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Social and economic dimensions
of smallholder based agriculture
and food security

Rural transformation and economy in Viet Nam

-Progress in eradicating poverty, hunger and malnutrition

Rachmat Mulia

*Department of Human Geography, Lund University
World Agroforestry (ICRAF) Viet Nam*

AgriFoSe2030

Agriculture for Food Security 2030
- Translating science into policy and practice

Today more than 800 million people around the world suffer from chronic hunger and about 2 billion from under-nutrition.

This failure by humanity is challenged in UN Sustainable Development Goal (SDG) 2: "End hunger, achieve food security and improve nutrition and promote sustainable agriculture".

The AgriFoSe2030 program directly targets SDG 2 in low-income countries by translating state-of-the-art science into clear, relevant insights that can be used to inform better practices and policies for smallholders.

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Summary

The rural transformation and economic development of Viet Nam during the past decades has been regarded as particularly impressive, thanks to an eager yet careful transformation from a centrally-planned economy into a socialist-market economy. Nowadays, the country has been well integrated into the global economy and committed to sustainable development through promulgating national strategies and participating in different international treaties. Despite this achievement, incidence of poverty, hunger and malnutrition still prevails especially in the mountainous areas of the country dominated by poor communities and ethnic minorities.

This report aims to provide a synthesis on the progress that Viet Nam has made in the past decades both at national and sub-national level related to the country's efforts in moving towards sustainable development goal by 2030, by eradicating poverty, hunger and malnutrition. Among different issues reviewed, ethnic minorities, gender, and youth are cross cutting concerns. The report also describes challenges that the country needs to cope, including potential negative impacts of participation in non-farm activities by rural households, to their farm and local communities. Recommended strategies to ensure progress towards eradication of poverty, hunger and malnutrition by 2030 are also elaborated.

1. Introduction

Viet Nam has undergone a successful agricultural and rural transformation with remarkable economic and agricultural growth over the last three decades. This transformation has resulted in Vietnam's economy moving gradually away from being centrally-planned towards a socialist-market with a resulting steady growth in Gross Domestic Product (GDP) that, according to the World Bank, has reached USD 228 billion by 2017 with GDP purchasing power parity (PPP) of USD 650 billion, and GDP per capita of about USD 1,860. Such economic growth has uplifted the country from being among the poorest in the Southeast Asian region into a lower middle-income country since around 2011. In Southeast Asia, especially among the countries in the Mekong region, Viet Nam's economic performance in terms of GDP has transcended that of Cambodia and Myanmar.

The 2016 Viet Nam Development Report published by the World Bank Group declared that the agricultural sector in the country has made remarkable progress and has transformed the country into one of the world's leading exporters of agro-food commodities- starting with rice, and subsequently commercial crops such as coffee, tea, cashews, and black pepper. The country, especially its Mekong Delta region, is known as one of "Asian rice bowls" and Viet Nam has become one of main rice exporters in the world since 1990s. Over the last decade, there has been a lot of efforts in attracting foreign direct investment (FDI) into the agricultural sector of the country for example through the Trans-Pacific Partnership (TPP) negotiations and the Free Trade Agreement (FTA) that have removed tariffs and other trade barriers between the signatory countries, which include Viet Nam, Australia, Malaysia, Singapore, and other countries in the Asian region². More recently, in June 2018, a final text of the European Union (EU)-Viet Nam FTA has been agreed by the two parties³. This formally concludes the legal review of the document and will have a major impact on the agricultural development in the country.

The country has been increasingly integrated into the global economy and is a member of the World Trade Organization (WTO)⁴. The rising contributions from the private sectors, as well as larger exports and foreign investments have been the main drivers of economic growth. Furthermore, Viet Nam's economic growth has also been accompanied by institutional reform to provide better management. Compliments to Viet Nam's economic performance have been provided by numerous countries and international institutions such as World Bank declaring that Viet Nam is one of the best performing countries in the world in economic terms over the last decade. This is not merely an achievement in economic values, but also to the resilience of the economy to various shocks and negative influence of global social and environmental hazards, climate change and variability, as well as impact of global competition, high commodity prices, inflation, and anti-dumping suits. Several factors are claimed to underpin Viet Nam's remarkable economic growth- such as demography, low wage rates, and political stability. However, these factors are not considered specific to Viet Nam and explain only a portion of the country's success. According to the research from the Brookings Institute think tank in the US, the ability of

¹ <http://projects-beta.worldbank.org/en/results/2013/04/12/vietnam-achieving-success-as-a-middle-income-country>

² <http://www.vietnam-briefing.com/news/vietnams-agricultural-sector-sees-strong-growth-thanks-fdi.html/>

³ <http://ec.europa.eu/trade/policy/countries-and-regions/countries/vietnam/>

⁴ https://www.wto.org/english/news_e/news07_e/acc_vietnam_11jan07_e.htm

Viet Nam to build a solid economic foundation through good policies is a specific factor that has led to the country's remarkable growth⁵.

In the last few decades, many developing countries, including Viet Nam, have been struggling to increase their population's income per capita, with some having succeeded although not always achieving stable growth (Tarp 2017). One common feature of these transformations has been the change in rural households' economic activity whereby there has been a shift of resource allocation from traditional agriculture to more productive forms of agriculture, manufacture and service sectors. Massive changes in resource allocation, particularly labor, and the corresponding changes in the composition of economic outputs are often referred to as structural transformations of the economy. It is crucial to understand the structural transformation that has been taking place in different transition economies, to provide direction in enhancing the welfare of low-income countries. This has been one of the objectives of the 2030 Sustainable Development Goals (SDGs), formulated during the UN General Assembly in 2015.

Despite Viet Nam's remarkable economic growth, several recent studies have reported cases of poverty, hunger, and malnutrition in the country. This calls for a better understanding of the process of rural and structural transformation that has been taking place in the country, and for an investigation into the dissimilarities in the extent of economic development among its eco-regions characterized by the contrasting geographical and socio-economic conditions. Since rural and structural transformation is closely linked to opportunities for diversifying income or livelihood, a further enquiry into the poverty, hunger, and malnutrition issue should also look into income dynamics and livelihood diversification among regions in the country. The study is important for providing an overview of the challenges that the country must tackle in the next decade, to meet the SDGs, especially the second Goal "to end hunger, achieve food security and improved nutrition and promote sustainable agriculture" by 2030. Food security itself is defined by Food and Agricultural Organization (FAO) as "a situation when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food and to meet their dietary needs and food preferences for an active and healthy life".

The purpose of this report is to present the results of a literature review on rural and structural transformation in Viet Nam over the last three decades, conducted under the Agriculture for Food Security (AgriFoSe2030) program that aims to synthesize and translate existing science into policy and practice, and develop the capacity to achieve a more sustainable agriculture and rural development⁶. The program is developed by a consortium of scientists from the Swedish University of Agricultural Sciences (SLU), Lund University, the University of Gothenburg, and the Stockholm Environment Institute (SEI). It covers four themes among which the first is the *social and economic dimensions of smallholder-based agriculture and food security*, led by the Department of Human Geography⁷ at Lund University, and is where this study and report belong.

⁵ <http://asiatoday.com/pressrelease/vietnams-economic-miracle-unabated-%E2%80%93-new-tiger-born-report-says>

⁶ <https://www.slu.se/en/collaboration/international/slu-global/agrifose/>

⁷ <https://www.slu.se/en/collaboration/international/slu-global/agrifose/the-agrifose-themes/social-and-economic-dimensions-of-smallholder-based-agriculture-and-food-security/>

More specifically, the report aims at providing an overview of four main issues:

- *The process of rural and structural transformation* in Viet Nam and its impact at national level to the eradication of poverty, hunger and malnutrition as three main aspects of food insecurity, with youth and gender as cross cutting issues.
- Dissimilarities in the extent of economic development and hunger and malnutrition as its related aspects, among eco-regions in the country.
- *The potential and determinants of income/livelihood diversification* to allow poor communities to escape from poverty, hunger and malnutrition, and
- *Challenges and strategies* towards eradication of poverty, hunger and malnutrition by the next decade.

