institutions have been established. The Ministry of Natural Resources and Environment (MONRE), established in 2003, has been assigned as the state agency responsible for climate change issues. MONRE oversees the implementation of climate change policies at the national level; its local departments (Department of Natural Resources and Environment - DONRE) are responsible for overseeing and implementing the national and local policies at the provincial level [31].

As seen in Figure 10, the roles of the Ministry of Planning and Investment (MPI) and Ministry of Finance (MoF) are very crucial in allocating and expending budgets. At the moment, there is no budget line in the state budget planning system for climate change activities in Viet Nam.

Figure 13. Schematic diagram of relations among the actors within the government system in formulation of climate change policy (e.g. NTP-RCC) in Viet Nam



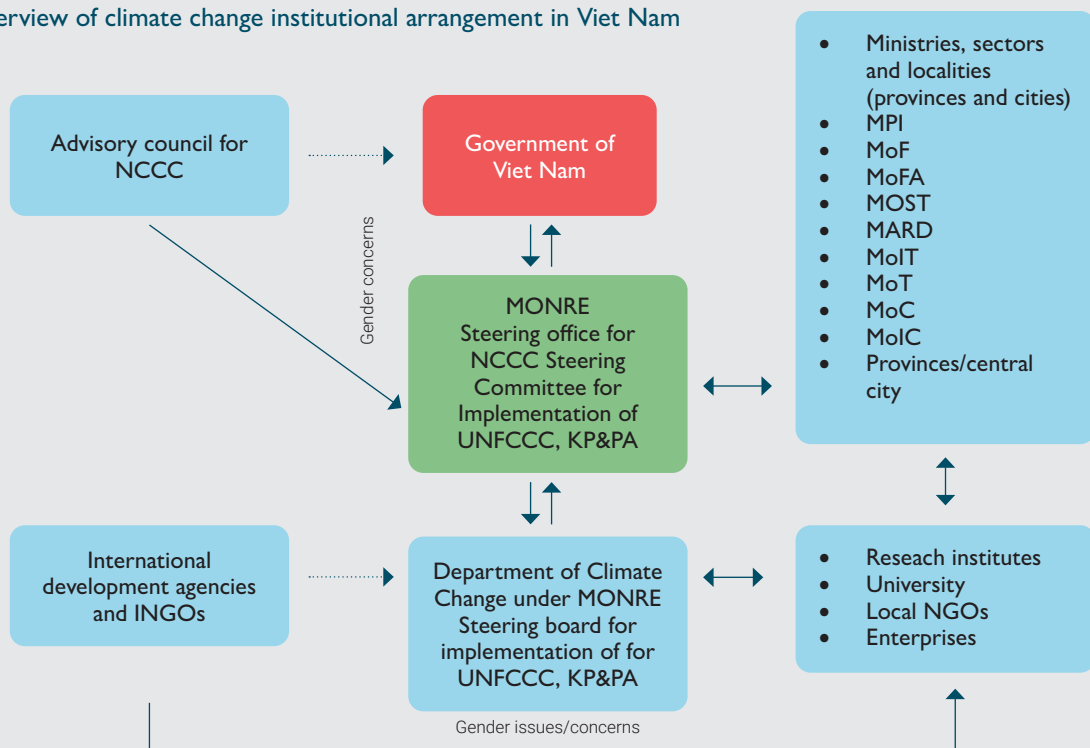
Note: → indicates strong control and top-down approach; --> indicates direction that actor should follow but less top-down approach than the previous. <--> indicates the feedback mechanism between upper and lower levels of the administrative system.

Source: Adapted from L. Nguyen (2017) [31]

The formulation of the National Targeted Program to Respond to Climate Change (NTP-RCC) was the first prioritized program for climate change in Viet Nam. It received special investment in order to increase awareness of climate change in political systems at both national and local levels. The above figure illustrates a typical example of the process involved when it comes to the formulation and implementation of climate action plans by various government stakeholders. In general, climate change policy formulation is normally assigned to MONRE by the GoV, in cooperation with the two key ministries: MPI for securing budget, defining the scope of policy covered and budget allocation and expenditure; and MoF for regulating budget spending [29].

In addition, the National Climate Change Committee (NCCC) of Viet Nam was established in 2012, and is chaired by the Prime Minister. The Vice-Chairmen of this Committee are the Deputy Prime Minister and the Minister of MONRE. Members of this Committee are leaders, representatives of related Ministries and agencies. MONRE is the permanent acting agency of this Committee. The Committee Office, the assisting body for this Committee, is located in MONRE and chaired by the Director General of the Department of Climate Change. The Viet Nam panel on Climate Change (VPCC) was established in 2014 and is currently chaired by the Minister of MONRE, whose responsibility it is to advise this Committee on policy, science and technology issues to support climate change responses. Members of the VPCC are representatives, scientists from the related Ministries, agencies and organizations. In order to integrate gender aspects into climate change policies, the entry point at national level should be the NCCC [31].

Figure 14.
Overview of climate change institutional arrangement in Viet Nam



Source: Adapted from a document released by Department of Climate Change (2019)

Recently, gender concerns have been channeled into climate policy in Viet Nam by international development agencies and INGOs in two ways [25]. First, in supporting MONRE in developing climate related policies, gender issues can be discussed with Department of Climate Change (DCC). Secondly, gender issues and concerns can be raised through gender-related studies carried out by research institutions, local NGOs and enterprises with support from international development agencies and INGOs (Figure 14).



Photo: UN Environment Programme/CHIASÉ

The Government of Viet Nam has designated MONRE as the National Focal Point to implement the UNFCCC, Kyoto Protocol (KP), Paris Agreement on Climate Change (PA) and other relevant international treaties on climate change, and to develop Biennial Updated Reports and National Communications of Viet Nam for submission to UNFCCC.

Gender under the UNFCCC is assigned to the Science Technology and International Cooperation Division, Department of Climate Change of MONRE.¹⁹ The National Steering Committee for UNFCCC, KP, and PA is chaired by the leader of MONRE, and is composed of representatives from the relevant line ministries. The institutional arrangement for the climate change in Viet Nam is presented in Figure 11 above.

MONRE is also assigned by the GoV to be the focal point agency to implement the Clean Development Mechanism (CDM) of Viet Nam. The Minister of MONRE established the National Committee of Climate Change (NCCC) in 2007, which holds the main responsibility of assisting the Minister in instructing, managing, and cooperating with other relevant agencies to implement UNFCCC, Kyoto Protocol and CDM. The Ministry of Rural Development and Agriculture is the focal point agency for implementing Reducing Emissions from Deforestation and Forest Degradation (REDD) – the United Nations' Initiative for reducing GHG due to deforestation at central and local levels.

Apart from governmental agencies, a number of local NGOs have also shown their strong commitment and contribution in responding to climate change in Viet Nam, particularly in the climate policy formulation process. A working group of CSOs on Climate Change (CCWG) was established in 2008 with an aim to addressing emerging issues and concerns around the increasing impacts of climate change and the need for information sharing and exchange on this topic in Viet Nam. CCWG creates a forum for both International and National NGOs to actively participate in addressing climate change issues, and plays the very important role of sharing information and resources, as well as cooperating with climate change-related organizations across different sectors and fields. CCWG includes 12 INGOs and LNGOs in Viet Nam, and is broken down into four sub-groups: behavior change and actions, adaptation, mitigation, and policy advocacy. There is no focal point for gender in CCWG, but when it requires gender knowledge, the working group mobilizes members that work on gender to participate in meetings.

A network of National NGOs (VNGO&CC) was established through the initiative of the Center for Sustainable Rural Development (SRD), the Center of Marine Life Conservation and Community Development (MCD), Center of Environmental Research, Education and Development (CERED) and the Institute of Social Sciences (ISS). The network has since become an open forum for its members to exchange information, collaborate and support each other to connect with the National Assembly, authorities, social organizations and sponsorship agencies. Currently, there are more than 100 members, including both organizations and individuals. VNGO&CC has the following roles: (i) forming channels for climate change-related information sharing; (ii) assisting members in building capacity for response to climate change; (iii) coordinating activities to enhance the effectiveness of VNGOs' activities and communicating information and results of projects on climate change to the community and the State.

¹⁹ By 31th December 2020, Dr. Chu Thi Thanh Huong was assigned as the gender focal point

3.3.2 Climate change policy framework

Viet Nam ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 16 November 1994; the Kyoto Protocol on 25 September 2002; and the Doha Amendment on 22 June 2015. It also approved the Paris Agreement on 3 November 2016.

Viet Nam submitted its Intended Nationally Determined Contribution (INDC)²⁰ on 30 September 2015 with a commitment to reduce GHG emissions by 8% compared to the Business as Usual (BAU) scenario by 2030, with a target of 25% when international assistance is available [36]. The updated NDC of Viet Nam submitted to UNFCCC on 11 September 2020 increased the targets to 9% and 27%, respectively [25].

In recent years, the Government of Viet Nam (GoV) has developed policy frameworks and other mechanisms to actively respond to climate change, including: The National Targeted Program to Respond to Climate Change (NTP-RCC) in 2008; the Supporting Program to Respond to Climate Change (SP-RCC) in 2009; the National Strategy for Climate Change in December 2011; and the National Strategy for Green Growth (NSGG) in 2012. In 2013, the Central Executive Committee of the Communist Party of Viet Nam (CPV) approved Resolution 24/NQ/TW on the proactive response to climate change, strengthening natural resource management and environmental protection. Many other guiding documents have also been issued, gradually mobilizing the political system to respond to climate change.

In addition, the Prime Minister issued Decision No.622/QĐ-TTg on 10 May 2017 to approve the National Action Plan for Implementing Agenda 2030 - 17 Sustainable Development Goals (SDGs), including Goal 5 - Gender Equality and Goal 13 - Climate Action. More recently, the GoV approved the roadmaps to implement SDGs by 2030²¹. However, there is no linkage between the two Goals at either national or local levels.

At the regional level, GoV approved Resolution No. 120/NQ-CP on Sustainable Development of the Mekong River Delta Adapting to Climate Change on 17 November 2017, and issued a comprehensive Action Plan to implement this Resolution with specific tasks, actions and a timeline to be carried out by line ministries, sectors and localities.

The above-mentioned national policies provide direction and priority activities to respond to climate change in Viet Nam, and are considered a platform for climate action at the provincial level. However, gender is not clearly integrated into these climate change policies and it will thus be a challenge for ministries and provinces to translate policy direction into specific actions; this may, in turn, hinder the inclusion of gendered-impact considerations into climate actions at the sector level.

A legal framework related to climate change has also been developed, namely (1) the Law on Environmental Protection 2014²², where climate change response is specifically mentioned in Chapter IV of the Law; and (2) the Law on Meteorology and Hydrology²³, which covers the monitoring and impact assessment of, and response to, climate change. However, these two laws do not refer to gender requirements in implementing the law.

²⁰ Since October 2016, INDC became the NDC

²¹ The Decision No. 681/ QĐ-TTg signed by The Prime Minister on June 4th, 2019

²² Law No. 55/2014/QH13 was adopted by National Assembly of the Socialist Republic of Viet Nam, Session XIII on June 23rd, 2014 and the revised LEP was adopted by NA on 17th November 2020 that will be come to effective from 1st January 2022.

²³ Law No. 90/2015/QH13 was adopted by the National Assembly of Socialist Republic of Viet Nam on November 23rd, 2015

In order to strengthen the climate change policy framework, Viet Nam has received support from the international community. Many policy papers related to climate change have been formulated with technical support from international partners in cooperation with line ministries in Viet Nam (e.g. MONRE, MARD, and MPI). Non-governmental organizations (NGOs), both internationally- and nationally-based, also actively participate in climate change policy development in Viet Nam through organizing seminars and workshops for the members, as well as actively participating in national forums on the climate change issue.

NGOs are actively involved in the implementation of climate change policies at the local level. However, while UN agencies and NGOs are not formally involved in the climate policy-making process, during the review and updating of the NDC of Viet Nam, gender equality was integrated in discussion and consultation with the UN and NGOs [37]. GIZ and UN-Women are among the active organizations bringing gender equality issues into Viet Nam's NDC.

In addition, in 2019, with support from UN-Women, VNGO&CC, in discussion with Center for Environment and Community Research (CECR) and members of the advisory group of the Empower-Women for Climate Resilient-Societies Project, submitted a list of 13 key messages and recommendations to COP 25 (Madrid, Spain, 2019) on gender equality and mainstreaming in climate change adaptation and disaster risk reduction (DRR) in Viet Nam.

Overall, Viet Nam's policy framework on climate change has since significantly improved. Viet Nam has also prepared and submitted its National Communication Report (NCR) and Biennial Update Reports (BURs) to the UNCFCC, highlighting the efforts and achievements of the country in responding to climate change. However, many challenges still remain in effectively responding to climate change in Viet Nam, including integration of social aspects such as gender equality and gender inclusiveness into the development and implementation of sectoral and local climate actions.



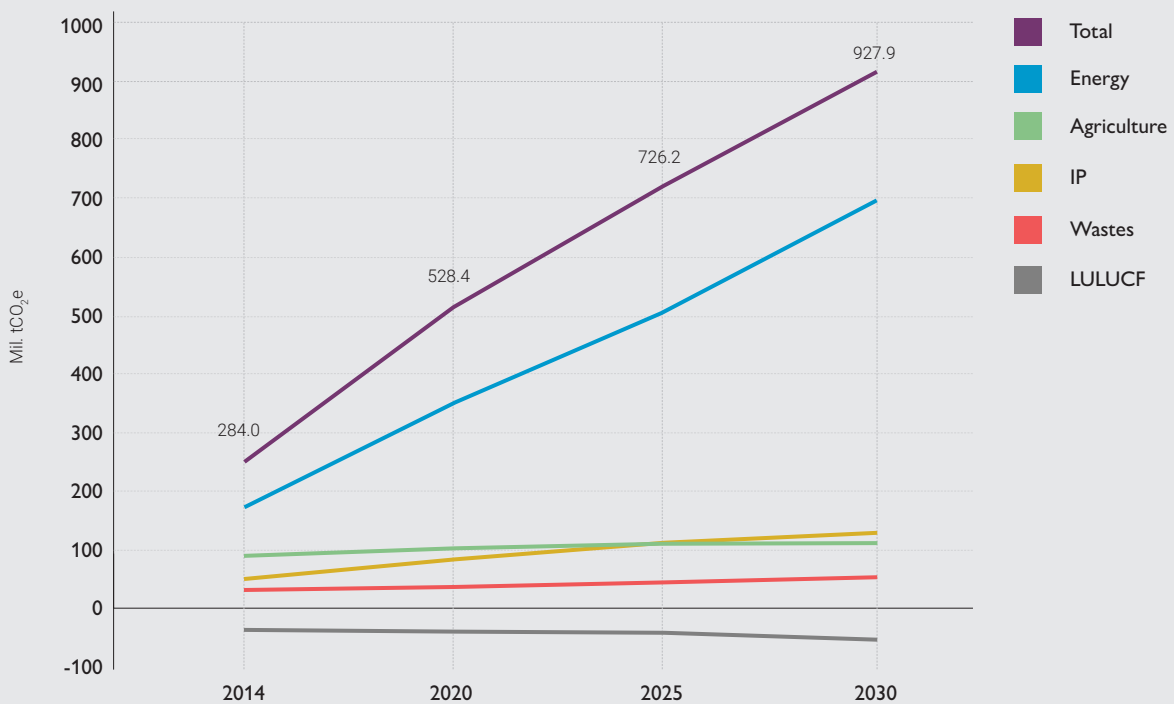
3.3.3 NDC of Viet Nam - International commitments for domestic benefit

Viet Nam submitted its first NDC (formerly INDC) in 2015 prior to COP 21 in Paris, France, with the objective of reducing its greenhouse gas emissions by 8% by 2030 compared to the business as usual (BAU) scenario with domestic resources, and by 25% with international support. In 2017, Viet Nam stated that it would update its NDC and received technical and financial support from NDC Partnership and other development agencies. The details of Viet Nam’s NDC review and updating process is presented in Annex 2.

According to the technical report on the updating of the NDC of Viet Nam, the economic benefits of mitigation options in 5 key sectors were analyzed (see Annex 3). For example, in energy, the mitigation options will (i) contribute to economic development through developing new industries, creating a favorable investment environment, developing installation and maintenance facilities, reducing costs, improving competitiveness and creating new business opportunities and (ii) reduce energy imports and the reliance on external resources, and contribute to stable and sustainable economic development [25].