1.1 Viet Nam landscape territory and eco-regions

Viet Nam is the easternmost country on the Indochina Peninsula, bordered by China to the north, Laos to the northwest, and Cambodia to the southwest (Fig. 1a). The country is divided into three main regions- namely the northern, central and southern part and has a total of 63 provinces including 5 centrally-governed cities; Ha Noi, Ho Chi Minh City, Can Tho, Da Nang and Hai Phong. These provinces and cities are further grouped into different ecological regions mainly based on geographical, climatic, biophysical and vegetation distribution. The classification widely used in the agriculture and forestry sectors in the country is to divide the landscape into 8 eco-regions, namely Northeast (NE), Northwest (NW), Red River Delta (RRD), North Central Coast (NCC), South Central Coast (SCC), and Central Highlands (CH), Southeast (SA), and Mekong River Delta (MRD) (Fig. 1b). Another classification as used e.g. in the VARHS (Viet Nam Access to Resources Household Survey) data analysis, is to integrate the NE and NW into one region, and the SA and MRD into another to constitute five eco-regions in total (e.g. see Brandt and Tarp 2017).

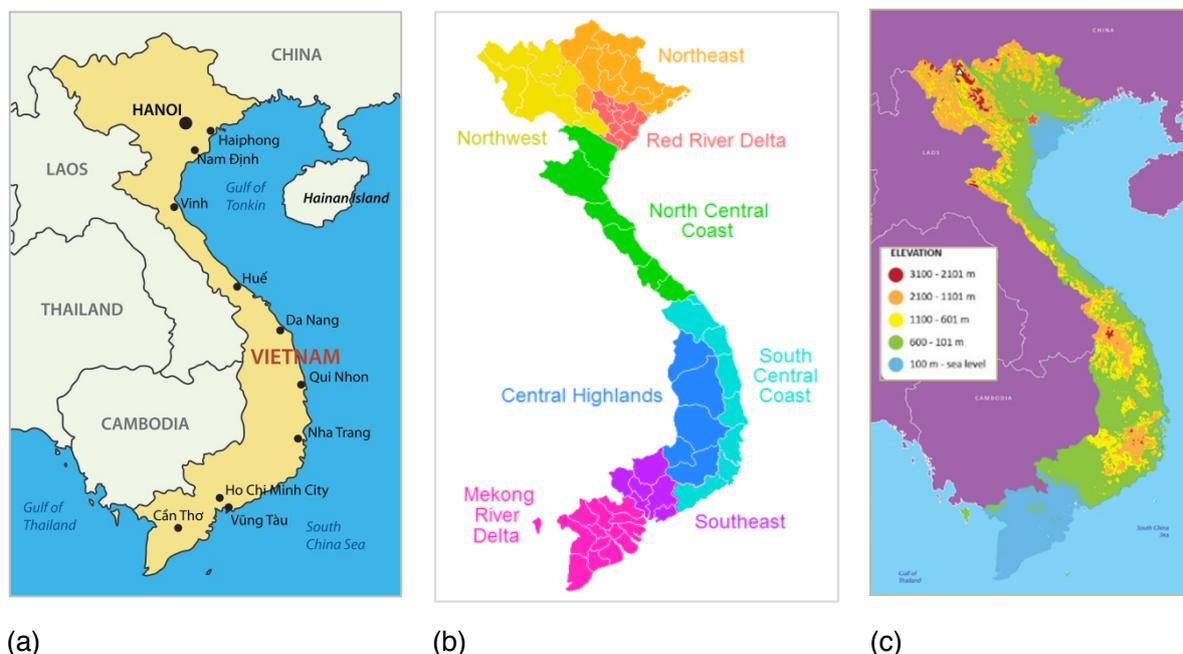


Figure 1 (a) Viet Nam's national boundary, (b) its 8 eco-regions, and (c) elevation

(Source: <http://www.vietnam-guide.com/maps/>, https://en.wikipedia.org/wiki/List_of_regions_of_Vietnam, and <https://www.cdm.org/voyagetovietnam/elevation.html>)

In terms of topographical condition, the NE region covers mountainous provinces that extends north of the Red River lowlands. The NW region covers inland provinces in the west of the country's northern geography. It has two provinces that border with Laos, and three bordering with China. These two eco-regions (NE and NW) are commonly referred to as northern mountainous regions with high elevations (Fig. 1c). Compared to other regions, the RRD has the smallest land area but has the highest population and is dominated by small but densely populated provinces along the Red River. The NCC region covers the coastal provinces in the northern half of central Viet Nam. The provinces span from the eastern coast to Laos in the west. The SCC comprises coastal provinces in the southern half of central Viet Nam. The CH consists of mountainous inland provinces of south-central Viet Nam, whereas the SE region covers the lowland parts of southern Viet Nam, north of the Mekong delta. The MRD region is the country's southernmost region, dominated by small but populated provinces in the Mekong delta.

In terms of ethnicity, Viet Nam has 54 different ethnic groups with Kinh as the majority that constitutes about 85% of the total population in the country. The Kinh people live throughout Viet Nam (Fig. 2a). The upland regions such as NW, NE and CH, are home to different ethnic minorities referred to as mountain tribes in Figure 2a. In terms of climate and based on the Koppen classification, the northern region experiences a humid sub-tropical climate (Fig. 2b) with a cold winter from December to March while the southern region has a tropical climate with rainy and dry season.

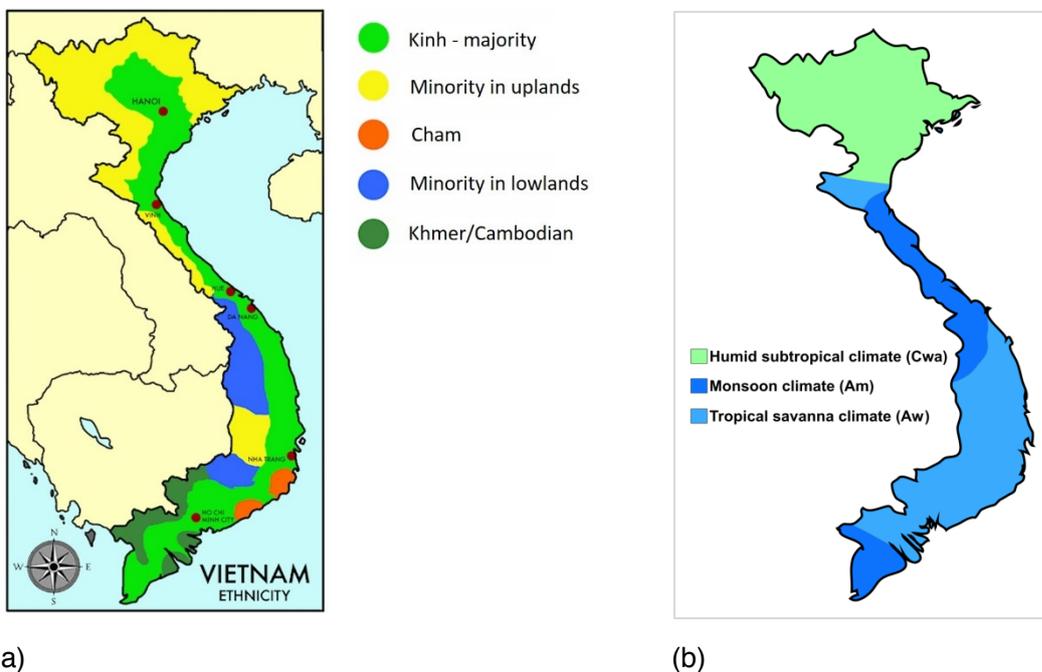


Figure 2 (a) Simple map of ethnicity in Viet Nam, and (b) the climate condition based on Koppen climate classification (source: <https://www.pinterest.se/pin/498562621241399978/>, <https://en.wikipedia.org/wiki/Vietnam>)

1.2 Overview of demographic and socio-economic condition in the country

In terms of demography and the social context, the country saw rapid population growth from 60 million people in 1986 to approximately 95 million people in 2017. By 2050, the population is projected to expand into 120 million. The percentage of the population that is under 35 years of age was recorded at 70% in 2017, reflecting a young and productive generation, with an average life expectancy of 73 years. According to the World Bank, due to economic growth, there has been an emerging middle class that currently constitutes about 13% of the population and is projected to reach 26% by 2026.