Figure 15.
GHG emissions under the BAU Scenario in Viet Nam

Source: The updated NDC of Viet Nam (2020)



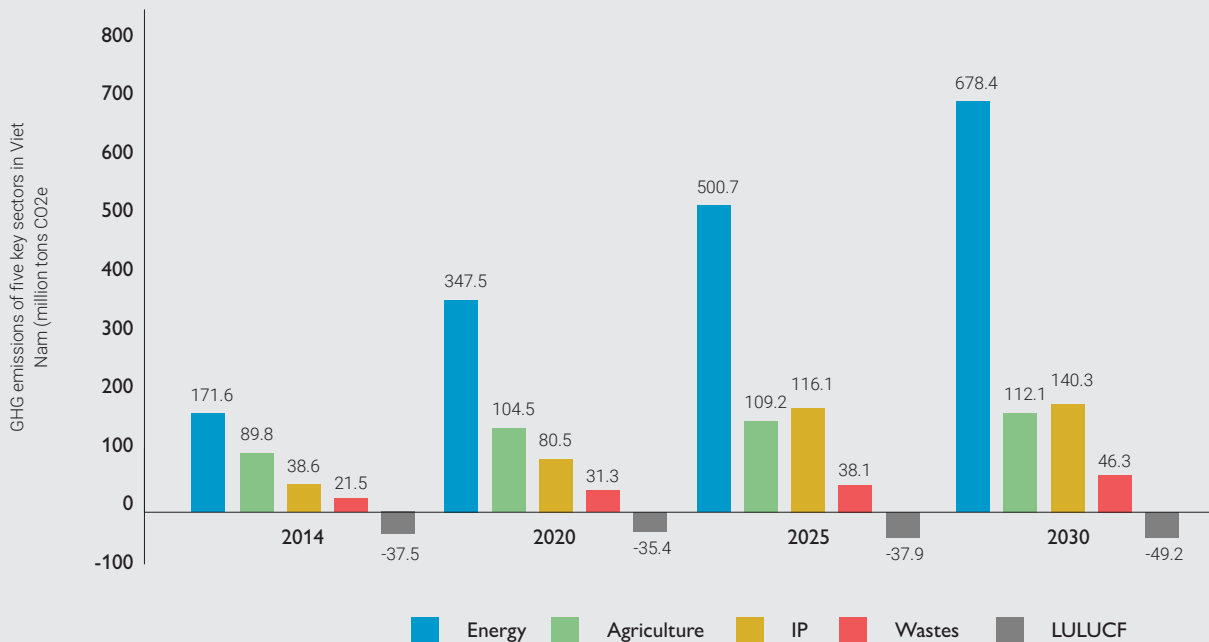
Depending on the sector, mitigation options were prioritised differently; for example, mitigation options in the agriculture sector (i) allow farmers to implement new cultivation processes through the application of more advanced technologies, leading to more sustainable production; (ii) generate direct positive impacts on agricultural production; and (iii) improve the value and competitiveness of exported goods. The requirement is that socio-economic development of the country is ensured at the same time that GHG emission reduction targets are achieved.

For Land Use, Land-Use Change and Forestry (LULUCF), mitigation options (i) allow forests to help protect manufacturing facilities, therefore indirectly stabilizing biodiversity and production; (ii) through afforestation and forest protection, increase the value of forest environmental services, e.g. payments to individuals and communities for forest environmental services should help to provide income to forest residents; (iii) through mangrove forests, provide natural spawning, food sources and seeds for aquaculture; and (iv) through ecological certification, generate higher prices from aquaculture in mangrove forests, compared to using other methods - contributing to increased local incomes for individuals and encouraging communities to plant and protect mangrove forests.

In waste, the benefits are: (i) high quality organic fertilizers that would help improve soil quality and crop yields, leading to higher incomes for farmers and enterprises involved and local economic development; and (ii) sources of renewable energy through the recovery of landfill gas for power generation, and a partial substitute for the use of fossil fuels.

Figure 16.
GHG emissions inventoried data of 5 key sectors in Viet Nam
in 2014 and projection for 2020, 2025 and 2030

Source: Derived from the technical report
for updating Viet Nam's NDC [25]



The updated NDC of Viet Nam specifies GHG reduction targets in five sectors (instead of 4 sectors as in the first NDC submitted to UNFCCC in 2015 [30]). Table 6 indicates the reduction targets in % and in tonnes of CO₂eq, with and without international support.

Table 5. GHG emissions reduction targets of 5 sectors with domestic resources and with international support

Sector	Contribution with domestic resources		Contribution with international support		Total	
	Compared to BAU (%)	Reduction amount (mil. Tonnes of CO _{2eq})	Compared to BAU (%)	Reduction amount (mil. Tonnes of CO _{2eq})	Compared to BAU (%)	Reduction amount (mil. Tonnes of CO _{2eq})
Energy	5.5	51.5	11.2	104.3	16.7	155.8
Agriculture	0.7	6.8	2.8	25.8	3.5	32.6
LULUCF*	1.0	9.3	1.3	11.9	2.3	21.2
Waste	1.0	9.1	2.6	24.0	3.6	33.1
IP	0.8	7.2	0.1	0.8	0.9	8.0
TOTAL	9.0	83.9	18.0	166.8	27.0	250.8

Note (*): increase in GHGs sequestration

Source: Adapted from the updated NDC of Viet Nam (July 2020)

In the updated NDC, intervention areas for each sector also identified. In the energy sector, for example, the GHG reduction will be focused in: the energy production industry; industrial production and construction; transportation and residential; agriculture; and services which use significant energy [4, 25]. Meanwhile, in the waste sector, the intervention areas are waste landfills and producing materials from solid wastes (Table 6).

Table 6. Key areas to implement GHG emissions reduction measures

Sector	Key intervention areas
1. Energy	<ul style="list-style-type: none"> • Emissions from fuel burning • Energy production • Industrial production and construction • Transportation • Others: Households, agricultural and commercial services
2. Agriculture	<ul style="list-style-type: none"> • Rumen digestion • Organic manure management • Rice cultivation
3. Land use, land use change and forestry (LULUCF)	<ul style="list-style-type: none"> • Forest land • Cultivated land • Grasslands • Wetlands • Other land
4. Waste	<ul style="list-style-type: none"> • Waste landfills • Producing materials from solid waste
5. Industrial processes (IP)	<ul style="list-style-type: none"> • Building materials • Chemicals • Consumption of HFCs

Source: Derived from technical report for updating Viet Nam's NDC [25]



Photo: UN Environment Programme/Kon Karampelas

The adaptation component of the updated Viet Nam's NDC identifies strategic tasks in order to improve adaptive capacity, enhance resilience, and reduce risks caused by climate change, thus contributing to the achievement of the country's sustainable development goals.

The identified strategic tasks are: (i) enhancing adaptation efficiency through strengthening state management and resources; (ii) increasing the resilience and adaptive capacity of communities, economic sectors and ecological systems; (iii) reducing disaster risks and minimizing damages, and preparing for increased natural disasters and climate extremes due to climate change. These strategic tasks are consolidated in the National Adaptation Plan (NAP) for period 2021-2030 with a Vision to 2050 (2020), and the National Action Plan to Respond to Climate Change to 2020 (2012). As a policy intention, NAP's implementation results will be used as inputs for the review and evaluation of the NDC's adaptation component [29]. Adaptation efforts will be evaluated biennially based on evaluating the implementation of strategic tasks in the NDC, and specific actions in the NAP. The results will be reflected in the Adaptation Communication and the biennial transparency report (BTR) submitted by Viet Nam to the UNFCCC Secretariat.



Photo: UN Environment Programme/Hendrik Schuette

IV. Assessment of gender integration in climate change

4.1 Assessment of gender integration in climate change policies

The government of Viet Nam (GoV) recognizes the importance of having both women and men equally involved in tackling climate change and other environmental challenges. However, despite affirmation from government leaders in general, and the Ministry of Natural Resources and Environment (MONRE), in particular, that gender mainstreaming must be applied to climate change related policies, inconsistency remains in its integration into climate strategies and action plans.

The most recent policy documents in Viet Nam related to climate change and disaster risk management (DRM), the National Target Program to Respond to Climate Change (2008) and the National Strategy on Climate Change (2011),²⁴ include gender equality as a guiding principle and objective, respectively.

The Law on Environmental Protection (2014) also stipulates that environmental protection must take into account both gender and climate change considerations. Moreover, at the time of writing, this Law is being revised to integrate gender into specific parts of the Law (MONRE's informant, 2020).

In 2016, Viet Nam approved the Ha Noi Recommendations for Action on Gender in Disaster Risk Reduction to improve gender integration in the implementation of the Sendai Framework (2015-2030) for DRR on the occasion of Regional Asia-Pacific Conference on Gender and DRR. The Hanoi Declaration presented essential measures for promoting gender equality and women's leadership capacity in the Four Priorities for Action under the Sendai Framework, namely: understanding disaster risk; strengthening disaster risk governance to manage disaster risk; investing in disaster risk reduction for resilience; and enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. The Hanoi Recommendations were incorporated into the two-year Regional Plan that was approved at the Asian Ministerial Conference for Disaster Risk Reduction in New Delhi, in November 2016. Accordingly, the first eight communal plans on disaster prevention and control in 2016 were formulated with the participation of over 600 people (50% are women) (BPFA Report, MOLISA, 2018).

Viet Nam has also made an international commitment to mainstreaming gender and women's empowerment in responding to climate change. The 3rd National Communication Report of Viet Nam to the United Nation Framework Convention for Climate Change (UNFCCC) (2018) not only affirmed the GoV's proactive commitments to respond to climate change [36], but also analyzed the impact of climate change on gender equality and women's vulnerabilities to extreme weather events. The recently updated Nationally Determined Contribution (NDC)²⁵ submitted in September 2020 to the UNFCCC, also makes specific reference to gender in the context of climate change²⁶.

This said, gender equality is not explicitly mentioned in some key climate change policy frameworks, including the National Action Plan for Climate Change (2011-2020) issued by the Prime Minister in Decision No. 1471/QD-TTg, and the Action Plan Responding to Climate Change for Natural Resource and Environment Sector.

Furthermore, the Law on Promulgation of Legal Documents states that gender integration is one of the principles that must be guaranteed in formulating an amendment or new legislation. However, in the Law, Article 59 states that a gender mainstreaming report is only required if the amended or proposed laws have regulations related to gender equality issues. Additionally, the Law does not regulate, define, or set indicators that identify gender issues. Accordingly, this results in limited gender integration during policy and law-making processes.

²⁴ Decision No. 2139/QD-TTg dated 5th December 2011 by the Prime Minister.

²⁵ Viet Nam is one of the top countries affected by climate change and its related natural disasters. Being aware of the negative impacts of climate change, Viet Nam has actively issued and implemented various climate change mitigation and adaptation policies and programs. In September 2020, the government of Viet Nam (GoV) submitted its updated Nationally Determined Contribution (NDC) to the United Nation Framework Convention for Climate Change (UNFCCC) with a target of reducing 9% of total greenhouse gas (GHG) emission by 2030 compared to business as usual (BAU) scenario.

²⁶ "Climate change, increased natural disasters and climate extremes produce different impacts on women and men. While men are exposed to more risks due to their involvement in search and rescue operations, women are generally more vulnerable to health and socio-economic problems. Several negative impacts of climate change on women's health include increased prevalence of diseases and epidemics, especially among pregnant women, girls, women with chronic diseases and elderly women".



Photo: UN Environment Programme/Dang Cong

4.2 Gender equality in NDC development and implementation

According to the INDC technical report, the development of the first NDC of Viet Nam encompassed management, technical and consultation processes [30]. The technical process involved four steps, namely, (i) identifying and analysing existing information; (ii) identifying and analysing the prioritized GHG emission reduction measures; (iii); identifying and analysing prioritized adaptation measures, and (iv) developing the INDC. There is no evidence that gender issues were integrated in the first NDC development (personal communication).

Gender equality has been enshrined in the Paris Agreement, of which Viet Nam is a signatory. The commitment to the implementation of Paris Agreement (2016) requires Viet Nam to undertake 68 climate change adaptation tasks incorporating the development of the ecological system, protection of diversified ecosystems, and utilization of indigenous knowledge, with priority given to the most vulnerable communities.

Under the Paris Agreement, member countries of UNFCCC will update NDC every 5 years. In Viet Nam, the review process started in May 2017, with the final draft of the NDC being reviewed in June 2020 by high-level experts prior to its submission to the Prime Minister (PM).

The Prime Minister of Viet Nam approved the updated NDC on 27 July 2020, with a commitment to reduce GHG emissions by 9% compared to the business as usual (BAU) scenario by 2030 with domestic resources, and by 27% with sufficient international support. Viet Nam submitted its updated NDC to UNFCCC on 11 September 2020 as one of few countries submitting increased GHG emission reduction targets. In this updated version, gender equality was also mentioned in the section relating to climate change impacts to sectors and areas [25].

MONRE coordinated the NDC review process and prepared the technical report, which served as the foundation for updating climate mitigation options and adaptation priorities (by sector and region).

During the NDC review process, various consultations on gender equality were held with organizations such as CCWG, UN Women, UNEP, UNDP, GIZ and other women's organizations and CSOs advocating for the inclusion of gender considerations in the NDC [39].

Prior to COP 25, Climate Change Working Group (CCWG)²⁷ of Viet Nam also submitted a list of 13 recommendations to strengthen gender integration into climate change policies and actions [40]. These were:

1. Developing and implementing a **Gender Action Plan** in response to climate change and disaster reduction for Viet Nam
2. Collecting **gender disaggregated data** in policies, plans, monitoring and evaluation in implementation of gender programs
3. Identifying **goals and gender-specific indicators** in monitoring and evaluation framework relevant to implementation of National Adaptation Plan (NAP) carried out by line ministries
4. Enhancing **women's economic empowerment** in vulnerable sectors and industries due to climate change and disasters
5. Ensuring **financial support** for gender-sensitive programs and projects
6. Ensuring **financial priority** for climate change adaptation programs and projects initiated or led by women
7. **Raising awareness, knowledge, capacity, and participation of men and children** in climate change adaptation projects initiated or led by women
8. Enhancing the **leadership capacity** of women in social institutions and organizations
9. Increasing the proportion of **women in leadership** boards at agencies and social organizations working on climate change/disaster prevention
10. **Raising awareness, knowledge and capacity on gender for leaders** in agencies and social organizations working on climate change
11. Making priority **policies for women in training and employment** in areas and jobs that help reduce greenhouse gas emissions and the effects of climate change and natural disasters
12. Developing policies, programs to support and compensate women who have suffered **trauma from loss after natural disasters**
13. **Communication** products on climate change and natural disasters must ensure gender equality.

²⁷ Established in early 2008, the CCWG brings together INGOs, Vietnamese NGOs, development agencies and other professionals who contribute to reducing the vulnerability of poor people in Viet Nam to the impacts of climate change through NGO coordination, advocacy and capacity building for environmentally and economically sustainable and socially just responses to climate change

BOX 2:

Gender equality in the Paris agreement on climate change

Paris Preamble "Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as **gender equality, empowerment of women** and intergenerational equity"

Article 7, paragraph 5 of the Paris Agreement states "Parties acknowledge that adaptation action should follow a country-driven, **gender-responsive**, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental

policies and actions, where appropriate";

Article 11, paragraph 2 of the Paris Agreement states that "Capacity-building should be country-driven, based on and responsive to national needs, and foster country ownership of Parties, in particular, for developing country Parties, including at the national, subnational and local levels. Capacity-building should be guided by lessons learned, including those from capacity-building activities under the Convention, and should be an effective, iterative process that is participatory, cross-cutting and **gender-responsive**".



Photo: UN Environment Programme/Simon Fanger

4.3 Sectoral climate policies and assessment of integration of gender equality

In the following sections, two sectors under climate change adaptation (agriculture and water management) and two sectors under climate change mitigation (waste management and renewable energy), will be analyzed from a gender-sensitive perspective.

4.3.1 Agriculture

4.3.1.1 Impact of climate change on agriculture

Agriculture is the sector that will be hardest hit by climate change in Viet Nam. Rising temperatures will increase crop growth rates, shortening plants growth cycles; at the same time, the risk of severe droughts and water shortages for irrigation will continue to increase, with water demand for agriculture expected to double, or even triple, by 2100, compared to 2000 [15]. Climate change is also increasing the spread and reproduction of pests, which thrive amidst higher temperatures and rainfall. The growing season and crop distribution are also changing; in Viet Nam, growth may be delayed by up to 20-25 days and, by 2100, tropical crops may only be found at elevations of 100-150m and move 100-200km northward. In addition, rising sea levels are reducing annual rice and maize production. Animal husbandry will be affected through a reduction in feed sources, creating obstacles for livestock growth and reproduction. In short, climate change is shrinking agricultural land, especially in low-lying coastal lands²⁸, and negatively affecting growth, productivity and cultivation schedules.

According to a report prepared by FAO (2019), agriculture contributes 21% of Viet Nam's GDP, and employs over 47% of the country's labor force. Women constitute a critical workforce in agricultural production, especially in rural areas, where 63.4 percent of working women are in agriculture compared to 57.5 percent of working men [41]. The relatively larger proportion of women in the agricultural labor force is the result of the 'feminization of agriculture'; that is, women having to take up a rising share of farmwork due to the outmigration of men to the city to pursue urban job opportunities. At the same time, they continue to play other roles that include reproduction, community development, and taking care of the elderly and ill.

²⁸ <https://ccafs.cgiar.org/Viet Nam#Xy93G5MzZZ0>

Any impacts of climate change on the agriculture sector will thus directly affect women relatively more than men. This is compounded by the fact that gender inequality also still persists when it comes to accessing resources that would otherwise support them, such as land, finance, training, markets and agricultural extension services.

The conversion of land from agriculture to other uses has created scarcity of farmland, which further affects women's agricultural production and livelihoods as well. For example, nearly one million hectares of agricultural land were converted for industrial purposes or commercial use in both public and private economic development projects during the period 2001-2010 [42].

4.3.1.2 Measures/options to reduce climate impacts on agriculture

Climate change adaptation measures in the agriculture sector are mainly aimed at:

- developing a commodity agriculture sector that is **clean, diversified, and sustainable**, with easy access to new scientific and high-tech applications, and the ability to compete in local and international markets;
- developing **new rural areas** with modernized technical infrastructure and a reasonable economic structure based on agriculture, industry and services;
- ensuring **enough jobs, reducing poverty and improving quality of life** among rural communities; and
- ensuring **food security and eco-agricultural development**.

In 2016, the Ministry of Agriculture and Rural Development (MARD) developed an action plan in response to climate change, consisting of 54 tasks [43]. Highlighted in this plan was the need to “[i]ntegrat[e] gender in implementing action plans, ensuring gender equality, improving social security and diversifying livelihoods for women and farmers in vulnerable areas due to climate change”.

So far, only 21 tasks have been implemented, none of which specifically include a gender component.

Moving forward, the agricultural sector will continue to implement the tasks set out in MARD's action plan and other national strategies and programs on climate change.

The main tasks include: assessing the impacts of climate change and sea level rise on sub-sectors of agriculture and rural development; developing programs and projects for agricultural sub-sectors in line with local contexts, including responses to climate change and the creation of development opportunities; and mainstreaming climate change and sea level rise into action plans, policies, strategies for sectoral and provincial development. In this mainstreaming process, social aspects, particularly gender perspectives will be of interest.

4.3.1.3 Gendered impacts of climate change in agriculture

Vietnamese women and men undertake different roles and responsibilities in agriculture. In animal husbandry, women are found to be more involved in taking care of poultry and production of dairy products, as well as food processing, preparation and selling, while men tend to take on work related to large animal care, fishing, hunting, and slaughter. In the fields, women undertake planting and grass cutting, while men are in charge of pesticide spraying [44]. In the community, women tend to attend meetings organized by the Women's Union or those associated with family planning and population, while men participate in a wider range of political activities such as those relating to law, security, and agriculture/ forestry extension [19].

In Viet Nam, agriculture and animal husbandry are not lucrative activities so men from rural areas who assume the gender role of being the primary provider of the family, tend to migrate to urban areas to pursue other income opportunities; especially since extreme weather events create higher fluctuations in agricultural production [45]. Women remain in the countryside, and assume responsibility for agricultural production and food security, as well as taking care of children and the elderly [46]. According to Josephine et al., (2019) the majority of them are older women and women with infants who do not have opportunities to leave the rural work in agriculture. This results in the ‘feminization’ of agriculture, whereby farming is not only done by women, but women are also expected to stay in rural areas to undertake farming activities and practices due to gendered norms and rules [45].

Table 7. Unemployment and underemployment rate of labor force at working age by region and by sex by year, region, rate and sex in 2019

Sector	Unemployment rate		Underemployment rate	
	Male	Female	Male	Female
Whole country	2,09	2,26	1,19	1,37
Red River Delta	1,96	1,67	0,66	0,80
Northern midlands and mountain areas	1,58	0,96	1,33	1,37
North Central area and Central coastal area	2,48	2,46	1,46	1,92
Central Highlands	1,28	1,47	1,48	1,44
South East	2,44	2,46	0,34	0,40
Mekong River Delta	2,09	4,03	2,18	2,60

Source: GSO, 2019

Water insecurity as a consequence of climate change increases the workload for women, especially those involved in small scale farming as they have to spend more time and effort on land preparation, fetching water, watering and protecting crops from diseases [10].

Limited land-use rights, and **lack of access** to the necessary tools and financial and material resources, further restrict their capacity to adapt to climate change [46].

Although the Land Law (2013) indicates that women can legally register land-use rights alongside their husbands, usually only the names and signatures of male partners/husbands are written on the certificates [45]. Thus, there remain disparities in women's access to land, particularly as a result of patrilineal inheritance customs.

Restricted land rights further limit women's **access to credit** programs needed to undertake climate change adaptation activities, diversify income sources and recover from losses. For example, to receive microcredit often requires land and/or assets as collateral, which women do not typically have [41].

Cultural norms also tend to see men as a key decision maker; and women as a contributor to any decision made by their husbands, under the form of suggestions. This, in turn, limits their **control over family finances**: women tend to be in charge of daily petty cash,

while men manage important purchases, investments and business expansion. Women's limited capacity for self-determination and decision-making ultimately affects their ability to adapt to climate change.

Unequal access to knowledge, resources, and training also puts women in an unfavorable position. Although they hold primary responsibilities for production, they have limited access to and use of novel technological solutions for higher productivities or crop adjustment [41]. Notably, 71% of rural women laborers have no access to vocational training compared to 60% of men (MARD cited in UN Women and FAO, 2014). Without knowledge and skills, women cannot effectively adapt their farming activities to climate change (FAO, 2019).

Underlying patriarchal norms further tie women to both their productive and reproductive responsibilities. This double burden results in "**time poverty**" which leaves women with little and/or no time for political participation and leisure time, while men have time for engaging in activities outside of their homes. Women's limited mobility coupled with a lack of opportunities for acquiring knowledge and understanding of climate change and its risks further impact their adaptation potential.

The overall burden and restrictions on rural women will likely increase as a result of continued gender inequality, increased production requirements, and climate change impacts. In particular, women's limited access to and control over assets and resources, lower level of education and mobility, fewer alternative opportunities for livelihoods and lack of decision-making power will limit their potential to adapt and intervene in related climate change policies and strategies.

Women's autonomy and status in the household and community is believed to increase if they have access to land-use rights and hold control over assets. This may eventually help to change the norms and attitudes towards the "masculine" economy and men's social behavior towards women [45].

4.3.1.4 Gender integration into climate change policies in agriculture sector

Of all the sectors reviewed in this study, gender appears to be most integrated into climate policies in the agriculture sector. The clear and obvious impact of climate change to agriculture has led to the development of several measures to reduce the climate impact to agricultural production; in the process, gender issues have received more attention than in other sectors.

Incorporation of gender mainstreaming in some key national policies, but absence in others

Climate change in agriculture has received significant attention from the Ministry of Agriculture and Rural Development (MARD); accordingly, the ministry has developed a number of policies, ranging from directives to action plans and programmes (Table 8).

As stated in the updated NDC (2020), the sector requires both mitigation and adaptation actions. GHG reductions are expected to be achieved through rumen digestion, organic fertilizer management and rice cultivation. More specifically, there will be a need to apply management and technological solutions in cultivation and animal husbandry, improving diets for animals, shifting crop production structures, changing land-use methods and using technology for treating and re-using by-products and waste in agriculture and livestock production, and promoting organic agriculture. To date, the contribution of adaptation actions in agriculture and rural development has been most remarkable in afforestation and reforestation activities [25].

Table 8. The climate change policy framework in the agricultural sector

Time	Name of documents	Governing documents	Implementing duration	Gender indicators
2020	Plan to implement the Paris Agreement of the Ministry of Agriculture and Rural Development for the period 2021-2030 with a vision to 2050. Decision No. 891/QĐ-BNN-KHCN dated March 17, 2020 of MARD	Decision 2053/QĐ-TTg on the Plan to implement the Paris Agreement	2021-2030	None
2018	Action plan to implement the 2030 Agenda for the sustainable development of the agriculture and rural development sector. Decision No. 1308/QĐ-BNN-KH April 13, 2018 of MARD	VN SDG 2030	2030	(Likely). Increase resilience for the poor and those vulnerable to extreme weather events. Hunger eradication for the poor and vulnerable, ensuring food security, nutrition and safe food for all (esp. pregnant women)
2017	Action plan on green growth in agriculture sector to 2020 (Decision No. 923//QĐ-BNN-KH dated 24 March 2017	National Strategy on Green growth in period 2011-2020	2011-2020	None
2016	Action plan on Response to CC in the agriculture and rural development sector period 2016 - 2020 and vision to 2050 (MAPCC)- Decision No.819/BNN-KHCN dated 14 March 2016.	National Action Plan on CC period 2012 – 2020	2016-2020, vision to 2050	Gender mainstreaming into action plans, ensuring gender equality, improving social welfare, diversifying livelihoods for women and farmers in areas vulnerable to climate change
2011	Program of GHG emissions reduction in the agriculture and rural development sector by 2020 (Decision No. 3119/QĐ-BNN-KHCN dated 16 December 2011)	Action plan on Response to CC in the agriculture and rural development sector 2011-2020.	2011-2020	None
2011	Directive on integrating CC into the development, and implementation of strategies, planning, plans, programs, projects of the agriculture and rural development sector; period 2011-2015 (No.809/CT-BNN-KHCN dated 28 March 2011)	Action plan framework 2008 and Action plan on Response to CC in the agriculture and rural development sector 2011	2011-2015	None

Source: Synthesized and assessed from MARD's climate related policy documents

The agriculture sector is the 2nd largest contributor to GHG emissions in Viet Nam, after the energy sector [25]. The sector's action plan focuses on assessing the impact of climate change, integrating climate change into its development policies and investing into infrastructure adaptive to climate change. Related strategies and measures have been increasingly concrete, comprehensive and synchronized (MARD's informant, 2020).

This said, the main focus in policy tends to be on technical aspects, such as crop yields and food security, rather than on social aspects, such as gender equality (Table 8).

The National Action Plan for Climate Change for Rural Development and Agriculture sector (2016-2020) and the vision towards 2050 articulated in Decision No. 819/QĐ-BNN-KHCN which was issued by the Minister of MARD in 2016 does however mention mainstreaming gender into action plans to ensure gender equality, social welfare improvement, and diversification of livelihoods for women and farmers in the regions hardest hit by climate change.

The Decision was stipulated to strengthen gender integration into activities and list of duties responding to climate change in the sector. More specifically, it requires the evaluation of the role, capacity, and participation of women; study methods of gender mainstreaming; and capacity development for women.

The National Target Program on Sustainable Poverty Reduction and the National Target Program on Rural Development for 2016-2020 also require the inclusion of gender mainstreaming into the annual and five-year implementation plans of these target programs (MOLISA, 2019).

However, gender equality is not mentioned in the Action Plan for Green Growth of Rural Development and Agriculture Sector issued by Decision No. 923/QĐ-BNN-KH.

Gender integration across national policies is critical to ensuring effective implementation of climate change adaptation interventions in agriculture, where climate vulnerability and the participation of women is high, and accompanied by gender gaps in access to resources, information, technologies, markets, and labor burden. The current climate change policy framework of agriculture sector lacks a holistic and sustainable approach by not addressing gender issues, and thereby limits both female and male farmers' capacities to participate in, and contribute to, climate change adaptation. In particular, policies do not fully recognize the different rights, responsibilities, and knowledge and experiences of men and women in relation to agricultural production. Climate change will likely exacerbate the current situation of female farmers.

Availability of access to preferential credit for women in poor rural areas

The GoV provides to the rural poor, including women, some access to credit through the Viet Nam Bank for Social Policies (VBSP) via the Farmers' Association, Women's Union, and Youth's Union. The Women's Union also provides some sources of preferential loans for members from poor and near-poor households. Approximately 2.5 million poor women are eligible for loans each year, making up 42% of the loans from VBSP.

The Bank of Agriculture and Rural Development (AgriBank) is another important channel of credit provision for women [10]. This financial policy is in line with several targets set in the National Strategy on Gender Equality for 2011-2020, including 80% of women laborers in poor rural areas or ethnic minority regions being able to access preferential credit through employment or poverty reduction programs.

Recognition of gender in national digital transformation policy

The updated NDC of Viet Nam (2020) highlights the need for new technologies and livelihood diversification for rural women, but also stresses that gender inequalities should not be exacerbated by the introduction of such technologies. Significantly, the Prime Minister of Viet Nam issued Decision No.749/QĐ-TTg in June 2020 on digital

transformation, whereby the Decision clearly states that agriculture would be one of 8 prioritized sectors for the digital era. The exclusion of women in this process will trigger a trend of feminization of poverty caused by a digital divide.

Lack of consideration of women's vulnerabilities in responding to climate change

One of the shortcomings of the policies reviewed is that there are no specific targets or activities identified to address women's vulnerabilities in responding to climate change. Vulnerable groups are not discussed in the context of climate change impacts, except for in selected policies such as the SDG action plan. The omission of gender-sensitive and other intersecting vulnerabilities will affect the capacity to fully implement these strategies.



4.3.2 Water management

4.3.2.1 Water management challenges in context of climate change

Water is a trans-boundary resource. 71% of the earth is covered by oceans, and 60% of land in water basins is shared by countries; some countries even share a common water ecology system. Only 3% of water is fresh water for use in daily living and 2/3 of water on earth is ice in the Northern and Southern Poles; the rest is ocean water that cannot be consumed.

Yet, water resources are over-exploited and polluted due to weak water management. According to a water resource report released by the World Bank in 2017, water scarcity impacts 40% of the world population [20]. 70% of deaths from natural disasters are water-related.

In the Mekong River, the construction of a hydroelectric power dam upstream in China is causing floods and seasonal water scarcity downstream. The impact is seen clearly in Viet Nam, especially in the Southern region, where people are facing a lack of water for agricultural production; this, in turn, is creating dramatic losses in rice production.

Climate change is worsening the situation, with an increasing number of extreme and complicated climate events such as typhoons, floods, and droughts – leading to a scarcity of fresh water; reductions in agricultural production, destroyed ecological systems and increased incidences of water-related diseases. During 2011-2014, the direct cost for health treatment for diseases related to water pollution and lack of clean water in Viet Nam was approximately 400 billion Viet Nam Dong (6 billion cases). Indirect costs not accounted for included lost working time, patient care and reduced productivity (MOH, 2014). With women holding primary responsibility for taking care of sick people in their families, their incomes and jobs are, in turn, affected.

4.3.2.2 Measures/options for adapting to the impact of climate change

Many climate change adaptation measures for water resources have been implemented as part of national and ministerial programs, including (i) Mekong River Delta water supply planning and safe water supply projects; (ii) the Red River Delta program on water resource management and climate change adaptation, jointly implemented by relevant ministries and provinces; and (iii) the Response to Climate Change program for large cities in Viet Nam, with priority given to projects to prevent inundation in Ho Chi Minh City, Hanoi, and Can Tho. In addition to the framework program and large-scale projects, detailed assessments of climate change impacts on water resources and adaptation measure are conducted.

The National Strategy on Climate Change, which was issued by the Prime Minister in Decision No. 2139/QĐ-TTg dated 5 December 2011, is a long-term orientation document (to 2050) with a cross-century vision for responding to climate change in Viet Nam and is the basis for development of other strategies. The overall objectives of the Strategy include “developing the capacity of the whole country, simultaneously implementing measures adapting to the impacts of climate change and reducing greenhouse gas emissions, ensuring safety of people’s lives and properties, while aiming at sustainable development” and “strengthening human capacity to adapt to climate change and natural systems, developing a low-carbon economy to protect and improve the quality of life, ensuring national security and sustainable development in the global context and actively joining the international community in protecting the earth’s climate system”. Among ten strategic tasks, the second task focuses on ensuring food security and water resources.