According to the 2017 data from World Bank⁸, Viet Nam has developed remarkably over the past three decades, having implemented a successful economic and political reform since 1986 known as Đổi Mới reform (described further below), that brought the country from being among the world's poorest nations to a lower middle-income country in 2011. The country's 2017 economy has been described as resilient with strong domestic demand that supports growth in industry and trade, as well as robust export-oriented manufacturing and foreign investment inflows that led to steady GDP growth reaching 6.8% in 2017; the highest among the growths that the country has achieved within the last decade. By 2017, the country's GDP reached about USD 224 billion with approximately USD 1,835 of GDP per capita (Fig. 3).

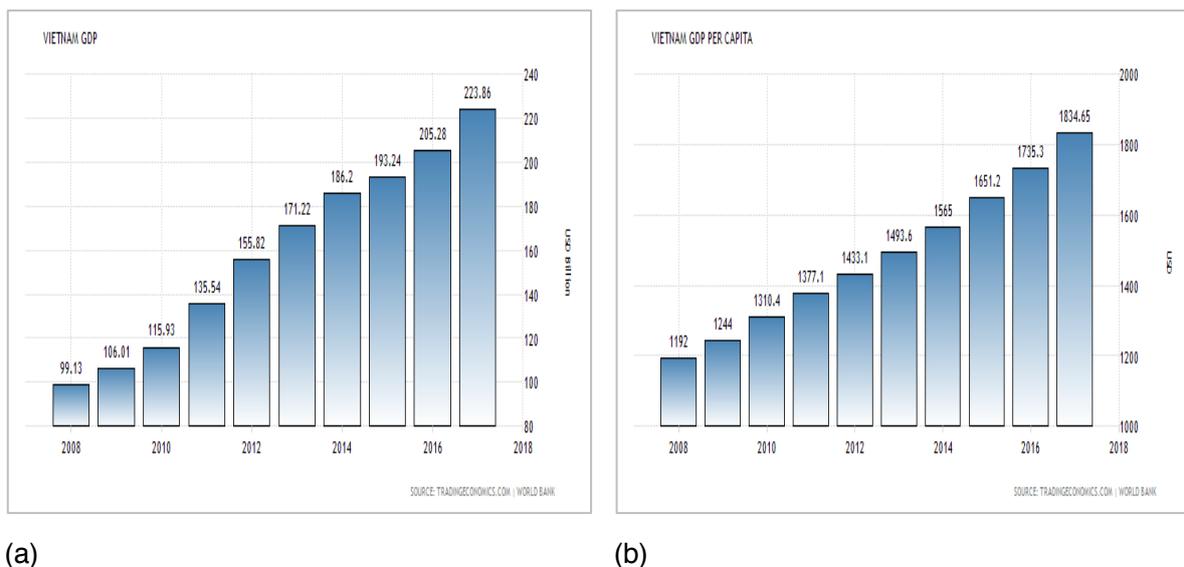
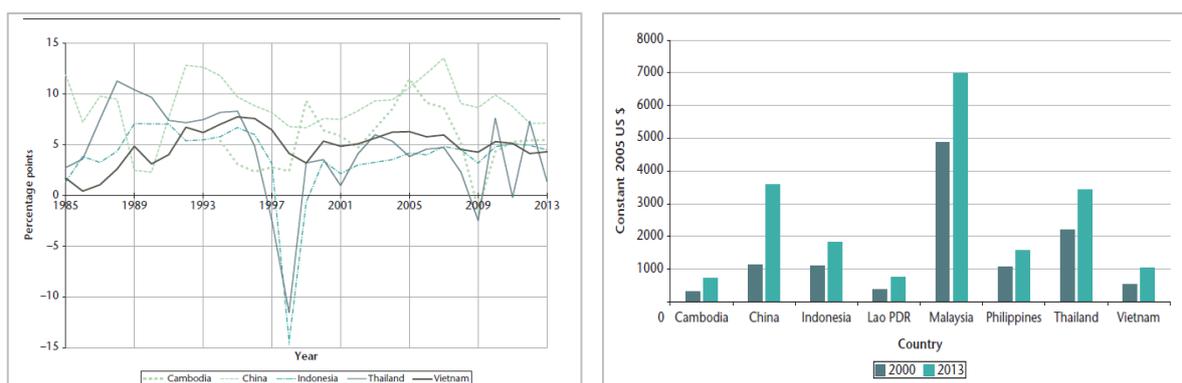


Figure 3 Viet Nam (a) GDP and (b) GDP per capita over the last ten years

Among other emerging economies in Southeast Asia such as Indonesia and Thailand, Viet Nam's economy remained stable and fluctuated less across the years, including during the Asian economic crisis in 1997-1998 (Fig. 4a). In terms of real GDP per capita however, the country remains relatively poor compared to other countries in Southeast Asia and also China. Among the 8 countries shown in Figure 4b, in terms of real GDP per capita, Viet Nam is more economically advanced only when compared to Cambodia and Laos.

⁸ <https://www.worldbank.org/en/country/vietnam/overview#1>



(a)

(b)

Figure 4 (a) the growth of real GDP per capita in selected Asian countries during 1985–2013, (b) real GDP per capita in the selected countries (Source: World Bank World Development Indicators as presented in Tarp 2017)

The World Bank has reported that over the last three decades, the country has highly improved in various aspects such as basic service provision to enhance people’s access to education, health system, electricity, sanitation, and clean water. The country has also seen a reduction in maternal and infant mortality rates and the number of underweight, stunting, and wasting children. Furthermore, in terms of gender, it was also reported that gender gaps in access to basic services and different opportunities have recently been narrowing. Some gaps that still exist are those relating to women’s opportunity to access high-level leadership positions and, in general, there is remains a lack of various access and opportunities for women belonging to ethnic minority groups.

1.3 Main agricultural and forestry products

Although its share in national GDP is declining, agriculture is still widely practiced in all eco-regions in the country and is the main source of raw materials for the processing industries and an important contributor to export value. The main powerhouses of agricultural production, especially rice, are located in the two delta regions namely RRD and MRD. More permanent cultivation such as coffee plantations are concentrated mainly in the upland regions such as the NW and CH regions.

According to the national statistic record, rice, maize, sweet potatoes, cassava, sugar cane, cotton, peanut and soybean are the country’s main annual crop products. By 2018, the total cultivated area of paddy was approximately 7.6 million hectare and for maize 1.04 million hectare, as the most cultivated annual crops in the country. The average productions of the two crops were 5.81 ton ha⁻¹ and 4.72 ton ha⁻¹ respectively. For the perennial crops, important fruit crops include grapes, mango, citrus (i.e. orange, pomelo), longan, litchi and rambutan. The country’s main industrial crops are coffee, tea, rubber, pepper and cashew nuts. The production of coffee is mainly located in the CH region for Robusta type, and NW region for Arabica type. Tea is widely cultivated in the NE region. Rubber plantations are popular in CH and SE region, although there has been substantial development in the number of acacia plantations for pulp and paper due to stronger support in industry and markets.

Related to timber plantation, short-rotation acacia plantations for pulp and paper are currently the most popular forest plantation system in Viet Nam (Trieu et al. 2016), dominating the areas of productive forest in many regions in the country (Tran et al. 2014). The system is usually maintained for four years, with two of the most popular acacia varieties -*Acacia auriculiformis* and the hybrid *Acacia mangium x auriculiformis*. For timber-purpose plantations, some popular tree species include *Melia azedarach*, *Manglietia conifera*, *Chukrasia tabularis*, and *Erythrophloeum fordii*. Along with an increasing demand for timber for furniture and other industries, the government of Viet Nam is currently targeting timber production to develop the two acacia varieties as well, with a rotation cycle of roughly eight to twelve years.

The 2016 national statistic has recorded pigs and poultry as the focus of livestock production, followed by cattle and buffalo. The main livestock products include meat, milk, and egg, with honey from bee-keeping and silkworm cocoons as the other products. In the aquaculture sector, fish and shrimps, either from marine or inland aquaculture system, are the most popular. Recently, shrimp farming has been popular in the MRD region since farmers need to adapt to the increasing incidence of saline intrusion into farming lands. A substantial number of rice farmers in the region have diversified their livelihood option by adopting shrimp farming.