More recently, the National Adaptation Plan (NAP) adapting to climate change for 2021-2030 period with a vision to 2050 was approved on 20 July 2020,³⁰ with the general objective of *reducing vulnerability and risk to the impacts of climate change through strengthening resilience and the adaptive capacity of communities, economic and ecological sectors and promoting the integration of climate change adaptation into strategic and planning systems.*

There are three specific objectives: (i) improving the effectiveness of climate change adaptation through strengthening state management on climate change, including climate change adaptation, and promoting adaptive integration into socio-economic development strategies and plans; (ii) increasing resilience and enhancing the adaptive capacity of communities, economic sectors and ecosystems through investments in adaptation actions, science and technology, and awareness raising; and (iii) disaster risk reduction and damage reduction, preparedness to respond to natural disasters and increased climate extremes due to climate change [29]. There are 5 key areas of intervention; where actions related to water resources can be found, specifically, 3 key goals and 12 specific tasks as presented in Table 9.

³⁰ Decision No. 1055 / QĐ-TTg dated July 20, 2020 of the Prime Minister) in which water was among the priorities

Table 9. Overview of targets and related tasks for water resources in National Adaptation Plan

Targets/ specific objectives	Tasks related to water resources
Improve efficiency of water resource management in climate change conditions	<ol style="list-style-type: none"> 1. Develop a National Strategy on Water Resources to 2030, with a vision to 2050 2. Develop a master plan on water resources for the period 2021-2030, with a vision to 2050 3. Build integrated planning of inter-provincial river basins and inter-provincial water sources 4. Review and adjust inter-reservoir operation procedures in river basins
Strengthen monitoring and protection of water resources	<ol style="list-style-type: none"> 5. Complete the national water resources monitoring and monitoring system 6. Determine areas where underground water exploitation is restricted, especially the Mekong River Delta 7. Restore and develop protection forests and mangrove forests in order to protect water sources and prevent riverbank and coastal erosion
Increase water storage capacity and improve water efficiency	<ol style="list-style-type: none"> 8. Investigate, evaluate and develop total solutions for water storage based on natural trends of each area 9. Classify water scarcity, propose water storage measures, saving water and limiting water exploitation and use according to each level of water scarcity 10. Investigate, evaluate and identify solutions to artificially supplement underground water for the Mekong River Delta, South Central Coast and Central Highlands to improve the efficiency of sustainable use of underground water resources in variable conditions of climate change 11. Develop, deploy and multiply models of economical and efficient water use 12. Build infrastructure to store water, exploit and use water resources in increasing drought conditions due to climate change

Source: Synthesized from NAP of Viet Nam (2020) [29]

4.3.2.3 Gendered impact of climate change in water management

Water insecurity caused by climate change affects all people but, in comparison to men, ethnic minorities and poor women are more severely impacted by the shortage of clean water [49-51].

In Viet Nam, 65% of households do not have access to clean water. Meanwhile, women and girls are the primary water collectors for their families [52]. According to traditional roles and social norms, Vietnamese women are assigned to house chores such as washing, cooking, and caring for all family members. Thus, they are expected to bear the burden of securing water resources for their family, which may include travelling long distances to collect clean water [53]. Moreover, as water resources become scarcer, their workloads increase.

Women's health is also more sensitive to a lack of clean water than that of men's due to their need for clean water during menstruation, pregnancy and caregiving. Without this primary demand being met, their sexual and reproductive health and rights can be threatened. Women who live with insecure water, sanitation and hygiene conditions are also at greater risk for violence and sexual abuse. Sommer and colleagues (2014) found a relationship between the lack of access to water and sanitation, and violence against women, as women and girls in remote areas often have to travel long distances from their houses to fetch water [54]. Furthermore, carrying water on one's shoulders for long distances puts women at risk for spinal injuries.

Lack of access to clean water may also hinder women's self-development, as spending large amounts of time collecting water restricts their social and educational opportunities [49, 53]. As a result, they may have relatively limited knowledge and technical skills, creating further challenges along the line in climate change adaptation and mitigation, as well as diminishing their own mental and physical well-being. Education facilities without proper water and sanitation systems can also cause complications for women and girls' participation in school.

Finally, women's economic well-being can be influenced by a shortage of water. Collecting water requires time and effort that could otherwise be channeled into increased productivity income. At the same time, majority of water resources (92%) is used in agriculture and aquaculture in Viet Nam [55]. Vietnamese women account for the majority of labour in the agriculture sector. In rural area, 63.4% women working in agriculture compared to 57.5% male farmers (Ngan Anh, 2018*). Thus, climate induced water scarcity puts women at risk of losing their crops that ultimately leads to income losses.

4.3.2.4 Gender integration in water management

The need for gender integration in water management has been globally recognized by development agencies since 1992, at the International Conference on Water and Environment in Dublin. One of the four Dublin principles for integrated water resource management is that "women play a central part in the provision, management, and safeguarding of water." (ICWE, 1992*).

In Viet Nam, the government recognizes the significance of gender equality in securing water resources in the response to climate change. The government has pursued Goal 6 of the Sustainable Development Goals (SDG6) with efforts to ensure the availability of water and sanitation for all. Accordingly, Viet Nam's goal is "to achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations" [52]. To achieve Goal 6, the government has developed general policy programmes on climate change that include objectives to ensure water security, such as the National Target Program in Response to Climate Change (2008); the National Strategy on Climate Change Response (2011); the Law on Natural Disaster Prevention and Control (2013); and Decision No. 1055/QĐ-TTg dated July 20, 2020 approving the National Adaptation Plan to address climate change from 2021-2030 (2020).

In these legal frameworks, gender equality is considered in implementation (Care, 2015; Nguyen, 2017). In particular, the National Rural Clean Water Supply and Sanitation Strategy to 2020 developed in 2000, and updated in 2010, highlights the significance of gender issues – specifically, that both men and women must be included in decision-making and in water groups (WB, 2019). The government has also made efforts to promote gender equality in other relevant legal documents. For example, in Decision No. 1722/QĐ-TTg 2016, approving The National Target Program for Sustainable Poverty Reduction 2016 – 2020, supplying clean water is set as a program index. The Decision has sub-projects to improve water/irrigation construction, and women are considered as one of the targeted beneficiary groups.

Although the GoV is committed to gender equality in water and sanitation, in relation to the response to climate change, gaps remain both in policy and implementation. These gaps lead to inequalities in access to water and sanitation.

Data from the program Water for Women show huge disparities in access to water and sanitation between urban and rural populations, and the rich and the poor in Viet Nam: “Only 45% of the rural population has access to piped water supply that meets Ministry of Health water quality standards. While 95% of the richest urban quintile has a piped water connection on premises, only 35% of the poorest have access to this service. In rural areas, only 3% of the poorest quintile has a household connection, while 43% of the richest quintile do. Female-headed households are disproportionately excluded given their relatively low household incomes. Only 72% of people in rural areas have access to basic sanitation, and many continue to use unhygienic and often dangerous facilities, which contaminate the environment and water resources.” (Water for Women, AusAid).

Gaps in gender integration in water management include:

Inexplicit mention, or absence, of gender integration in national policies. A review of legal documents and studies reveals that gender issues have been mentioned as an “add-on” component. As a result, there are no policies focused on gender-mainstreamed approaches to managing water [50].

Only Decision 366/2012 QĐ-TTg and Decision No. 1600/2016 QĐ-TTg include the role of the Women’s Union (see Table 7). The terms gender or women are completely absent in the remaining water policies reviewed. These documents use neutral gender pronouns when mentioning beneficiaries of programmes. A gender-blind perspective will not respond effectively to the different implications of water scarcity on women and men and, ultimately, these gender-blind policies might exacerbate existing inequalities [58].

Even in Decision No. 1722/QĐ-TTg in 2016 on approving The National Target Program for Sustainable Poverty Reduction 2016 - 2020, which emphasizes women as beneficiaries of the supply of clean water, lacks indicators, which means that program monitoring and evaluation will lack a gender perspective.

Table 10. List of climate policies of the water management sector in Viet Nam

Time	Name of documents	Proposed/ Issued by	Implementing duration	Gender indicators
2000	Decision No. 104/2000 approving the National Strategy on rural clean water supply and hygiene until the year 2020	MARD and MPI	2000 - Present	None
2006	Decision No. 277/2006/QĐ-TTg dated December 11, 2006, approving the National Target Program on rural clean water and environmental sanitation in the 2006 -2010 period	MARD	2006 - 2010	None
2012	Decision 366/2012-QĐ-TTg on approving the National Target Program on Rural Clean Water and Environmental Sanitation, phase 2012 – 2015	MARD and MPI	2012 - 2015	None. However, the role of the Women's Union in the implementation is included.
2012	No. 17/2012/QH13 Law on Water Resources 2012	National Assembly	2012 - Present	None
2012	Decision No. 1397/QĐ-TTg dated September 25, 2012, approving the Mekong River Delta Irrigation Plan for the period of 2012-2020 and orientation to 2050	MARD	2012 - Present	None
2012	Decision No. 1554/QĐ-TTg dated October 17, 2012, approving the Irrigation Planning of the Red River Delta for the period of 2012-2020 and orientation to 2050	MARD	2012 - Present	None
2012	Decision No. 1588/QĐ-TTg dated October 24, 2012, approving the Regional Irrigation Plan for the period of 2012-2020 and orientation to 2050	MARD	2012 - Present	None
2013	Decree 201/2013/ND-CP details implementation of a number of articles of the Law on Water Resources	MONRE	2013 - Present	None
2014	Decision No. 182/QĐ-TTg dated 23/01/2014 issuing the National Action Plan to improve the efficiency of management, protection and integrated use of water resources in the period of 2014-2020	MONRE	2014 - Present	None
2015	Decree 43/2015/ND-CP regulates the establishment and management of water source protection corridors	MONRE	2015 - Present	None
2015	Decree No. 54/2015/ND-CP stipulates incentives for economical and efficient use of water	MONRE	2015 - Present	None

Table 10. List of climate policies of the water management sector in Viet Nam (continued)

Time	Name of documents	Proposed/ Issued by	Implementing duration	Gender indicators
2016	Decision No. 1600/2016 QD-TTg dated 16 August 2016 approving National Target Program: Developing New Rural 2016-2020	MARD	2016 - Present	None. However, the role of the Women's Union in the implementation is included
2017	No. 08/2017/QH14 Law on Irrigation 2017	National Assembly	2017 - Present	None
2017	Decree No. 82/2017/ND-CP stipulates the method of calculation and collection of charges for granting water right	MONRE	2017 - Present	None
2017	Decision No. 622/QD-TTg dated 10 May, 2017, the National Action Plan to implement the Agenda 2030 for Sustainable Development	MOIT	2017 - Present	Gender equality is included in all development fields including the water sector
2018	Decree No. 114/2018/ND-CP on safety management of dams and reservoirs	MARD & MOIT	2018 - Present	None
2018	Decree No. 67/2018/ND-CP dated May 14, 2018, detailing a number of articles of the Law on Irrigation	MARD	2018 - Present	None
2018	Decree 167/2018/ND-CP dated December 26, 2018, restricts underground water exploitation	MONRE	2018 - Present	None
2019	Decision No. 1748/QD-TTg dated December 4, 2019, of the Prime Minister, approving the Task of making master plan on water resources in the 2021-2030 period	MONRE	2019 - Present	None
2020	Decision No. 1055 / QD-TTg dated July 20, 2020 of the Prime Minister approving the National Adaptation Plan (NAP) adapting to climate change for 2021-2030 period with a vision to 2050	MONRE	2020 - Present	Gender was mentioned in vision to 2050 and some tasks such as Develop specific policies to support vulnerable groups, mainstream gender in climate change adaptation activities and Develop a Communication Project to promote green growth, including "Gender and climate change", "Gender equality with climate change"

Unclear policies and guidelines, and a lack of capacity among officials. Even where national policies recognize the significance of gender issues in designing programs in response to climate change and water management, in practice, the effectiveness of gender mainstreaming is modest (MONRE's informant, 2020). The Plans for Natural Disaster Prevention and Control at provincial levels and the Climate Change Action Plan have little or no reference or specific actions to support gender equity. In other words, gender integration is present in policies on Climate Change only; it does not extend to subsections of strategies and plans (Care 2015; UNDP & CCWG 2017).

Inconsistency between national and provincial policies in relation to gender integration.

No explicit guidelines on gender mainstreaming exist to support local officials in implementing programs. Consequently, monitoring and evaluation of gender integration in water management programmes is cursory; and, in the end, sex-disaggregated and gender data is limited. A review of the 21 provincial reports of the program "Results-based Scaling up Rural Sanitation and Water Supply" funded by World Bank (2019) revealed that although sex-disaggregated data was included in the reports, there was no impact analysis on gender equality or gender power relations. A possible reason for the lack of gender-based reports in general is that line agencies are not required to produce them.

Despite the crucial role of women in securing water pointed out in the Dublin conference, in many national policies related to water and gender, women are seen as one of many vulnerable groups and beneficiaries only. Policies rarely focus on women as potential change agents to preserve water resources (CARE 2015; Nguyen 2017).

Most policies have been proposed by MARD, MONRE and MPI - agencies where the highest positions are held by male representatives (IFS-UTS, 2011).

Women's participation in environmental impact assessment is also limited. Examining women's participation in the Law on Environment Protection issued in 1993 and revised in 2014, the report of CECR (2015) contends that the Law on Environment Protection 2014 and relevant guides do not mention the role of women, and that women are not consulted in common practice. The Viet Nam Women's Union was included in some policies such as Decision 366/2012 QD-TTg and Decision No. 1600/2016 QD-TTg. However, their roles in relation to planning and decision-making around water management are not clearly defined; only their role in cooperating with relevant agencies in implementing programs is specified. This finding is consistent with Oxfam's in that "the national women's mechanism is sidelined from decision-making in environmental agendas" [50] and that their potential to responding climate change is overlooked [59]. The two units providing consultancy on environmental impact assessment are the People's Committees and the Vietnamese Fatherland Front [60].

Studies by IUCN and Oxfam in 2018 also show an absence or limitation of Vietnamese women in the decision-making processes of community meetings. A study on water management in both upstream and downstream Mekong Delta in Viet Nam reveals that rural women at the research site were likely to be more disadvantaged than men, and have limited involvement in the decision-making processes [57]. In community meetings, most representatives were men, as women stayed at home to attend to house chores; women only participated in discussions if their husbands or male members of their families were unable to attend. Housework also takes away access to information and knowledge, and thus impacts the self-confidence of women. Consequently, even if women participated in water management meetings, they lacked the confidence to raise issues [61].

Lack of transparent and published reports on gender integration in water management.

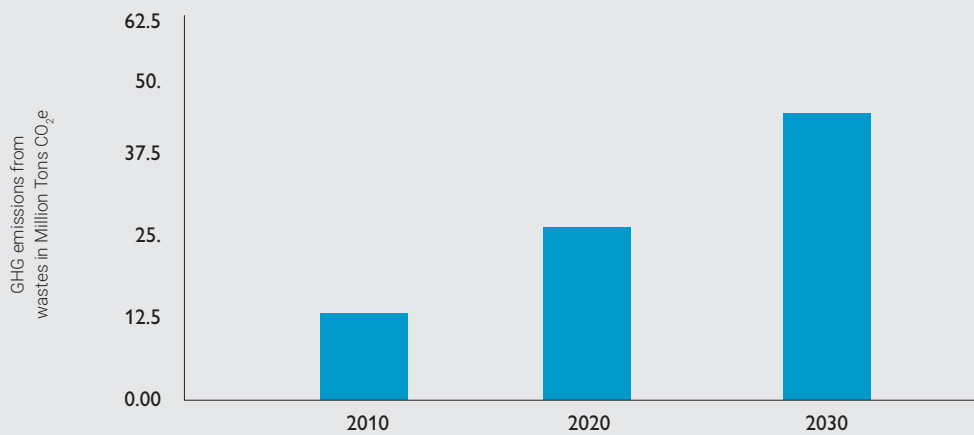
The Mekong River Commission has developed a Commitment on Gender Mainstreaming in Water Resources Development in the Lower Mekong Basin [62]. Viet Nam, as a member of the Mekong River Commission, is required to mainstream gender in its action plan to develop water resources. However, as shown, most national policies or programmes on water management have not clearly incorporated gender issues. There is no precise mechanism for the monitoring and evaluation of gender mainstreaming in water management policies. Reports on gender mainstreaming in water management issued by the government are absent or not published.

4.3.3 Waste management

4.3.3.1 Greenhouse gas emissions in waste management

GHG emissions from the waste sector in Viet Nam are projected to increase to 48 million tons CO₂e by 2030 from 15.4 million tons in 2010 (Figure 15), owing to population growth and the limited availability of GHG emissions capture technologies in Viet Nam.

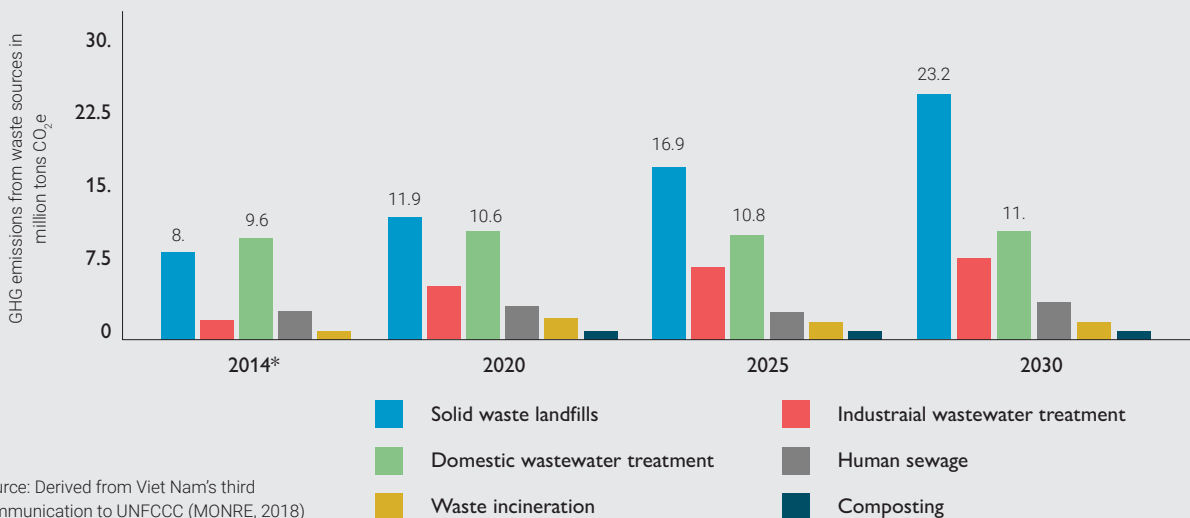
Figure 17.
GHG emissions from the waste sector in Viet Nam in 2010 (inventoried) and for 2020 and 2030 (projected)



Source: Technical report for updating NDC of Viet Nam (MONRE, 2020)

Within the waste sector, GHG emissions from landfills are expected to increase significantly from 8.0 million tons in 2014 to 23.2 million tons of CO₂eq in 2030. GHG emissions from domestic wastewater treatment are forecasted to increase slightly from 9.6 million tons in 2014 to 11.0 million tons CO₂eq by 2030 (Figure 16).

Figure 18.
GHG emissions from different sources of waste sector in 2014, projection for 2025, 2025 and 2030



Source: Derived from Viet Nam's third communication to UNFCCC (MONRE, 2018)

According to a report released by UNEP (2014), the waste sector can contribute to the reduction in GHG emissions in six ways: (i) landfill methane recovery; (ii) waste incineration with energy recovery; (iii) composting of organic wastes; (iv) controlled wastewater treatment; (v) recycling and waste minimization; and (vi) biocovers and bio-filters to optimize CH₄ oxidation.

In the technical report to formulate the INDC of Viet Nam in 2015 [30], three options to reduce emissions from solid wastes were proposed with corresponding emission reductions (Table 11).

Table 11. Mitigation options in the waste sector financed by domestic resources

Mitigation option	Mitigation potential for 2021-2030 (tco _{2e} /year)	Mitigation potential by 2030 (tco _{2e})
W1. Organic fertilizer production	20,993,309	3,580,372
W2. Landfill gas recovery for electricity and heat generation	2,091,155	328,448
W3. Recycling of solid waste	1,263,664	253,069
Total	24,348,128	4,161,889

Source: Derived from Viet Nam's third communication to UNFCCC (MONRE, 2018)

From 2011 to 2019, waste management was regulated by the Law on Environmental Protection 2014, Decree 38/2015/ND-CP on waste and scrap management, Decree 40/2019/ND-CP on amendments and supplements, some articles of Decrees guiding the implementation of the Law on Environmental Protection, and various circulars. The national strategy for integrated management of solid waste to 2025, vision to 2050 has also been revised (Decision 491/QD-TTg dated May 7, 2018) in order to better provide direction for investment and the state management of solid waste.

Solid waste management planning has been carried out for regions, river basins and localities. At the regional level, planning on the construction of solid waste treatment areas of the three key economic regions of the North, the Central and the South up to 2020 (Decision No. 1440/QD-TTg dated October 6, 2008), the construction of a solid waste disposal complex in the Mekong Delta key economic region to 2020 (Decision No. 1873/QD-TTg dated 11/10/2010) and the master plan on solid waste management in the northern key economic regions in 2030 (Decision No. 1979/QD-TTg dated 14/10/2016) have been promulgated. There have been 3 approved river basin solid waste management plans, including one for the Cau river basin (Decision No. 2211/QD-TTg dated 14 November 2013), and the rivers of Dong Nai (Decision No. 07/QD-TTg dated 6 January 2015) and Nhue-Day (Decision No. 223/QD-TTg dated 12 February 2015).



Photo: UN Environment Programme/Anh Vy

At the provincial level, to date, all 63 provinces/cities have approved solid waste management planning in their respective areas. At the commune level, according to the 10-year summary report on the implementation of new rural construction, nearly 100% of the total number of communes have new rural planning, in which the location of transfer points has been determined³¹ (MARD, 2019).

Solid waste management has improved in recent years. The rate of urban domestic solid waste collection and treatment has increased from 82-84% in 2012 to 86.5% in 2019. The rate of rural household solid waste collection stood at 40-55% in 2015; it has since increased to ~ 63.5% in 2019. However, currently, 71% of municipal solid waste is still being buried, mostly in an unsanitary manner. The recycling rate of urban daily-life solid waste is only 8-12%. The burning of solid waste to recover energy is not popular, and has only been implemented in projects in Hanoi, Ha Nam, Quang Binh and Can Tho. In rural areas, where there are mainly hygienic landfills, many localities burn waste without collecting energy³².

In the updated NDC of Viet Nam, the waste sector is identified in the mitigation component and effective waste management forms a part of the roadmap for GHG emissions reduction covering the period of 2021-2030. The management and recycling of solid waste and sewage is a growing problem in most urban areas due to concerns related to both public health and environmental impacts. Meanwhile, improvements in waste management and overall avoidance, re-use and recycling of waste hold great potential for reducing GHG emissions in multiple sectors, such as agriculture, industry and manufacturing (M.Muller & A. Schienberg, 1997)³³.

In the waste sector, GHG emissions occur directly through the process itself, as well as indirectly, due to the use of energy. The largest share is emitted from landfills and during wastewater management. Uncontrolled burning of waste is a common practice in Viet Nam and another significant source of GHG emissions contributing to climate change. In addition, waste creation, treatment and disposal have multiple adverse environmental and social impacts.

³¹ Ministry of Agriculture and Rural Development, 2019, Summary report on 10 years of implementation of the National Program of New Rural Construction period 2010-2020

³² In the period of 2011-2015, Nam Dinh has built a communal solid waste incinerator with collection and transportation. Since 2016, it has been replicated in many localities such as Nghia Dan (Nghe An), Cam Xuyen, Can Loc (Ha Tinh), Hung Yen, Uong Bi (Quang Ninh), Tam Diep (Ninh Binh), Thanh Liem. (Ha Nam), Quang Binh

³³ <https://www.gdrc.org/uem/waste/swm-gender.html>

4.3.3.2 Gendered impact of climate change in the waste sector

Gendered division of household tasks and gendered consumption patterns influence waste generation and management in the household. Given women's primary responsibilities for cleaning, food preparation, family health, and domestic chores in general, women and men may have different views on domestic waste and waste disposal (B.Woroniuk & J.Schalkwyk, 1998)³⁴. They may also establish different priorities in relation to public health and environmental standards.

Women make up to 85% of decisions concerning domestic food purchases, and thus have a great influence on household waste management and separation at the source (CECR, 2019)³⁵.

Women's heavier **workload** also influences their time spent on waste disposal, and their priorities towards waste disposal.

Improved waste management can help ease women's overall work burden, and a healthy and clean environment can decrease their **care responsibilities** for people sickened by pollution (M.Muller & A.Schienberg, 1997).

Although 100% of women surveyed by CECR (2019) are responsible for housework and collecting, classifying and disposing household waste, their participation in **community decision-making** about waste disposal is limited. Men are more likely to take part in the community consultation processes (CECR, 2019), leaving women's preferences on waste management neglected. Without women's participation, their priorities, responsibilities, and needs are not heard at the institutional level.

Employment opportunities in waste disposal, solid waste management and wastewater treatment in some urban areas has evolved into an organized system of collection, trading and recycling. The division of labor has thus become clearer between women and men (B.Woroniuk & J.Schalkwyk, 1998). As reported in an ILO report on informal employment (2016), female workers account for the majority of the informal labor force (43.5% of 18 million in total) whose areas of activities include, but are not limited to, management of recycled waste and plastic waste. 90% of street waste collectors and scavengers are women [63]. In Ho Chi Minh City, for example, women purchase solid waste from households as door-to-door itinerant buyers, while men purchase waste from a range of small, medium and large shopkeepers. Middlemen link shopkeepers with recyclers, and men run recycling or production units and sell to end-users. In Da Nang and Ha Noi, two cities covered by the CECR report (2019), 85-90% of recycling and treatment facilities workers were female, hired to perform more skilled and patience-requiring tasks, such as sorting, cleaning and separating waste. Men, meanwhile, carry out more physically taxing tasks, such as loading or unloading and transporting of waste. In these two cities, women own half of these facilities [63].

³⁴ Waste disposal & Equality between women and men, B.Woroniuk & J.Schalkwyk, 1998.

³⁵ Women Empowerment in Plastic Waste Value Chain Report, CECR, 2019 funded by GoV of Canada.

In urban areas of Viet Nam, local governments are in charge of collecting, transporting, and managing the majority of waste (about 85%), especially solid waste from households, via Urban Environment Company (URENCO) under the state management of City People's Committee and other enterprises. The rest (about 6%) is collected by the informal sector; 9% of waste is not collected (VVB, 2018). Recyclable materials collection and treatment is largely taken care of by the informal sector, in which a large share of women make their living from collecting, sorting, recycling and selling valuable materials.

Despite waste-pickers' contribution to urban waste management, they often live and work under **dangerous and unhealthy conditions** and suffer from extreme poverty and discrimination in several ways. Women waste pickers often do not have protective clothing or equipment (CECR, 2019). Waste collection is, moreover, viewed as the "dirtiest" and lowest paid job in Viet Nam, typically undertaken by the poor and uneducated (CECR, 2019). They are mainly women aged 50-70, and children of all ages, from rural areas who have migrated to urban areas (CECR, 2019). Both men and women waste workers are confronted with disrespect from fellow-citizens. Most landfills in Viet Nam have poor sanitary conditions and do not meet labor safety standards; yet, 97.9% of informal workers have no access to social and health insurance, nor information about labor rights, regulations on workplace hygiene and safety or registration for these insurances (CECR, 2019). Women often spend more than 8 hours per day in poor, unhygienic and unsafe landfills without any annual leave.

In the plastic waste value chain, women often bear the brunt of the work and suffer from marginalization while making a fraction of what male workers earn. Men tend to work at night in remote sites like waste dumps or factory sites, when most garbage trucks arrive, enjoying better-paid jobs. According to CECR's report (2019), the daily income of women is only 78% of men's because men are involved in jobs collecting higher value waste (e.g. electronic devices vs. paper, plastic bottles etc.).

Gender specific health risks of working with waste materials are not yet documented, but can be inferred. The gender division of labour, therefore, will strongly influence men and women due to their differential exposure to specific health risks, and how this affects their children. Data show that women working in the plastic waste value chain have physical contact with toxic gas, bacteria, parasites and a dust level 3-7 times higher than standards allow. 52% of waste collectors contract diseases like dengue, flu and dermatological issues, and 28.6% are prone to bronchitis and lung diseases [63], as shared by Environment and Development in Action in Ho Chi Minh City. According to a report prepared by Center for Environment and Community Research in 2019, occupational accidents, such as hand cuts and injuries, are more likely for female garbage collectors (94.6%), as are traffic accidents (23.6%).

4.3.3.3 Gender integration into the waste sector policies in the context of climate change

In order to decrease GHG emissions from waste recovery, treatment and disposal, and minimize their adverse environmental and social impacts, national policies prioritize the overall reduction and avoidance of waste, in addition to an increase in re-use and recycling. The legal framework of Viet Nam at the national level has emphasized effective solid waste management as shown in Table 12.

Table 12. List of key policy documents related to waste management in Viet Nam

National Policies/Strategies	Document No.	Year of Issuance	Gender Indicator
Law on Environmental Protection (revised)	Law No.72/2020/QH14	17 November 2020, in effect by 1/1/2022 and the preliminary assessment of environmental impacts valid by 1//2/2021	“Environmental protection needs to be combined with social welfare, children’s rights, gender equality promotion, and ensure people’s right to live in a safe and healthy living environment”
Law on Environmental Protection	Law No. 55/2014/QH13	2014	“Environmental protection needs to be combined with social welfare, children’s rights, gender equality promotion, and ensure people’s right to live in a safe and healthy living environment”
National Strategy on Solid Waste Management by 2025, vision to 2050	Decision No. 2149/QĐ-TTg	2009 (With 10 programs of solid waste management in all sectors including MONRE, MARD, Ministry of Construction etc.)	None
Adjustments to the National Strategy on Solid Waste Management by 2025, vision to 2050	Decision No. 491/QĐ-TTg	2018	None
Planning on Solid Waste Management for Key Economic Zone of the North by 2030	Decision No. 1979/QĐ-TTg	2016	None
Draft revised Law on Environmental Protection	Drafting	Expected to pass in 2020	“Environmental protection needs to be combined with social welfare, children’s rights, gender equality promotion, and ensure people’s right to live in a safe and healthy living environment”
National Action Plan on Marine Plastic Debris Management (NAP) by 2030	Decision No. 1746/QĐ- TTg	2019	Women’s Union together with other socio-political organizations need to continue their campaign and communication efforts of saying No to plastic waste and disseminate policies to the whole of society.

As analyzed in the previous section, most waste value chain activities were undertaken in the informal sector, where women form the majority of workers. However, their jobs are not recognized in the existing laws.

Incomplete legal protection of women

Although the 2015 Law on Environmental Protection mentions gender equality promotion, the law and its sub-laws do not acknowledge the role of these informal workers, even in Chapter 9, which specifically addresses waste management.

Similarly, there is no particular reference to gender issues with regard to waste collection and recycling in the Labor Law [63]. Despite working in a dangerous places like landfills or dump sites, the Law on Social Insurance and Health Insurance has no provision for informal workers to benefit from social security, other than through purchasing voluntary insurance - which most cannot afford to do [40]. Currently the Law (2014) or the draft-revised law only focuses on assessing the project's impacts on the natural environment, bio-diversity and community health. This overlooks the impacts of the changing environment on the well-being, culture and livelihoods of affected communities.

Although Law on Environmental Protection and guiding documents do not specifically mention women's participation, the Viet Nam Women's Union may take part in the implementation of the law at all levels. The Viet Nam Women's Union has more than 19 million members, including 105,000 officials from central to grassroots levels, and across all agencies. Its members regularly participate in activities such as meetings and the implementation of the initiatives of the Viet Nam Women's Union. The Viet Nam Women's Union is assigned to disseminate and propagate policies and has an advisory role as well. Its members work closely with local authorities for initiatives related to environmental protection and waste management, such as the campaign of "5 No-s and 3 Clean-s" around waste disposal at the source. The targeted participants of these activities are women, who help to convey the message to the public, communities, schools and families. The latest law (approved on 17 November 2020) also discussed natural resource taxes and environmental protection taxes; however, there is no mention of gender in the taxation principles.