2. Concept and practice of rural and structural transformation

2.1 Definition and linkage

Johnston (1970) defined rural transformation as “essentially a part of structural transformation characterized by diversification of the rural economy away from agriculture. This process is facilitated by rapid agricultural growth, at least initially, but leads ultimately to a significant decline in the share of agriculture to total employment and output and in the proportion of rural population to total population.” It can also be defined as “a process of comprehensive societal change whereby rural societies diversifies their economies and reduce their reliance on agriculture and become dependent on distant places to trade and to acquire goods, services, and ideas.” (Berdegué et al. 2014). The challenges and opportunities involved in rural transformation relate to rural-urban linkages and are influenced by many sectors both inside and outside of agriculture.

The structural transformation and its process has been a central theory of development economists such as Lewis (1954), Kuznets (1973), Chenery et al. (1986), and Timmer (2009). Most of the literature on structural transformation has also focused on the transition from a predominantly agricultural-based and rural economy into a more diversified non-agricultural and urban economy, with the reallocation of resources from traditional to modern agriculture, manufacture and services. Timmer (2009) describes four relentless and interrelated processes that define a structural transformation namely “a declining share of agriculture in GDP and employment, a rural to urban migration that stimulates the process or urbanization, the rise of modern industrial and service economy, and a demographic transition from high rates of births and deaths (common in backward rural areas) to low rates of births and deaths (associated with better health standards in urban areas).”

Structural transformation is usually a long process that needs to occur over decades, resulting in economic development that is expected to augment wealth, improve quality of life of the society, and lead to sustainable development (Dang et al. 2015). The latter is defined as a continuous and long-term improvement in living standards, especially in poor and disadvantaged households, and in society as a whole (Andersson 2003). In developing countries, where most of population inhabits rural areas and relies on subsistent agriculture and its related activities as the source of income, structural transformation is usually embarked upon through agricultural and rural transformation. The sustainable transformation of the agriculture and rural economy is expected to bring an increase in employment opportunities in the rural areas, narrowing income disparities among regional areas, and ultimately reducing poverty both at rural and national level at its very source (Anriques and Stamoulis 2007).

The role of agriculture in structural development can be classified into four successive stages (Briones and Philippe 2013); *early stage* where agricultural labor productivity starts to increase; *surplus stage* where the increase in agricultural productivity generates surplus that supports the development of non-agricultural sectors; *integration stage* where agriculture is gradually integrated with other economic sectors due to improved infrastructure and market development; and *industrialized stage* where integration has been successful and there is a diminishing role of agriculture to become just one of major sectors in the country's economy. Previously, Timmer (1988, 2009) described the four basic stages of agriculture's role in economic development and structural transformation whereby agriculture moves towards full integration into the rest of economy through labor and the financial market.

2.2 Experiences from other countries

Today's developed countries began their structural transformation in the eighteenth century, while developing countries embarked much later and are generally still in the earlier stages. During the past three decades, many countries have been inspired by the successful transformation in Viet Nam and China and have tried to take similar pathways. However, they did not arrive at relatively similar success especially in the first decade after the introduction of agricultural reforms (Rozelle and Swinnen 2004). For example, some among ex-socialist Eastern European countries experienced a fall in agricultural production and national economic performance following a series of agrarian reforms, before recovering and experiencing positive growth after a decade or so. On the other hand, a number of African countries, especially in Sub-Saharan region, underwent slow economic development after a series of agricultural reforms. These countries were tempted to take a different pathway for their economic reform, by not reforming the agricultural sector and instead expect an immediate shift from an agrarian to an industrial economy (Meliczek 2016). There has been much debate on the potential success of this immediate transformation model since no single country in the world has historically achieved a success in economic reform without reforming its agricultural sector (Timmer 2009). This is discussed further in the next section.

As reported by Briones and Philippe (2013), structural transformation has been advancing in recently industrialized economies in East Asia such as Japan and the Republic of Korea. Meanwhile, it has been less advanced in the fast-growing emerging economies such as the People's Republic of China and Viet Nam, Indonesia and Thailand, and even less so in some South Asian countries such as Bangladesh, India, and Pakistan. According to the authors' four stages of agricultural role in the process of structural transformation, between 1980 and 2010,

most of the Asian countries advanced by one stage. Some countries, such as the Republic of Korea and Viet Nam, have advanced by two stages while a few like the Philippines and Thailand have remained in the same stage.

In the late 1980s, the leaders of many nations in the Central and Eastern Europe (CEE) and in the former Soviet Union (FSU) began to dismantle socialism and provided households with more freedom in managing and marketing their agricultural products (Rozelle and Swinnen 2004). The countries implemented a series of supporting policies, provided more incentives and improved the rural institutional system. Following great successes in China and Viet Nam, there was global expectation to witness new growing economies in the CEE and FSU. However, the reforms produced disappointing results with an immediate fall in agricultural productivity and more severe rural poverty (Brooks and Nash 2002). In some countries, the fall only took place in the early stage of reform while in others it continued during the first decade (Rozelle and Swinnen 2004). For example, the decline in agricultural outputs lasted for two or three years in Balkan countries such as Albania, Romania, and Slovenia. In most Central European countries, the fall continued for five to six years such as in Poland, Hungary, and the Czech Republic. The longest period of decline took place in some of the Baltic nations and nations belonging to the Commonwealth of Independent States (CIS) such as Russia, Belarus, Ukraine, and Kazakhstan. In these countries, the agricultural outputs were very low in most of the time over a decade after the reform and could decline to 50% compared to pre-reform outputs.

The contrasting results among countries in the early period of agricultural and economic reform have triggered an intense debate to better understand the underlying factors. For example, economists studying East Asia highlight the importance of gradually sequencing the reforms; starting from those mainly focused on reforming land rights prior to any market reforms. Some opponents claim that the remarkable economic growth in China and Viet Nam had no relation with the land and market reform, and some others like Hughes (1994) emphasized that the structural transformation in the two countries provides no guidance for understanding the transformation in the CEE countries. Meanwhile, Rozelle and Swinnen (2004) compare and discuss at length the rural transformation in the Asia and Europe continent.

The efforts towards reforming agricultural sector by countries in the African continent, especially in the Sub-Saharan region, have not yet led to a promising restructuring of agriculture, integration of farmers into the economy, or development of rural non-farm economy (Freguin-Gresh et al. 2012, Alogo Laison 2017). Constraints in the region for enabling a successful structural transformation include severe poverty, limited income-generating activities, lack of provision in public goods and services (such as infrastructure, irrigation, research, information, training, capacity building), and limited market access. Among these various factors, the World Bank argues that *poor land governance*, namely the ways in which land rights are defined and administered, may constitute the prime cause of land inefficiency and massive poverty. The World Bank have recommended a set of revolutionary ways to improve the land governance that can help to transform agricultural production in the continent. The recommended steps are partly based on lessons learned from agricultural land reforms in different countries over Latin America and Asia and are tailored to accommodate experiences from land reform pilot projects underway in some countries in the continent such as Malawi, Benin, Burkina Faso, Ghana, Mozambique, Tanzania, and Uganda. Through the pilot projects, a number of countries in Sub-Saharan Africa have shown significant progress in recognizing customary land rights and gender equality, identified as two key aspects needed to consider for developing a sound land administration. The recommended steps include “securing tenure rights for community lands and individual plots, increasing efficiency and transparency in land administration services by empowering local

communities and traditional authorities, and developing capacity in land administration by encouraging policy reforms and providing training.”

2.3 Can structural transformation be achieved without reforming agriculture?

In his concise yet comprehensive book, Timmer (2009) declared that historically no country –with only a few exceptions– in the world has been able to undergo structural transformation with an economic transition out of poverty without reforming its agricultural sector. This is simply because a successful structural transformation needs agriculture to provide foods, labor, and even savings to the process of urbanization and industrialization. Early development economists also consented that agriculture performs important tasks to support the transformation in the developing nations, especially in the early stages. During that period, agriculture will become a source of inexpensive foods, provides labor for the emerging manufacture and service sectors, and can also supply non-food commodities for domestic consumption and trading (Rozelle and Swinnen 2004).

For the case of African countries, Freguin-Gresh et al. (2012) argued that an immediate shift to industrial economy looks like the easiest option to accelerate structural transformation and might be possible due to global investment and market, advancements in technology, as well as the labor market. However, the authors also highlighted that the Sub-Saharan region is not yet equipped with sufficient human- and other- capital, and although international migration and labor has been an important historical component of structural change, it is unlikely that under today’s geopolitical context there will be an easy outlet for labor from developed countries, because the global labor market has been so competitive. The African Development Bank (2013) has also emphasized that, since agriculture has been historically and currently still the prime economic sector in many African countries and employs a majority of the population, policy makers across the continent need to maintain and develop strategies for agricultural development and productivity improvement whilst implementing strategies to transform the countries from agricultural-based towards manufacture and service economies.

3. Agricultural and rural reform in Viet Nam

This section consists of two parts namely the overview of agricultural and rural policy under the Communist collective system (1954-1986) and the overview of revolutionary land and market reforms since 1986 known as *Đổi Mới* especially those promulgated between 1986 and 2000, that have provided a strong foundation for Viet Nam’s economy until today.

3.1 Under central-planned collective system

In 1954, Viet Nam became independent from France, and the Geneva Accords divided the country into two main parts, namely Northern and Southern region. The two regions had opposite political systems whereby the Democratic Republic of Viet Nam in the north adopted a socialist ideology influenced by China and the Soviet Union, whilst the Republic of Viet Nam in the south adopted capitalism influenced by the United States. The two regions also adopted different policies to develop the rural economy with centrally-planned or collective agriculture in the north, and market-led agriculture in the south that is highly commercialized and export-oriented

(Nguyen 2010). In the former, households were grouped into production brigades and required to meet government quotas of agricultural production.

Following the reunification in 1975, the Vietnamese Communist Party intended to implement the centrally-planned system, in particular the large-scale collective agricultural scheme, to the whole country. Under this rural economic development model also known as a “State-controlled” or “command economy”, there was strong control by the central government in the agricultural sector in which the State held full authority to set a target of agricultural output and price, supply of inputs, domestic wholesale and retail trade, and international trade. The state adopted a vertically integrated economy which restricted any horizontal commercial interaction among individual production units (Beresford 2006). The government also formed three types of cooperatives to manage the agricultural production and rural communities- namely cooperatives of production solidarity groups; lower-level cooperatives managed the sharing of land and equipment, and higher-level cooperatives adopted a system of work-points as the basis of determining income distribution (Beresford 1988).

The attempt to impose the centrally-planned economy was, however, unsuccessful to society to the south. It has been reported that by 1980, the number of households that adopted the system was about 24.5 percent only from the total number of households in the south and, among these, they comprised part of the collective system by on-paper only (Kerkvliet 1995, Nguyen 1995). The implementation of collective agriculture resulted in low grain production that forced the country to increase its volumes of imports. The amount of grain that the government collected from the farming community was also in decline as households tried to avoid State procurement by selling their products to informal private markets with higher selling prices, reported to be up to ten times higher than the price set by the State.

This situation immediately led to an economic crisis in the early 1980s (Nguyen 2010). The State’s food-crop procurement system was failing, and international aid from the Soviet Union and China were also declining, and thus Viet Nam found itself at risk of famine. To prevent the situation from worsening, the Vietnamese Communist Party issued a Directive 100 in 1981 that allowed cooperatives to contract with individual households which meant that any production surplus could be sold to the private market or to the State’s trading agencies. Although implementation of this Directive provided a signal of early agricultural and economic growth, the reform was soon found to be ineffective in providing incentives for farmers to increase productivity and to sustain incipient growth (Nguyen 2010). Agricultural growth started to slow down in 1983 and showed a negative trend in the following years. Consequently, high inflation occurred and the gap in prices between free market and the State’s standard rose again to ten times or more. The country was once more at the brink of famine. Due to this economic hazard, the centrally-planned economy was abandoned following the sixth National Congress of the Communist Party of Viet Nam held in December 1986.

3.2 Revolutionary land and market reforms

In the 1986 Congress, the Vietnamese Communist Party promulgated a series of reforms that would ultimately transform the country from a centrally-planned economy into a social-market economy. The reforms and their implementation process, known as *Đổi Mới*, started to be effective in 1988. When the collectives were actually dismantled, land rights were assigned to farmers, agricultural markets were less and gradually no longer restricted, and further economic reforms were implemented (Vo 1995, Liljestrom et al. 1998, Nguyen 2010). The centrally-planned

system's dependent on the subsidies from the State also ended and the country moved to focus on building its market-led economy where private sectors and the State could, to some extent, compete in non-strategic sectors (van Arkadie and Mallon 2004).

In 1987, the State also significantly revised the check-point system to provide less restrictions to domestic trade and, consequently, market opportunities for private agricultural products were rapidly growing. Private enterprises were for the first time permitted and later encouraged. In 1990, the Law on Private Enterprises was promulgated to provide a legal basis for establishing private firms, whilst the Law on Companies acknowledged both joint-stock and private limited-liability companies. The constitutions enacted during 1992 officially recognized the role of private sectors. In the first half of the 1990s, there had been a significant progress related to the creation of legal framework for private sectors (Hakkala and Kokko 2007).

Related to reforms in agricultural sector, through the Land Law promulgated in 1988 and later in 1993, the State acknowledged private land use rights (e.g. please see Liljestrom et al. 1998). Additionally, the Central Committee Resolution 10 gave way for households to use land for long periods of time, access to the free market to sell their products, and have more free choice regarding their participation in cooperatives (van Arkadie and Mallon 2004). The Resolution aimed at transforming rural development from centrally-planned or collectives to household-based production and allowed households to have a contract with the cooperatives; 15 years for annual crop cultivation and 40 years for perennial crops. Households were also permitted to raise and market their livestock, and purchase equipment and machinery. During this period, the State still set a production quota, but this was much lower compared to the era of command economy, with product price fixed for five years which provided households with a degree of certainty for managing the land and an ability to obtain a return profit from selling the products (Nguyen 2010).

The private sectors were also allowed to be involved in the agricultural markets. Further reforms that led to market-led agriculture were also announced. For example, from 1987 to 1991, the State started to relinquish control over agricultural products' prices and provided opportunities for both domestic and international trade. These initiatives provided farm households more incentives to increase productivity and develop entrepreneurship, and gain higher economic benefits from selling agricultural products. Not long after the declaration, the reforms boosted agricultural production, increasing the competitiveness of the country's exports in international markets. Having gone from a serious economic crisis in 1987 and 1988 in which Viet Nam needed to import more than 460,000 tons of grains per year to tackle the shortage in the national food supply, the country could now rapidly satisfy domestic demand (Dang et al. 2005, Nguyen 2006).

The growth in the agricultural sector became a key driver for overall economic growth in the country (Nguyen 2010), floating demand for construction and services. The country's economy was stable and remained strong despite a persistent decline of international aid, especially after the collapse of the Eastern European socialist countries during 1990–91. Yet still, in this period farmers were constrained in their ability to grow commercial crops such as coffee, rubber, cashew nut, and pepper, largely due to the absence of complete and long-term land rights (Nguyen 2010). This hampered farmers access to loan systems because financial institutions refused to accept their land use rights as collateral. In 1993, the State enacted another Land Law that regulates an extended land right from 15 to 20 years for annual crops, and from 40 to 50 years for perennial crops such as coffee and rubber. This included rights to transfer, exchange, lease, inherit, and mortgage their land, which gave farmers greater security. During this time,

land titling was also introduced and implemented effectively, and approximately half of agricultural lands had been titled by 1997 (Benjamin and Brandt 2004, McCaig and Pavcnik 2013). The households were also equipped by land use certificates, commonly called 'red books', generally with registered names of both the household head and their spouse. A series of further land reforms were also promulgated in 1998, 1999, and 2001, and the renewed Land Law was introduced in 2003 (Marsh et al. 2006, Markussen et al. 2011). This series of reforms started with the agricultural sector and made the period of 1993 and 2000 a 'golden age' of economic development in Viet Nam (Nguyen 2010).