As stated in NDC (2020), in the waste sector, many solid waste treatment plants have been built and put into operation with new and advanced technologies, combined with compost production, contributing to reducing landfill amounts and limiting environmental impacts. Measures taken by the waste sector are crucial, as the sector is the 3rd largest contributor to GHG emissions in Viet Nam, after energy and agriculture (NDC, 2020). Technology is also of social and economic importance to women, men, and their households [64]. The updated NDC also encourages and supports communities to develop ecological city models, green rural areas, green houses, and waste separation models with methods for reducing, recycling, reusing, and improving energy efficiency, and pilot and scale up of community-based, ecosystem-based climate change adaptation models to improve people's livelihoods.

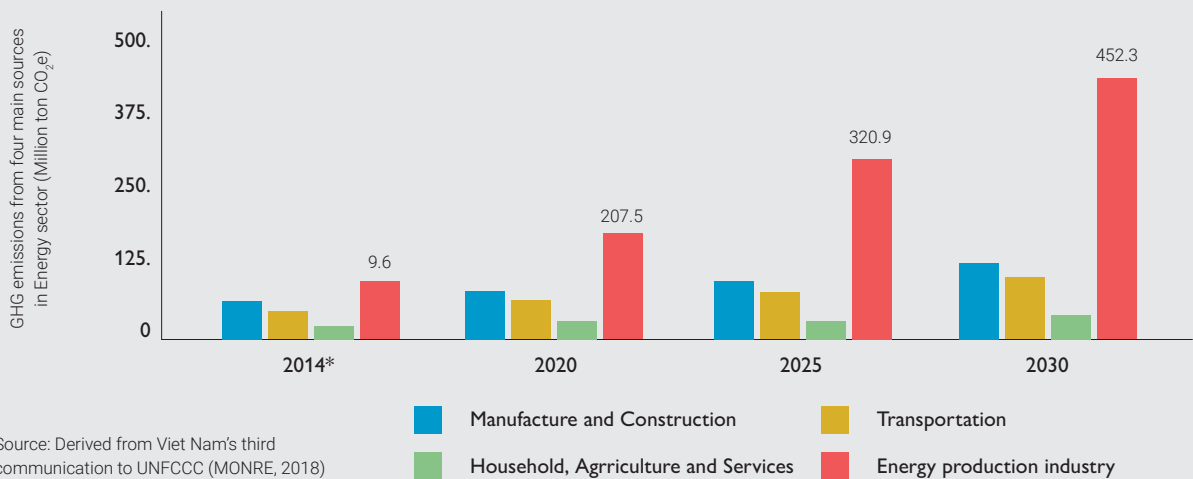
Overall, any policies or activities aiming at waste management that contributes to GHG emissions reduction must identify affected groups and invite them to participate in the policy-making process. This will allow for the analysis of differentiated factors and the joint development of an approach that will enable disadvantaged groups to benefit equally from new opportunities in waste management.

4.3.4 Renewable energy

4.3.4.1 Climate change and energy

As climate change intensifies, all countries, including Viet Nam, are being urged to reduce GHG emissions so as to limit the average global temperature increase to 1.5 degree Celsius by 2030. Viet Nam made strong commitments to climate change adaptation and mitigation through its Nationally Determined Contributions (NDC), which sets the target of a 9% reduction in CO₂ emissions, using measures including land-use change, forest management and reforestation, low-carbon farming practices, and renewable energy development [14]. Current and future projections of GHG emissions from the energy sector are presented in Figure 17.

Figure 19.
GHG emissions from four main sources in energy sector measured in 2014 and projection for 2020, 2025 ad 2030



The data presented in the above figure shows that GHG emissions from the energy production industry has dramatically increased from 75.4 million tons CO₂e in 2014 to 207.5 million tons CO₂e in 2020; in 2030 the number is predicted to reach 45.23 million ton CO₂e - which is more than 7 times the figure in 2014. Reduction GHG emissions from the energy sector is critically important to achieve Viet Nam's 9% GHG emissions reduction target by 2030.

Viet Nam's first high-capacity wind farm, with 30 MW, was inaugurated by the Viet Nam Renewable Energy Joint Stock Company (REVN), in the central province of Binh Thuan on 18 April 2020. Two other projects — the Phu Quy island hybrid grid with 6 MW, and the near-shore Bac Lieu Phase 1 with 16 MW — were both completed in 2013. No new capacity was added in 2014 or 2015.

Provincial wind power development plans were published in 2016 for eight provinces: Bac Lieu, Ben Tre, Binh Thuan, Ca Mau, Ninh Thuan, Quang Tri, Soc Trang and Tra Vinh, with the 24 MW Phu Lac project in Binh Thuan province and the 83 MW Bac Lieu Phase 2 were completed in the same year. The following year, the 30 MW Huong Linh 2 project in Quang Tri province was connected. By the end of 2018, the total installed wind power capacity in Viet Nam reached about 228 MW. The Trung Nam project in Ninh Thuan province inaugurated in April 2019 is a hybrid facility, co-locating a 40MW wind farm (to be extended by 112 MW in Phase 2) with a 204 MW solar PV plant [23].



According to the Prime Minister's 2016 energy plan, solar power was expected to reach 850 MW (0.5%) by 2020, about 4,000 MW (1.6%) in 2025 and about 12,000 MW (3.3%) by 2030 [24]. In the first half of 2018, the Ministry of Industry and Trade (MOIT) recorded 272 solar power plant projects in the planning stage, with a total capacity of about 17,500 MW, 9 times higher than the Hoa Binh hydropower plants and 7 times more than Son La hydropower plant. By the end of 2018, there were about 10,000 MW registered, of which 8100 MW was newly added to the plan. More than 100 projects had signed power purchase agreements, and two projects came into operation with a total capacity of about 86 MW [25].

Viet Nam has significant opportunities to develop gender-responsive climate policies and development programs fostering mitigation strategies in the energy sector. On one hand, the provision of electricity to the off-grid population and the poor in remote rural areas can create positive socio-economic impacts, bringing about economic opportunities and employment in the community. Providing energy via affordable small-scale solar systems for lighting and cooking and off-grid solutions can also support the delivery of public services, including education, healthcare, and the development of livelihoods (UNDP, 2020), and contribute to the implementation of SDG 7 (Affordable and Clean Energy), as well as climate change mitigation and adaptation measures laid out in the updated NDC.

4.3.4.1 Climate change and energy

According to the technical report for updating NDC of Viet Nam (MONRE, 2020), there are 12 groups of measures that can be implemented to reduce GHG emissions in energy sector (Table 13).

Table 13. Mitigation areas and assumptions in energy sector

No.	Areas/interventions for GHG reduction	Notes
1	Attracting investment, production and business projects relating to the economical and efficient use of energy in the production, manufacture, renovation and market conversion of vehicles, equipment, machines and so on.	
2	Use of high efficiency electrical equipment in household, industrial and commercial uses.	
3	Use of energy efficiency improvement measures in industries	
4	Renewable energy development consistent with Viet Nam's potentials, advantages and conditions	Relevant to this study
5	Efficient use of energy in transportation	
6	Change of freight mode; transport market restructuring	
7	Switching from private to public transport	
8	Switching from the use of traditional fuels to biofuels, natural gas and electric power	Relevant to renewable energy
9	Improvement in the energy efficiency of vehicles	
10	Improvement, development and application of technologies in the production of building materials	
11	Reduction in clinker content and implementation of other GHG emission reduction measures in cement production	
12	Development and application of energy-saving building materials and green materials in residential and commercial sectors	

Source: Derived from the technical report for updating Viet Nam's second NDC, (MONRE, 2020) [14]

There are 37 options or measures to reduce GHG emissions from energy sector proposed in the technical report prepared for the updated NDC of Viet Nam, in which 6 measures relate to renewable energies. These include: E20 - small-scale hydropower plants, with the total capacity of small hydropower plants expected to reach to 3,800 MW in 2020, 4,900 MW in 2025 and 5,500 MW by 2030; E21 - solar power, with total capacity expected to rise from 4,464MW in 2019 to 5,000 MW in 2020, replacing coal-fired power plants; E22- wind power, with total capacity expected to rise from 304.6MW in 2019 to 1,010 MW in 2020, replacing coal-fired power plants.

With international support, solar power capacity could rise to 9,500 MW in 2025 and 16,500 MW in 2030; wind power to 3,500 MW in 2025 and 8,400 MW in 2030 [25].

Renewable energy development is thus expected to be a potential solution to address the GHG emissions reductions in Viet Nam energy sector.

There are four key sources of renewable energy in Viet Nam: hydroelectricity, wind power, solar power and biomass. The potential for hydroelectricity is well developed and has almost reached potential capacity. By the end of 2018, hydropower was the largest source of renewable energy, contributing about 40% to the total national electricity capacity [26]. According to the Viet Nam Energy Outlook Report 2019³⁶, Viet Nam's medium and large hydropower sources have a potential capacity of about 20,000 MW and have been fully exploited. According to EVN, to date, 80 medium and large hydropower projects have been put into operation with a total capacity of about 16,000 MW (MOIT, 2019).

By 30 June 30 2019, 82 solar power plants, with a total capacity of about 4,464 MW, had been approved and commissioned by the National Electricity Regulatory Center. These projects were entitled to an electricity purchase price (FIT) equivalent to 9.35 US¢/kWh for a period of 20 years under Decision 11/2017/QĐ-TTg of the Prime Minister. At that time, solar power accounted for 8.28% of the installed capacity of Viet Nam's electricity system. Through the end of 2019, the Center was expected to put into operation 13 more solar power plants, with a total capacity of 630 MW, bringing the total number of solar power plants in the whole system to 95. The actual installed capacity at the end of 2019 reached almost 5 GW [27]. By end of 2020, Viet Nam would have a total of 172 solar power projects planned with a total capacity of 19,079 Wp, equivalent to 15,260 MW. However the policy for solar power development has changed.

In 2015, the Prime Minister issued Decision No. 2068/QĐ-TTg dated 25 November 2015, approving Viet Nam's Renewable Energy Development Strategy to 2030, with a vision to 2050³⁷. In 2016, Decision 428/QĐ-TTg issued on 18 March 2016, approved the Adjustment Plan of the national electricity development plan for the period of 2011-2020 with a vision to 2030 (Power Master Plan VII, correction). The plan sets the target that "the proportion of electricity generated from renewable energy sources will reach 7% by 2020, and over 10% by 2030".

The Prime Minister has also issued mechanisms and policies to encourage the development of renewable energy sources such as a support mechanism for wind power development (Decision No. 39/2018/QĐ-TTg dated 10 October 2018), amending and supplementing several articles of Decision No. 37/2011/QĐ-TTg of 29 June 2011, supporting the development of biomass power projects (Decision No. 24/2014/QĐ-TTg dated 24 March 2014 and Decision 08/2020/QĐ-TTg dated 5 March 2020, amending and supplementing several articles), solar power (Decision No. 11/2017/QĐ-TTg dated

³⁶ Viet Nam Electricity and Renewable Energy Department, Danish Energy Department, Viet Nam Energy Outlook, 2019

³⁷ The strategy sets out the direction to increase the share of renewable energy sources with the goal of "increasing the proportion of renewable energy generation from about 35% in 2015 to around 38% in 2020; to reach about 32% in 2030 and about 43% in 2050, and to reduce greenhouse gas emissions in energy activities compared to the normal development plan: about 5% in 2020; around 25% in 2030 and about 45% in 2050".



Photo: UN Environment Programme/Clement Chai

11 April 2017), the roadmap to apply the ratio of blending biofuels to traditional fuels (Decision No. 24/2014/QĐ-TTg dated 24 March 2014) and electricity generation using solid waste (Decision No. 31/2014/QĐ-TTg dated 5 May 2014).

Recently, the MOIT also launched the Program to promote the development of rooftop solar power in Viet Nam (Decision 2023/QĐ-BCT dated 5 July 2019). These mechanisms have promoted the development of electricity production from renewable energy with the strong participation of private businesses, especially in the field of wind and solar power.

According to a report of the MOIT, as at 2019, the country has 365 MW of **wind power** in operation. According to statistics from 29 localities with data, provinces with wind power projects in operation include Bac Lieu, Binh Dinh, Binh Thuan, Ninh Thuan and Quang Tri (Table 5). The MOIT also recently issued Document No. 1931/BCT-DL dated 19 March 2020, reporting to the Prime Minister on the planning of additional wind power projects.

There are currently about 10,000 MW of **solar power** registered. 8,100 MW has been added to the plan, more than 100 projects have signed power purchase contracts (PPA) and 4,500 MW have been put into operation.

There are 10 **biomass** plants with a combined grid capacity of about 212 MW, with several waste power generation plants in Hanoi, Ha Nam, Can Tho, Quang Binh, and many other localities building projects.

Regarding **biofuels**, E5 gasoline has been officially consumed in the market since 1 January 2018, currently accounting for about 50% of the consumer market share, and 9.8% of the total used gasoline (MOIT, 2019).

Currently, total electricity capacity from renewable energy sources in Viet Nam accounts for 6.47% of the total capacity of the system, approximately reaching the target of the revised VII electricity plan.

Currently there are no studies on the impact of renewable energy development in Viet Nam on gender equality. Male workers dominates the labor force involved in the development of renewable energies in Viet Nam. Renewable energy development will bring benefits to all, but for women in remote areas, there are multiple benefits.

4.3.4.3 Gendered impacts of climate change in the energy sector (renewable energy)

As in other sectors, both men and women are impacted by climate change in renewable energy, but women, mainly rural and ethnic women, are impacted disproportionately [37]. Gender inequality prevails in every field, including the renewable energy sector, restricting equality of access and opportunities for women.

Foell and colleagues (2011) find that the major fuels used in rural areas in developing countries are biomass, including wood and agricultural residues. All over the world, more than 2.7 billion people still rely on traditional biomass for cooking [70]. The traditional roles assigned for women often link with the kitchen and cooking, which is why women and girls are also the primary persons who with **responsibility to collect fuels**. When clean energy solutions are not available, rural women and girls, especially, have to travel far away to collect fuels. Climate change may lengthen distances that need to be traveled as natural resources become more scarce.

Action Aid and MOLISA (2017) indicate that 67.4% of the population in the northern midland and mountainous areas and 52% of the central highlands population cook with wood as their main fuel [65]. Women in these areas are burdened with collecting firewood. Having to collect cooking fuels far from home puts women and girls at the risk of **violence**, rape, and other crimes ([71]; [66]; [72]; [67]).

Shortages in cooking fuel also put women under pressure to ensure the nutrition and the health of their families. A lack of clean energy can also cause health problems for women and girls, as they inhale indoor pollution that is the result of burning firewood or biomass for cooking. These include respiratory infections, chronic respiratory diseases, and cardiovascular diseases [73].

As women and girls spend more time collecting fuels than men and boys, this also limits their opportunities to participate in other **economic activities, education, self-development** and simply enjoying their free time and social activities. As a result, their financial status is affected, and they become more dependent on their family members and their opportunities to access education and self-development are diminished [67].

According to UN Women (2012) statistics, women account for less than 6% of technical staff and below 1% of top managers. Most **renewable energy jobs** involve manufacturing, construction, and engineering, which are traditionally seen as suitable for men only, and therefore women are significantly underrepresented [74]. Through a survey of women's participation along the energy chain, Clancy (2016) finds that the numbers of female participants are generally low unless women are targeted for inclusive purposes.

While many studies show that women are the main users of fuels in their roles as agricultural workers, household cooks, and caregivers, women's representation is often absent in relevant community meetings, while women's political organizations participate modestly in consultancy and **decision-making** processes [57]; [50].

4.3.4.4 Gender integration into renewable energy

As women are the main consumers of daily energy in their traditional roles as household managers, their inclusion in the policies and programs to ensure renewable energy sustainability is crucial (Klugman et al., 2014; UN Women 2014 cited in Shankar, 2015). The intertwined relationship between women and energy was recognized in the ninth session of the UN Commission of Sustainable Development (UN, 2001). The report also urged governments to take women into consideration in energy development strategies and support women's equal access to sustainable and affordable energy technologies through needs assessment, policy formulation and energy planning at the local and national level (UN, 2001).