In the 21st century, the country continues to enact supporting policies and incentives to boost foreign investment to different including agricultural sectors. For example, in 2014, the Ministry of Industry and Trade (MOIT) enacted Circular No. 02 that relinquishes tax for materials imported to enhance domestic agriculture production. Decree No. 210/2013/ND-CP was also enacted to provide more incentives for agricultural projects, in which the investors of the projects will receive up to a 70 percent reduction in land use fees. This incentive aims to attract more FDI to strengthen and advance industrialization in the country's agricultural sector.

Compared to other countries, economic reformation in Viet Nam has been considered more attention-worthy by its transformation from being centrally-planned to a socialist-market economy, rather than outright to liberalization of the domestic economy and international transactions (Tarp 2017). In this system, the Communist Party and the state apparatus continue to play prominent roles in different socio-economic and political aspects (Newman et al. 2014). For example, the government to some extent continues to intervene in agricultural markets (Markussen et al. 2011) and centrally coordinates public investments, targeted policies, and institutional initiatives (Abbott et al. 2009). It has been said that other developing countries have a lot to learn from Viet Nam regarding the formulation and implementation of economic reform and effective development policy (Tarp 2017). In addition to the national reform, the integration of the country into the global economy has been identified as the main driver of economic growth.

4. Impact to rural livelihood and socio-economy

4.1 Share of agriculture to the national GDP

By 2016, agriculture contributed 18.1% to the country's GDP⁹. Figure 5 describes the share of three main economic sectors in the country to national GDP from 1983 to 2013. During this period, there was a substantial decrease in the share from agriculture and, in contrast, a substantial increase from the manufacture and service sector. Due to decreasing employment in the sector, agriculture's contribution to national GDP is expected to decline by 0.5% annually¹⁰. As a common feature of the transition economy, along with economic development, the percentage of population working in agriculture will be in decline. In general, while more than two-thirds of the population in poor or developing countries are involved in agricultural sector, the figure in developed countries is generally less than 5%¹¹. For the case of Viet Nam, by 2017, 40.87% of active labors were involved in agriculture, 34.06% in service, and 25.07% in

⁹ <https://www.statista.com/statistics/444611/vietnam-gdp-distribution-across-economic-sectors/>

¹⁰ <https://oxfordbusinessgroup.com/news/vietnam%e2%80%99s-agriculture-sector-crossroads>

¹¹ <https://ourworldindata.org/employment-in-agriculture>

industry¹². It is mainly due to an increase in productivity that makes the share of population in agriculture decline without compromising its production level. The increase in productivity also allows for less availability of land area for agricultural production and can be utilized for developing other economic sectors- such as manufacture and services. The labor share in agricultural sector of the country is predicted to decrease down to 25-30% by 2030 and the decrease will be offset by a high job opportunity in the sector of value-added components (World Bank 2016).

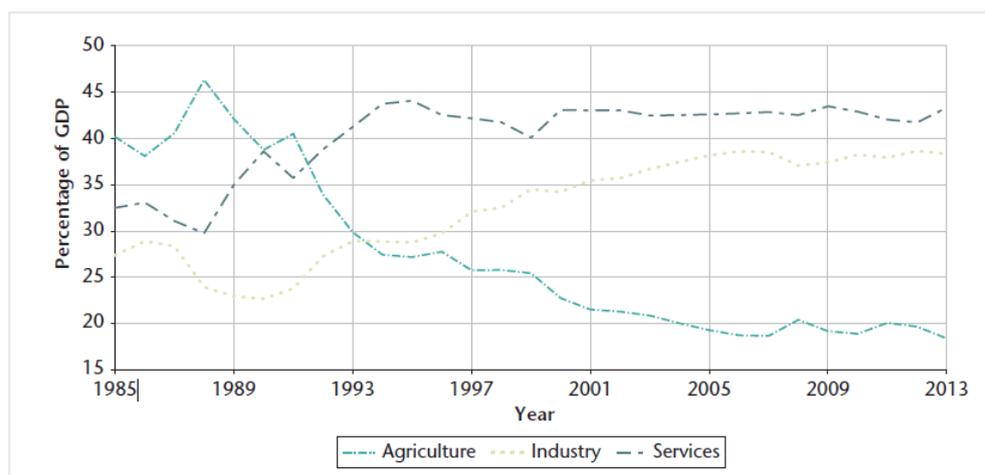


Figure 5 Share of three main economic sectors to national GDP of Viet Nam (Source: World Bank World Development Indicators as presented in Tarp 2017)

4.2 Agricultural production and food supply

The Đổi Mới reforms provided incentives that encouraged farmers to intensify their farms- including rice fields- and diversify by producing commercial crops such as coffee and cashew. The reforms soon helped the country to reduce rural poverty, hunger, and malnutrition (Nguyen 2010). Between 1987 and 2014, the rice production in Viet Nam rose sharply with relatively steady growth (Fig. 6). This was achieved due to the government’s partial control over the use of land, requiring households to cultivate rice in certain designated areas, motivated by a concern for food security since rice is the main staple food in the country (Cazzuffi et al. 2017). On non-restricted land areas, households could cultivate other crops according to their preferences. Furthermore, due to concerns about food security, quotas of rice exports were also limited - although these have relaxed since 1990s. According to the International Rice Research Institute (IRRI), Viet Nam started as a rice importer before 1980s and since transformed itself- becoming the second biggest rice exporter in the world by 2012¹³.

¹² <https://www.statista.com/statistics/454920/employment-by-economic-sector-in-vietnam/>

¹³ <https://www.worldatlas.com/articles/top-rice-exporting-and-importing-countries.html>

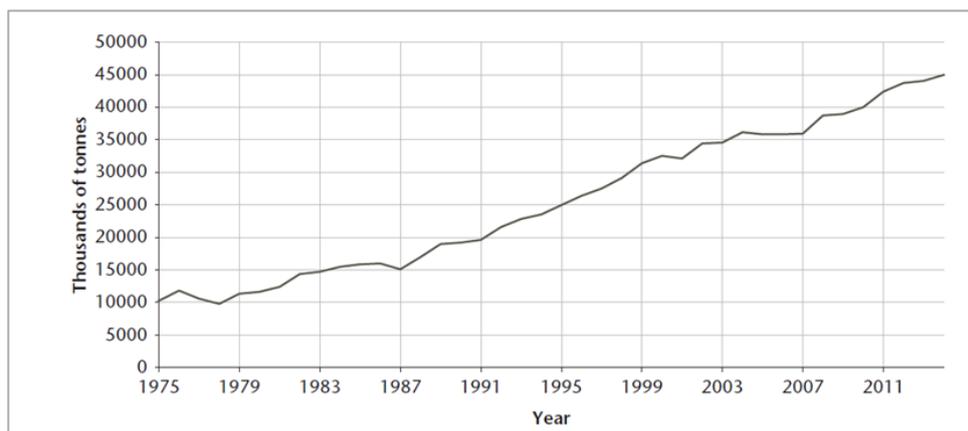


Figure 6 Rice production in Viet Nam from 1975 to 2014 (source: FAOSTAT as presented in Cazzuffi et al. 2017)

Thanks to the Đổi Mới reform, access to agricultural inputs such as fertilizer became easier, and rice growers could intensify their rice-based systems to increase yields. It has been reported that from 1985 to 1995, mainly due to land intensification, the average paddy yield in the MRD region increased by 32% from 3.05 ton to 4.02 ton ha⁻¹ (Le Coq et al. 2001). By 2012, the total area of paddy fields in the region accounted for 7.5 million ha with a total production of 38 million ton per year and constituted about 51-55 percent of the national production (Smith 2013). More certainty in land rights and available access to farming equipment also substantially contributed to the higher production.

According to General Statistical Office (GSO) of Viet Nam, by 2016, the total area of paddy field in the country was 7.8 million ha with an average production rate of 5.6 ton ha⁻¹. Among the eight eco-regions, the largest areas of paddy fields were found in the MRD region with 4.3 million ha or 55% relative to the country's total area followed by the combined NCC and SCC region with 1.2 million ha (16%) and RRD with about 1.1 million ha (14%). The smallest area was found in the CH region with about 233 thousand ha. In terms of production, national production reached 43.6 million tons in 2016, with 24.2 million tons, or 55%, coming from the MRD region, 6.8 million tons or 15.8% from the combined NCC and SCC region, and 6.6 million tons or 15% from the RRD region. As expected, the smallest contribution came from the CH region with 1.17 million tons or 2.7% relative to national production.