Shifting from fossil fuels to a mix of renewable energy, particularly solar and wind energy, in Viet Nam can lead to economic opportunities and strengthened livelihoods for both women and men. At the same time it can improve health, safety, and overall quality of life. In the National Action Plan to implement SDGs following Decision No. 622/QĐ-TTg dated 10 May, 2017, Viet Nam has identified Goal 7 "to ensure access to affordable, reliable, sustainable and modern energy for all" (GoV, 2017) as an important target. Thus, shifting to renewable energy and developing this sector is considered an action area for the achievement of sustainable development as well as equal access to clean and modern sources of energy for all citizens. According to a report prepared by the International Renewable Energy Agency (IRENA) in 2019, over 250,000 domestic biogas digesters have been deployed to benefit 1.2 million people in Viet Nam. One of those initiatives are under the EmPower project, led by UNEP, supporting women entrepreneurs in 3 provinces in Viet Nam (Bac Kan, Lao Cai and An-Giang) to use renewable energy as a means for developing climate resilient livelihoods. The use of solar irrigation systems, solar drying for agro-processing and fish, solar incubation for poultry, and solar cold storage are among the climate resilient interventions that have been identified.

Implementation on the ground is also supported by strong policies. The provincial Women's Union, provincial People's Party and other government departments, have developed action plans on women's entrepreneurship and renewable energy to further align with sectors identified in the NDCs, Green Growth action plan, and other SDG targets. The National Women's Startup Programme, led by Viet Nam Women's Union, also created a special category for renewable energy in 2020, with joint efforts from UNEP. This was a strong signal to women to increase their participation in this sector through establishing and running renewable energy solutions.

Another important initiative is the Viet Nam Biogas Program, implemented by SNV.³⁸ The conversion of animal manure into affordable energy can contribute to addressing climate change and save 1-1.5 hours for women each day³⁹, which they can instead spend on income generation and other activities. It also helps to increase well-being through health security and reducing the risk of lower respiratory illness – especially for women, who typically responsible for cooking and fuelling activities.

With the exception of selected achievements, gender integration in the renewable energy sector in Viet Nam still faces challenges as in other sectors. The GoV has considered gender issues in response to climate change in general, but the government has neglected gender inclusion in renewable energy.

For instance, the National Target Program 2008 recognizes that climate change potentially exacerbates gender inequality because it influences livelihoods, health, assets, and natural resources, and also impacts workloads and participation in decision-making.

³⁸ <https://snv.org/project/Viet-Nam-biogas-programme>

³⁹ <https://www.goldstandard.org/projects/biogas-program-creating-clean-energy-manure-management-Viet-Nam>



Photo: UN Environment Programme/Deng Nguyen

In the National Strategy for Climate Change, gender equality is also a specific target alongside guaranteeing food, energy and water security, poverty reduction, social security, health, livelihoods, and protection of natural resources.

It could be argued that these policies encompass the energy sector, and that if these policies mention gender, gender is also integrated into the energy sector. However, unless gender issues and women are clearly mentioned in renewable energy policies/programs, gender mainstreaming will not be implemented comprehensively. Research indicates that most renewable energy policies are in fact gender-blind.

Gaps in gender integration in renewable energy include:

No explicit gender integration into renewable energy policies. The review of a number of Vietnamese national policies to develop renewable energy reveals that all of them are gender-blind (see Table 14 below). In most policies, there is no reference to gender or women. Only in one document, the Decision No. 1427/QĐ-TTg dated 2 October 2012 approving the National Target Program on economical and efficient use of energy in the 2012-2015 period proposed by MOIT and issued by Prime Minister, mentioned the Women's Union as one of the implementation agencies to communicate on saving energy. This finding is consistent with the assertion in the gender policies brief delivered by AusAID and CARE (2015) that gender and women are excluded from, or minimally mentioned in, sectoral climate change action plans.

Lack of guidelines on gender mainstreaming and absence of mechanisms for monitoring and evaluation of gender integration in renewable energy. The lack of explicit gender integration into energy sector policies implies that there are no principles around incorporating gender into decrees or circulars. As a result, there are no clear guidelines on gender mainstreaming in implementation at provincial and communal levels. Gender integration, therefore, is not seen as a pivotal component in programs or projects.



Photo: UN Environment Programme/ives

When the importance of gender is not adequately considered, monitoring and evaluation of programs and projects through a gender lens may be absent or just a formality. Consequently, there remains a scarcity of sex and gender-disaggregated data. Gender-disaggregated data, that speaks to gender differences and gendered power relations affecting access to and control of renewable energy, should be highlighted. Sex-disaggregated data, such as how many women and men are consulted for an energy plan, or how many women and men can access green energy as the targets of a program, are virtually non-existent. Although the Decision No. 1485/QDBKHDT on the Adaptation Prioritisation Framework 2013 as technical guidance on screening and prioritizing adaption investments issued by MPI sees gender equality and empowerment as part of a sub-criterion on adaptive capacity improvement, guidelines on developing the indicators to measure adaptive priorities do not mention sex-disaggregation. Reports on how gender has been mainstreamed in renewable energy are hardly published.

Women participate modestly in the energy sector globally due to the barrier of gender norms. In Viet Nam, a UN Women report (2016) reveals that the country shares the same issue of having fewer women than men in the energy sector (electric, gas, and hot water supply). Jobs in this sector are still believed to involve heavy labor and therefore not suitable for women [52].

As the energy sector is considered to be technical, it is more difficult for women to be hired for positions in this field since they are not encouraged to pursue Science, Technology, Engineer, and Maths (STEM) as part of their educational path. This is because STEM is believed to be for boys and men. In the Gender Gap Report [9], education and skills in STEM attainment amongst Viet Nam's women is 15.35% compared to 31.19% amongst males.

Resurreccion & Boyland (2017) report that among the current 20 local wind energy developers and 15 local solar energy developers, only a few are led by women. While the Law on Gender Equality is a firm legal framework for advancing women across all areas of socio-economic development, including employment access, harmful cultural practices biased against women still exist and constrain their opportunities to access the energy sector [75].

Table 14. List of key policy documents related to energy development in Viet Nam

Time	Name of documents	Proposed/ Issued by	Implementing duration	Gender indicators
2004	Law No. 28/2004/QH11 Electricity Law dated on 3 December 2004	National Assembly	2003 -2013	None / Gender-blind
2007	Decision No. 1855/QD-TTg of December 27, 2007, approving Viet Nam's National energy development strategy up to 2020, with 2050 vision.	MOIT	2008 - Present	None
2012	Decision No. 1427/QD-TTg dated October 2, 2012 approving the National Target Program on economical and efficient use of energy in the 2012-2015 period	MOIT, MPI	2012 - 2015	None. However, the role of the Women's Union in implementation is included
2012	Law No. 24/2012/QH13 Electricity Law dated on 20 November	National Assembly	2013 - 2018	None
2013	Resolution No. 24-NQ/TW dated June 3, 2013, Active in response to climate change, improvement of natural resources management and environmental protection	National Assembly	2013 - Present	None
2014	Resolution 08/NQ-CP dated January 23, 2014 Promulgating the Government's Action Program on implementation of Resolution No. 24-NQ/TW of the 11th Central Committee of the Party Central Committee on proactively responding to climate change, strengthening natural resources management and environmental protection	MONRE	2014 - Present	None
2015	Decision No. 2068/QD-TTg dated 25 November 2015, approving the development strategy of renewable energy of Viet Nam by 2030 with a vision to 2050	MOIT	2015 - Present	None
2016	Decision No. 90/QD-TTg dated 12/01/2016 approving the Planning of the national network of natural resources and environment monitoring period 2016-2025, with a vision to 2030.	MONRE	2016 - Present	None
2017	Decision No. 11/QD-TTg dated 11 April 2017 on the mechanism for the encouragement of the development of solar power in Viet Nam	Prime Minister	2017 - 2019	None

Table 14. List of key policy documents related to energy development in Viet Nam (continued)

Time	Name of documents	Proposed/ Issued by	Implementing duration	Gender indicators
2018	Law No. 03/2018/VBHN-VPQH Electricity Law dated on 29 June 2018	National Assembly	2019 - Present	None
2019	Decision No. 1264/QĐ-TTg dated October 01 2019 on Approval for the National Power Development Master Plan for 2021-2030 period with vision towards 2045	MOIT	2019 - Present	None
2020	Resolution No. 55-NQ/TW dated February 11, 2020 on the orientation of Viet Nam's National Energy Development Strategy to 2030, with a vision to 2045	MONRE	2020	None
2020	Decision No. 08/2020/QĐ-TTg dated 5 March 2020 on Adjustment of Decision No. 24/2014/QĐ-TTg of Assistant Mechanism to Develop Biomass Power in Viet Nam issued by Prime Minister	MOIT- Prime Minister	2020	None
2020	Decision No. 13/2020/QĐ-TTg dated 6 April 2020 on Encouragement mechanism to develop top roof solar energy in Viet Nam	MOIT	2020	None
2020	Directive Document No. 7088/BCT-DL dated 22 Sep 2020 on the implementation to develop roof solar energy	MOIT	2020	None

Source: Synthesized from the related energy policies of Viet Nam



V. Conclusion and recommendations



5.1 Conclusion

The government of Viet Nam (GoV) recognizes the importance of having both women and men equally involved in tackling climate change and other environmental challenges. However, although the importance of gender mainstreaming into climate change related policies has been affirmed by leaders of the GoV in general, and the Ministry of Natural Resources and Environment (MONRE), in particular, inconsistency remains in its integration into climate strategies and action plans.

The most recent policy documents in Viet Nam related to climate change and disaster risk management (DRM), the National Target Program to Respond to Climate Change (2008) and the National Strategy on Climate Change (2011),⁴⁰ include gender equality as a guiding principle and objective, respectively.

The Law on Promulgation of Legal Documents (2015) requires the inclusion of gender in legal documents per Decree No. 48/2009/ND-CP dated 19 May 2009 while Circular No.17/2014/TT-BTP dated 13 August 2014 of The Ministry of Justice details the integration of gender equality issues in the development of legal documents, especially the law. The process of organizing and developing laws must comply with the guidance in the above three documents.

The Law on Environmental Protection (2014) also stipulates the principle that “environmental protection must be applied in harmony with ... the promotion of gender and development ... and the response to climate change”. Moreover, at the time of writing, this Law is being revised to integrate gender into specific parts of the Law (MONRE’s informant, 2020).

⁴⁰ Decision No. 2139/QĐ-TTg dated 5th December 2011 by the Prime Minister.

Viet Nam has also made an international commitment to mainstreaming gender and women's empowerment in responding to climate change. The recently updated Nationally Determined Contribution (NDC)⁴¹ to the United Nation Framework Convention for Climate Change (UNFCCC), submitted in September 2020, makes specific reference to gender in the context of climate change⁴².

This said, gender equality is not explicitly mentioned in some key climate change policy frameworks, including the National Action Plan for Climate Change (2011-2020) issued by the Prime Minister in Decision No. 1471/QĐ-TTg, and the Action Plan Responding to Climate Change for Natural Resource and Environment Sector.

Moreover, while the Central Women's Union was involved in reviewing and updating the second NDC of Viet Nam, its role is not obvious. Compounding the matter, its effectiveness is further hindered due to high turnover in its personnel structure; at the same time, it lacks the resources to train new staff and members (VWU's informant, 2020). These factors may help to explain the absence of coherent integration of gender equality into the strategies and policies of adaptation and mitigation to climate change, across all sectors.

Notably, MOLISA is also not actively involved in the NDC review process, even though its Gender Equality Department is entitled to oversee gender equality of all sectors nation-wide.

Furthermore, while according to the Law on Promulgation of Legal Documents, gender integration in legal documents, particularly laws, is mandatory in Viet Nam - at the level of circulars (technical guidelines) that guide the law, there is no regulation on mainstreaming gender equality. This has led to a situation where gender strategies and action plans, in general, and gender equality, in particular, are often not implemented.

A sector-level review of gender equality and climate change in agriculture, water management, waste management and renewable energy reveals that gender is most integrated into climate policies in the agriculture sector. The clear and obvious impact of climate change to agriculture has led to the development of several measures to reduce the climate impact to agricultural production; in the process, gender issues have received more attention than in other sectors. In addition, the agriculture sector is also tasked with natural disaster reduction and prevention management, which has long incorporated gender in its policy direction and technical guidelines.

⁴¹ Viet Nam is one of the top countries affected by climate change and its related natural disasters. Being aware of the negative impacts of climate change, Viet Nam has actively issued and implemented various climate change mitigation and adaptation policies and programs. In September 2020, the government of Viet Nam (GoV) submitted its updated Nationally Determined Contribution (NDC) to the United Nation Framework Convention for Climate Change (UNFCCC) with a target of reducing 9% of total greenhouse gas (GHG) emission by 2030 compared to business as usual (BAU) scenario.

⁴² *Climate change, increased natural disasters and climate extremes produce different impacts on women and men. While men are exposed to more risks due to their involvement in search and rescue operations, women are generally more vulnerable to health and socio-economic problems. Several negative impacts of climate change on women's health include increased prevalence of diseases and epidemics, especially among pregnant women, girls, women with chronic diseases and elderly women.*

Nonetheless, a number of challenges to gender integration in climate policy still remain across all sectors, limiting the full potential of Viet Nam to respond to climate change:

Integration of gender into policy at the sector-level is inconsistent

In the agriculture sector, where both climate vulnerability and women's participation are high, gender is only explicitly addressed in the action plan responding to climate change in agriculture and rural development, approved by the Ministry of Agriculture and Rural Development (MARD) in 2016. Even so, no specific gender equality targets or measures have been identified to address women's vulnerabilities to climate change in the existing climate-related policies of the sector. In the water management and renewable energy sectors, gender is either not explicitly addressed, or not considered at all; furthermore, guidelines on gender mainstreaming and mechanisms for monitoring and evaluation of gender integration are lacking.

Women's participation in sectoral policy-setting and management practices is limited

Sectoral policy-setting is assigned to state agencies, in which women's participation is typically limited – and, particularly so, in the waste management and renewable energy sectors. Women's access to agricultural resources is also restricted: structural barriers to access to land, new cultivation techniques, credit, information, technologies and markets – accompanied by a disproportionate labour burden – makes it especially challenging for women farmers to adapt their cultivation practices to climate change.

In certain sectors, women are not receiving the full protection of the Law

In some cases, women are not receiving the full protection of the Law. In the waste management sector, for example, women - who constitute the large majority of informal workers in the sector - are not being fully protected by Law or insurance schemes. In particular, there is no specific reference to gender issues with regard to waste collection and recycling in the Labor Law. This said, the Viet Nam Women's Union takes part in the implementation of the Law at all levels, where possible.

Limited data and technical capacity is hindering the implementation of sector-level gender strategies. Implementation of gender strategies and action plans is weak due to unclear policies, guidelines, and the capacity of officials in translating policy direction into specific actions; related to this, reporting on gender integration is totally absent in some sectors, such as water management. At the root of these challenges are gaps in understanding around the inter-linkages between climate change impacts and gender equality. Practitioners are often guided by assumptions and generalizations, and face challenges in assessing climate vulnerabilities in a sex-disaggregated manner. At the same time, existing capacities and skills among men and women are not presented as potential solutions in addressing climate change. In the absence of the right data, analysis and evidence on gender-related aspects, Viet Nam remains limited in its ability to include and consider gender equality in the institutional and policy frameworks of climate change, as well as in climate action design and implementation.

5.2 Recommendations

The following recommendations are proposed to promote gender integration into climate change policy formulation and implementation, increasing the adaptive capacity of the country and contributing to the sustainable development of Viet Nam:

(A) Awareness-raising and capacity-building among policy makers

Awareness-raising and capacity building on gender equality and women's empowerment aspects of climate change adaptation should be an urgent priority in all sectors, using both bottom-up and top-down approaches. This awareness will enable and encourage policy advocacy across all levels of all ministries, thus supporting the achievement of political commitments, as well as possible financing for measures ensuring gender sensitivity in the response to climate change.