For industrial crops, the Land Law enacted in 1993 strongly encouraged farmers to develop perennial cropping systems across all regions in the country. Taking coffee as an example, although this perennial crop has been cultivated in the CH region mainly in Dak Lak province since 1920s, the country's political instability that took place until mid-1970s disrupted coffee production. Eventually, in the early period after the reunification, and similar to all other crops, the collective system resulted in low production. The long-term land rights and involvement of private enterprises in the agricultural sectors since the 1990s resulted in the booming of coffee production. In the 1990s, the branding of processed coffee, early export, and new companies were established. By the late 1990s, Viet Nam had become the second biggest coffee producer in the world after Brazil, and this status still prevails today¹⁴, although production largely focuses on Robusta coffee. The country has also been able to produce other coffee varieties such as Arabica and mixed-bean coffee. According to the GSO, the total area of coffee plantations

¹⁴ <https://www.bbc.com/news/magazine-25811724>

reached 645,400 ha in 2016. Among perennial industrial crops, coffee production was the second largest amount of land in terms of area after rubber that had total area of 976,400 ha. Other important perennial crops include cashew (293,000 ha), tea (131,500 ha) and pepper (124,500 ha). In terms of production, the 2016 coffee bean production reached about 1.5 million tons.

4.3 Poverty and hunger

Nowadays, agriculture in rural Viet Nam has been increasingly commercialized, including rice. Based on data from the Viet Nam Access to Resources Household Survey (VAHRS), Cazzuffi et al. (2017) reported that between 2006 and 2014 most rural households in Viet Nam still grow rice as part of their livelihood, and around half of the surveyed households sold rice in any given year. The authors also claimed that the commercialization of agricultural activities in rural Viet Nam has been recognized as an important contributor to the impressive rural poverty reduction the country. According to them, the agricultural commercialization can be identified through farmers' preference for selling some of the surplus agricultural products including rice, preferring to grow commercial cash crops, and the choice to engage in aquaculture that can provide higher economic benefit.

Linh (2015) reported that Viet Nam has been experiencing rapid reductions in poverty over the past two or three decades. It is predicted that over the coming decade, the poverty rate in the country will likely move towards zero if using the USD 1.25 per day as a standard poverty line. The USD 2 per day will likely soon become an irrelevant standard too. Based on the GSO and the World Bank (GSO-WB) standard poverty approach¹⁵, the national poverty rate is projected to drop to 8 percent by 2020. Fig. 7a describes the decline in Viet Nam's poverty rate across years based on different standards- namely the USD 1.25 per day, USD 2 per day, from the GSO-WB, and from the Ministry of Labor, Invalids, and Social Affairs (MOLISA). There are two main approaches to setting poverty lines in Viet Nam. First, the MOLISA's measures are based on income and used primarily for targeting social programs. The second is the measure by GSO; based on standard daily food intake (2,100 kcal per person per day) and secondary consumption patterns of the poor- this standard is primarily used for monitoring poverty over time. In 2013, the GSO's poverty line was set at VND 570,000 (equivalent to about USD 28) per capita per month for rural areas, and VND 810,000 (about USD 40) per capita per month for urban areas. Using this standard, the 2013 national poverty rate was estimated at 9.8%. The 2016 statistic data published by GSO provides a persistent decline in the poverty rate between 2014 and 2016, with a figure of 5.8% in 2016.

The higher food production and sharp decline in poverty rates have enabled the country to reduce the incidences of hunger. The International Food Policy Research Institute reported that, based on to the 2014 Global Hunger Index (GHI), Viet Nam was in 15th position amongst 81 countries suffering from hunger with a GHI of 7.5. This means that the country has transitioned away from an "extremely alarming hunger situation" (GHI \geq 30), "alarming" (GHI between 20.0 and 29.9), and "serious hunger" (GHI between 10.0 and 19.9) situation. This achievement has gone far beyond the period of early implementation of Đổi Mới reform, in which the GHI of Viet Nam was at 27.7 or in an "alarming situation" of hunger.

¹⁵ <http://blogs.worldbank.org/eastasiapacific/comment/reply/3218>

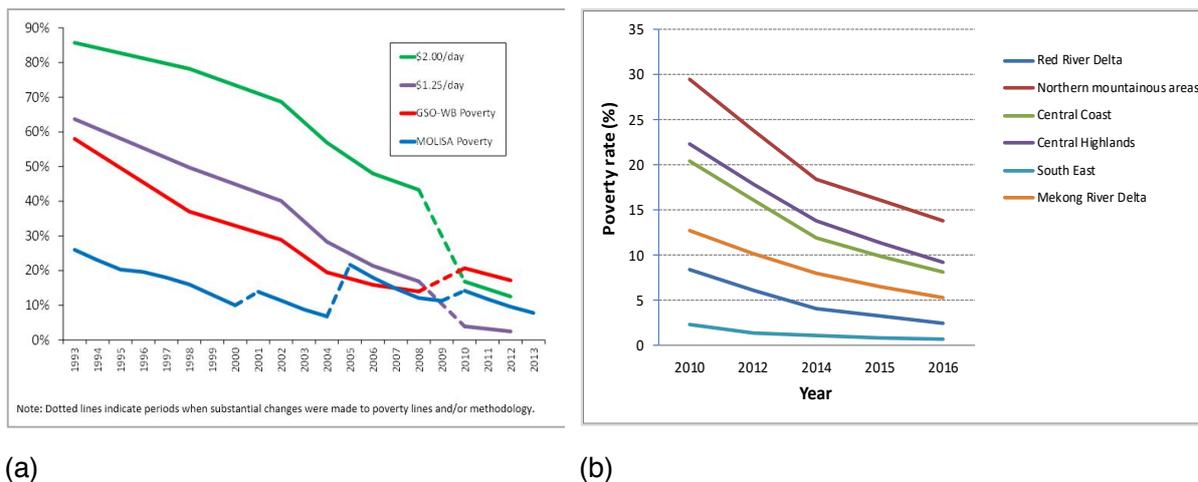


Figure 7 (a) Declining poverty rates in Viet Nam across years based on different standards (source: <http://blogs.worldbank.org/eastasiapacific/comment/reply/3218>), and (b) Poverty rate among eco-regions from 2010 to 2016 based on data from the General Statistic Office of Viet Nam.

However, there has been a high variation in poverty rates between rural and urban areas, and among the eco-regions. According to the 2016 data from GSO, the average poverty rate at national level was 5.8% in 2016, with an average of 2% in urban areas and 7.5% in rural areas. The data also provides the 2016 poverty rate in the 6 eco-regions; namely 2.4% in RRD, 13.8% in the northern mountainous areas (NW and NE region), 8% along the Central Coast (NCC and SCC), 9.1% in CH, 0.6% in SE, and 5.2% in the MRD region. Among the eco-regions, SE remained as the region with the lowest poverty rate during the period 2000-2016 (Fig. 7b). On the other hand, the northern mountainous areas of the CH and Central Coast region, were the three regions with the highest poverty rates respectively. Using the data from three recent Viet Nam population censuses (1989, 1999, and 2009) and three Vietnam Household Living Standard Surveys (1998, 2008, 2012), Dang (2018) also highlighted substantial difference in poverty incidence among ethnic groups, rural and urban areas, and among regions in the country. The author declared that despite a substantial decrease in horizontal inequality related to education, little change has been made in other welfare indicators, in particular poverty.

From a gender perspective, using the VAHRS data, Newman (2017) analyzed the differences between the income of female-headed and male-headed households in Viet Nam between the years 2008 and 2014. In this period, the author found that female-headed households had a significantly lower income than that of male-headed households. The incomes of both household categories were reported to have steadily increased from 2008 to 2014. For example, in the female-headed households the income rose from around 4.95 million VND in 2008 to 6.84 million VND in 2014. However, the income growth rate in male-headed households was found to be higher which resulted in a widening income gap between the two types of household over the period 2008-2014. The author also reported that female-headed households had fewer assets, such as durable goods, as well as less access to credit, significantly lower loan amounts, and much smaller holdings of land (about 50 percent less) compared to male-headed households. In terms of income source, women generally relied on similar sources as the male-headed households namely agriculture, self-employment, and wage labor, with the highest income having been derived from agriculture throughout all years.