- Promotion of women's leadership. Women's leadership should be promoted at the highest levels of ministries with a mandate to tackle climate change, such as MONRE, MARD, and MPI. VWU's role should also be strengthened and be more apparent in consultancy and decision-making, instead of in implementation only. MOLISA should engage other stakeholders and consult the Women's Union, as well as organizations working on gender issues, in order to develop an explicit gender mainstreaming workplan to support MONRE, MARD, MOIT and other governmental agencies in implementing sectoral strategies with gender sensitivity.
- Dialogues and stakeholder consultations. Dialogues and exchanges between the Viet Nam Women's Union (VWU) and line Ministries or Departments (for example, MARD and MONRE and its lower-level offices) on technical capacities should be given more attention, given VWU's significant ability to reach women members, at all levels, for awareness raising and capacity building. MOLISA should engage other stakeholders and consult the Women's Union, as well as organizations working on gender issues, in order to develop an explicit gender mainstreaming workplan to support MONRE, MARD, MOIT and other governmental agencies in implementing sectoral strategies with gender sensitivity.
- Cooperation on gender mainstreaming. MONRE, MOIT, and MOLISA should co-operate on gender analyses and co-develop plans for gender mainstreaming in renewable energy where possible. These agencies should involve gender specialists and other organizations working on gender issues, such as UN Women and VWU, in developing gender mainstreaming plans.
- Climate Change Working Group participation. The Climate Change Working Group, including national NGOs and CSOs, has a critical part to play in the response to climate change. It should be able to participate in the policy-making process and implementation, being able to bridge the gap between the two, given the nature of its work at the grass-roots level - particularly in agriculture and water resources (adaptation).
- Coordination on gender integration across sectoral legal documents. Line ministries such as MONRE, MARD, MOIT, MOLISA, and other relevant agencies at the provincial levels, should cooperate in revisiting all legal documents related to agriculture, water resources, water management and renewable energy in order to identify entry points through which to integrate gender where necessary. For example, in the steering principles for program implementation, the potential of women as community consultants should be emphasized in order to avoid the dominant discourse that "they are vulnerable people" only.

- Provision of training. The lack of resources to train new staff and members affects VVU's ability to integrate gender equality into strategies and policies for climate change adaptation and mitigation across all sectors. This also affects VVU's ability to contribute to MARD and MONRE's efforts. VVU could be a channel to feed back to climate change-policy makers regarding the implementation of climate change adaptation interventions on the ground. In return, officers with a climate change background would have opportunities to improve their understanding of gender equality in the sector. Technical knowledge related to climate change must be transferred to the staff of departments responsible for social issues, such as MOLISA at the national level and the Department of Labour, Invalids, and Social Affairs (DOLISA) at the provincial level, in order to strengthen their roles in the climate change policymaking process.
- Development of STEM education policies. There must be efforts to encourage women to enter STEM by providing scholarships and awards for women through the Ministry of Education and Training (MOET). This will contribute to increasing the capacity of women to adopt new climate-related technologies and provide them with more opportunities to be engaged in work related to STEM including those in the field of renewable energy.
- International support and cooperation. Support from international organizations should be mobilized to support advocacy work on gender integration into climate change policies.

(B) Developing, and promoting the application of, technical guidelines for gender mainstreaming into climate change policies

Clear technical guidance on how to integrate gender aspects into climate policy should be provided to policy makers. The guidelines should be easy to use, and leverage and build upon any existing ones.

- Clear guidelines on gender mainstreaming climate policies. Clear guidelines on gender mainstreaming climate policies, particularly for agriculture, water resources, waste management and renewable energy sectors, should be developed and attached with decrees/circulars to guide local authorities in practice. MOLISA and MPI should develop clear guidelines on how to mainstream gender into the national socio-economic development planning process and send it to all line agencies, from the national to provincial and communal levels. The guidelines should include gender indicators and must be attached to a legal decision and circulars to ensure gender equity in sectoral policies, particularly those related to climate change.
- Highlighting of gender-integrated policies. Some key policies, for example, the National Strategy for Natural Disaster Prevention, Response and Mitigation by 2020 and the Action Plan on Response to Climate Change in the sector acknowledge the importance of gender equality in the context of climate change, should be highlighted for action. These documents are considered an important basis for mainstreaming gender and should be translated into action via the development of the national gender strategy for the sector; provinces should also be mandated to address gender equality in climate change adaptation.
- Requiring the submission of gender mainstreaming reports. In the Law on Promulgation of Legal Documents, Article 54 should be amended so that gender mainstreaming reports are required in the process of drafting all legal documents and proposals. It would then make it essential for gender to be integrated in all stages of the policy-making process.



Photo: UN Environment Programme/Hai Tran

(C) Conducting studies on the gendered impacts of climate change by sector and region, and identifying entry points through which to integrate gender into climate-related policies

Further research on the gendered impact of climate change by sector and region should be conducted in order to provide policy makers with a firm basis upon which to design and implement gender-responsive climate policies. Identification of suitable entry points through which to mainstream gender into climate policies is also critically important.

- Best practices in gender mainstreaming. Studies on the nexus of gender, agriculture, water and climate change, and best practices in gender mainstreaming climate change adaptation should be promoted in order to provide evidence-based information to inform policy/decision-makers responsible for mainstreaming gender equality into related climate actions in agriculture.
- Diversification of livelihoods involving new technologies. Studies on the diversification of livelihoods for the most vulnerable groups, including women and elderly people, involving new technologies developed for agriculture, should be undertaken. New technologies should be gender-inclusive and sensitive such that both men and women can benefit from digital development. Both should also be equally provided with digital skills development and opportunities.
- Policy gaps. Studies should be carried out that identify policy gaps and suggest recommendations for improving gender responsiveness at the sector policy level while addressing inter-related issues of gender, agriculture and climate change - rather than those simply looking at them in isolation, for example.

- Entry points for gender integration. Studies to identify entry points for integration of gender aspects into existing and new policies would also be helpful. For example, in MONRE's plan to update the national strategy for climate change in 2021, there is great potential to share with the updating team inputs related to gendered impacts by climate change. The climate change of Viet Nam has also identified priority activities to promote gender equality in developing adaptation plans that should be followed up.
- Gender-sensitive taxation. Studies on taxation on natural resources, as well as that related to environmental protection under the Law on Environmental Protection approved in November 2020, along with its implementation guidance, should be undertaken to ensure that women-owned businesses, in particular, benefit from such taxation.

(D) Developing a monitoring and evaluation framework for gender integration into climate policies, and establishing a database of the gendered impacts of climate change

A monitoring and evaluation framework should be developed, and a database established, to systematically track the integration of gender into climate policies, and to understand the gendered impact of climate change by sector and region, respectively.

- Monitoring and evaluation of gender integration. Line agencies should establish an explicit and comprehensive mechanism for the monitoring and evaluation of gender integration in their sectors, and ensure that the mechanism is applied to all processes. The reports of the assessment should be published and made available to all stakeholders.
- Coordination across national and provincial levels. MONRE, MOIT, and MOLISA should cooperate to establish a comprehensive monitoring and evaluation mechanism on gender mainstreaming to apply in the implementation process from the national level down to provincial and communal levels. Sex and gender indicators should be designed as a required output in programs/projects on renewable energy, in particular. Sex-disaggregated data and gender-sensitive data should be collected and reported publicly to relevant stakeholders.
- Budget allocation. Ministries responsible for state management of agriculture, water resources and waste management such as MARD and MONRE should secure and/or must allocate budgets to ensure gender considerations and integration are applied to their policy and program implementation. At the same time MOLISA, charged with state administration of gender equality, as well as the Ministry of Finance (MOF) and MPI, which are responsible for mobilizing and effectively using funds for renewable projects, should allocate resources for gender mainstreaming. These budgets should cover the conduct of gender audit, gender analysis, capacity building, response to gender-based needs, and monitoring and evaluation activities.
- Incorporation of gender considerations in the 2020 NDC. Gender considerations should be incorporated into models of ecological cities, waste separation and others, as mentioned in the 2020 NDC - as men and women may have different concerns priorities, interests, and preferences. These important points need to be well-communicated to all stakeholders concerned, especially people in the community, via dialogue platforms, guiding materials, and awareness raising programs, as part of the NDC implementation process.



Photo: UN Environment Programme/Le Ian

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Annexes

Annex 1: Socio-economic indicators and information on greenhouse gases in Viet Nam

	1990	2000	2010	2015	2019	Change 1990 - 2019
Population (million)	67,988,862	79,910,412	87,967,651	92,677,076	96,462,106	141.9 (%)
Female (%)	50.5	50.5	50.3	50.2	50.2	-0.3 (%)
Male (%)	49.5	49.5	49.7	49.8	49.8	0.3 (%)
Rural (%)	79.7	75.6	69.6	66.2	64.95	-14.75 (%)
Urban (%)	20.3	24.4	30.4	33.8	35.05	14.75 (%)
Unemployment rate (%)	n/a	2.26	1.11	2.125	2.17	-0.09 (%)
Female unemployment amongst female labor force (%)	n/a	2.14	1.076	1.99	2.26	0.12 (%)
Human Development Index	0.475	0.578	0.635	0.68	0.704	22.9
Gender Development Index	n/a	0.956	0.928	1.006	0.997	0.041
Gender Inequality Index	n/a	0.347	0.324	0.333	0.296	-0.051
GDP, PPP (current interna- tional \$) (unit: Billion)	62.392	158.86	370.634	565.575	809.994	1298.2 (%)
GDP per capita, PPP (current international \$)	917.67	1,987.30	4,213.30	6,102.64	8,397.00	915 (%)
GHG emissions without LULUCF (ktCO ₂ eq)	n/a	135,795	266,049.2	n/a	n/a	
CO ₂ emissions per capita (MT CO ₂ eq per capita)	0.315	0.671	1.623	2.032	n/a	
CO ₂ emissions per GDP unit (kg CO ₂ eq per 2017 PPP USD of GDP)	0.189	0.227	0.319	0.316	n/a	

Annex 2: Detailed roadmap for Viet Nam's NDC review and update (2017-2020)

#	Name of Activity	Main/related objectives
1.	Kick-off Workshop on NDC review and update	<ul style="list-style-type: none"> Agree on objectives, timeline and roles of stakeholders in NDC review
2.	Development of multi-sector modeling approach and assessment of socio-economic impacts of mitigation actions	<ul style="list-style-type: none"> Select a suitable socio-economic assessment model Evaluate socio-economic impacts of mitigation options
3.	<ul style="list-style-type: none"> Collection of related information for NDC review and update Undertaking of additional studies by sectors Synchronization of completed study results by sectors, vulnerable groups 	<ul style="list-style-type: none"> Provide inputs for NDC review and update
4.	Workshops for 63 provinces and all ministries on Paris Agreement and NDC at Nha Trang (28 July) and Can Tho (Mid-August) and Hanoi (end of August)	<ul style="list-style-type: none"> Raise awareness on Paris Agreement and commitment of Viet Nam through its NDC Gain support from ministries, provinces and other local stakeholders on NDC review and update
5.	International Conference in Hanoi on Paris Agreement and NDC implementation	<ul style="list-style-type: none"> Promote networking and knowledge sharing among NDC-P party countries to improve planning, stakeholder engagement, priority setting, budgeting, and mobilization of resources for the implementation of NDCsvulnerable groups
6.	Monitoring meetings of SPRCC, including sectoral contribution to NDC review/ implementation	<ul style="list-style-type: none"> Identify gaps in policy/actions/efforts of ministries to implement Paris Agreement Prepare policy note to facilitate the dialogue
7.	First consultative workshop with VPCC and Focal Points on NDC review and update	<ul style="list-style-type: none"> Validate collected information and seek guidance from VPCC and Agency Focal Point on NDC review and update process Identify gaps/uncollected information
8.	NDC at COP23	<ul style="list-style-type: none"> Gain better understanding of NDC features, information, accounting, registry and views of Parties Gain better understanding of information needed for GST in 2018
9.	Support of sectoral review and collection of additional information for NDC review and update	<ul style="list-style-type: none"> Fill information gaps identified at #7 Prepare information for 2018 GST

Annex 2: Detailed roadmap for Viet Nam's NDC review and update (2017-2020) (continued)

#	Name of Activity	Main/related objectives
10.	Annual meeting of NCCC	<ul style="list-style-type: none"> Report the process and initial outcomes of NDC review and update to NCCC members and seek guidance on areas to focus Report on preparation for the 2018GST and preparation of Viet Nam and seek guidance from NCCC members
11.	Second consultative workshop with VPCC and Focal Points on NDC review and update	<ul style="list-style-type: none"> Validate collected information and seek guidance from VPCC and Agency Focal Point on NDC review and update process Identify gaps/uncollected information Endorse Draft 1 of updated NDC Give comments on preparation for 2018 GST
12.	High-level meeting of NCCC, VPCC and DPs on NDC	<ul style="list-style-type: none"> Consult and discuss initial outcomes of NDC review and update Identify gaps
13.	First series of consultative workshops with stakeholders on sectoral contribution and national contribution	<ul style="list-style-type: none"> Seek inputs from stakeholders on Draft 1 of updated NDC Identify gaps
14.	Support of sectoral reports and collection of additional information for NDC review and update	<ul style="list-style-type: none"> Fill the gaps identified in #11, #12, #14 Develop Draft 2 of updated NDC
15.	Second series of consultative workshops with stakeholders on sectoral contribution and national contribution	<ul style="list-style-type: none"> Seek inputs from stakeholders on Draft 2 of updated NDC Identify gaps
16.	COP24 and facilitation of dialogue: stock take of efforts	<ul style="list-style-type: none"> Participate in 2018 GST Get views on or suggestion for further improvement of Viet Nam NDC Share views of Viet Nam on other Parties' NDC
17.	Finalization of Draft 3 of updated NDC	<ul style="list-style-type: none"> Fill the gaps identified from #15, and #16
18.	NCCC and VPCC meeting	<ul style="list-style-type: none"> Provide further comment on Draft 3 of updated NDC
19.	Development of Draft 4	<ul style="list-style-type: none"> Improve updated NDC based on the input from #19
20.	Circulation of updated NDC for final comments from ministries and stakeholders	
21.	Finalization of updated NDC and submission to the Government for consideration	
22.	Submission of updated NDC to UNFCCC	

Annex 3: GHG Emission Reduction Contributions of 5 sectors

Name of Activity	Main/related objectives
Coverage	<p>1. Energy (emissions from fuel combustion)</p> <ul style="list-style-type: none"> • Energy industry • Industrial production and construction • Transportation • Others: household appliances, agriculture and commercial services <p>2. Agriculture</p> <ul style="list-style-type: none"> • Rumen digestion • Organic fertilizer management • Rice cultivation <p>3. LULUCF</p> <ul style="list-style-type: none"> • Forest land • Cultivation land • Grassland • Wetland • Others <p>4. Waste</p> <ul style="list-style-type: none"> • Landfills • Material production from solid waste <p>5. Industrial processes (IP)</p> <ul style="list-style-type: none"> • Construction materials • Chemical industry • Halocarbons (HFCs) consumption
Type of contribution	<ul style="list-style-type: none"> • Select a suitable socio-economic assessment model • Evaluate socio-economic impacts of mitigation options
Greenhouse gases	<ul style="list-style-type: none"> • Provide inputs for NDC review and update
Period	From 01/01/2021 to 31/12/2030
Methodology to estimate GHG emissions and data	<ul style="list-style-type: none"> • IPCC guidelines • National statistics, national socio-economic development plan and sectoral activity data
BAU Scenario	<p>The BAU scenario was developed based on the assumption of economic growth in the absence of climate change response policies</p> <p>The BAU scenario starts from 2014 (the year of latest national GHG inventory) and includes the energy, agriculture, LULUCF, waste, and IP sectors</p> <ul style="list-style-type: none"> • GHG inventory in 2014: 284.0 million tonnes of CO₂eq • Projections for 2020 and 2030: <ul style="list-style-type: none"> * In 2020: 528.4 million tonnes of CO₂eq * In 2025: 726.2 million tonnes of CO₂eq * In 2030: 927.9 million tonnes of CO₂eq

Annex 3: GHG Emission Reduction Contributions of 5 sectors (continued)

Name of Activity	Main/related objectives
Unconditional contribution (with domestic resources)	With domestic resources, by 2025 Viet Nam will have reduced total GHG emissions by about 7.3% compared to the BAU scenario (equivalent to 52.9 million tonnes of CO ₂ eq), and by 2030 Viet Nam will have reduced total GHG emissions by about 9% compared to the BAU scenario (equivalent to 83.9 million tonnes of CO ₂ eq)
Conditional contribution (with international support)	The above-mentioned 9% contribution can be increased to 27% by 2030 (equivalent to 250.8 million tonnes of CO ₂ eq) with international support received through bilateral, multilateral cooperation as well as through the implementation of market and non-market mechanisms under Article 6 of the Paris Agreement, in line with the socio-economic conditions and international conventions to which Viet Nam is signatory

Source: Adapted from the updated NDC of Viet Nam (July 2020)



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