4.4 Livelihood diversification among eco-regions

Livelihood diversification can be defined as “an active social process of individual or household to maintain or continuously adapt to diverse income activities to secure food security and improve living standard” (Ellis 2000b). The components of rural livelihood diversification can be classified by sector (farm or non-farm), by function (wage employment or self-employment), or by location (on-farm or off-farm) (Alobo Loison 2017). Livelihood diversification has been increasingly recognized as an important livelihood strategy among rural households and can bring a substantial improvement in terms of income, consumption, and nutrition. It also constitutes an important strategy to minimize economic risk or to cope with crises or shocks (Ellis 2000a, Reardon et al. 2006).

Rural households might choose to diversify their farm activities by growing different crops- either annual or perennial-, rearing different types of livestock, working on other farms, or partake in activities relating to the extraction of natural resources (Losch et al. 2012). Furthermore, when opportunities are available, people may also engage in different off-farm activities- such as waged labor, private business or even migrating to another region to find non-farm jobs (Haggblade et al. 2007). Some households may alternate between farm and non-farm activities depending on available opportunities or constraints that they may face (Djurfeldt and Djurfeldt 2013).

Instability of income sources and risk-averse behavior are usually the main drivers of income or livelihood diversification in rural households. This partially explains the empirical evidence that poor rural households tend to diversify their income sources more than richer households (Barrett et al. 2001, Block and Webb 2001). Another important factor is commercialization (Cazzuffi et al. 2017), but this relates more to ‘pull’ rather than ‘push’ factors driving economic diversification. Push factors relate to survival-led diversification while pull factors to opportunity-led diversification (Reardon et al. 2007, Alobo Loison 2017). Haggblade et al. (2010) also mentioned that pull factors relate to high-return activities while push factors correlate more to low-return activities. The extent of livelihood diversification by the rural households usually relates to their human, land, financial, and social capital. Communal factors, such as the availability of supportive infrastructure and financial institutions, also provide influence. For example, Mu and van de Walle (2011) found that improvements in road network encouraged rural households to engage or even switch from agriculture to non-agricultural activities.

Jirstrom et al. (2014) stated that increasing commercial orientation will in the long-term lead rural households to more specialize their agricultural products. In the shorter- and medium-term, diversification will firstly occur at farm level with new crops and other farms as well as non-farm activities. Jirstrom and Rundquist (1999) emphasized that diversification in this transition stage is important which allows rural households to increase income to reach a certain level of economic security. In the literature, there has been however a concern that livelihood diversification through non-farm or off-farm activities will create ‘feminized agriculture’ since male farmers will be largely involved in these activities, and in the long run this will bring serious impact to agricultural production. Another concern, non-farm and off-farm activities can also create a social tension due to a widening gap between rich and poor households. It has been recognized that poor households have to face more constraints to participate in non-farm and off-farm activities, due to their limited access to land, capital, education and vocational skills (Jirstrom et al. 2014). Lanjouw (2007) argued however that, along with an increasing pressure on farmland, non-farm and off-farm activities are potential alternative livelihood options for landless households.

Furthermore, since these activities also include small size enterprises with modest capital equipment, they can be accessible by poor rural households.

For the rural areas of Viet Nam, the longitudinal data from VARHS shows that most households interviewed in the survey still earned part of their income from agriculture and natural resource-based activities. There has been a tendency, however, that non-agricultural livelihoods become increasingly important as the economy develops (Beck 2017). In the regions characterized by uplands- such as CH and northern mountainous areas (NW and NE)- agriculture generally remains the main livelihood option and income source. In several provinces of other regions non-farm jobs, especially wage earnings, have become the main source of income.

Using the VAHRS data, Beck (2017) also reported that in almost all sampled communes, agriculture is one of the three most important livelihood options (Fig. 8), whereas in the northern regions with challenging biophysical conditions and rugged terrain, more than 50 percent of communes are engaged in forestry activities. Other options, such as aquaculture, construction works, and other occupations like producing handicrafts, have become more important during the survey period; namely 2006-2014 in the regions with close proximity to urban centers such as Ha Noi and Ho Chi Minh City. Figure 8 indicates that although there has been a significant shift in resource allocation among livelihood options, in general rural Viet Nam has experienced little radical change in the structure of livelihood options. Rural households have engaged more in aquaculture, construction, and handicrafts as important livelihood options across time, without having to leave agriculture behind.

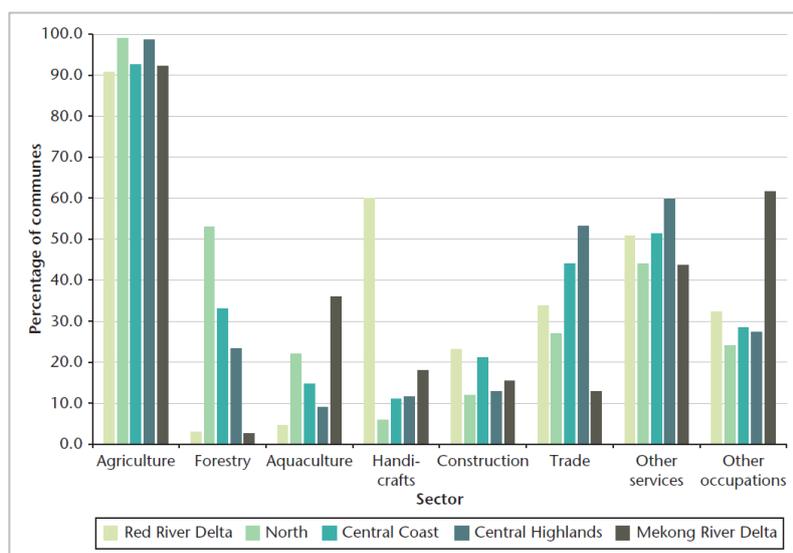


Figure 8 Livelihood options categorized by region in 2014 (source: Beck 2017)

Within the agricultural sector, there were also differences among regions over time between the types of crops that rural households cultivated (Fig. 9). Beck (2017) reported that in RRD, the majority of arable land was still used for rice cultivation, but this has tended to decline across the years with more land being used for other annual crops or for human residence. In the CH region, around 50% of the arable land area in 2014 was cultivated with commercial perennial crops - especially coffee, rubber, tea, and cocoa, with only about 30% dedicated to annual crops including rice (Fig. 9). In MRD, the country's rice bowl, the majority of land has been cultivated

with rice and in 2014 the total area of paddy fields in this region constituted more than 60% of all arable land.

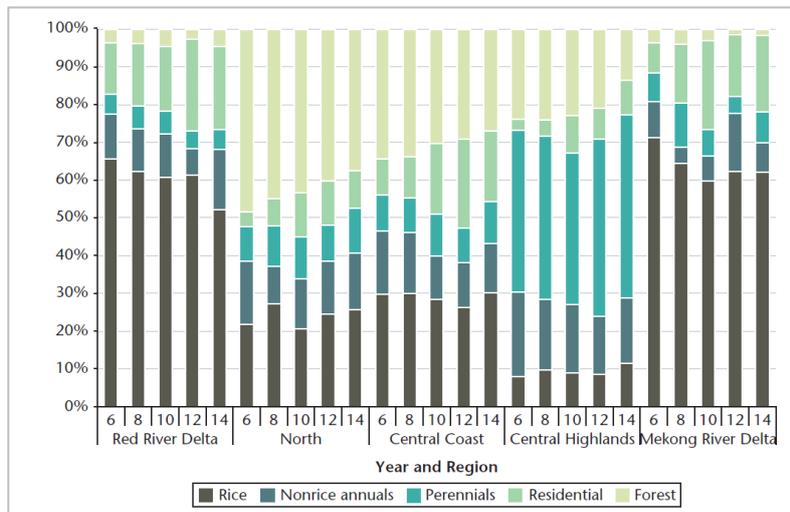


Figure 9. Land use share among regions across observation years (2006-2014) (source: Beck 2017)

Determinants of livelihood diversification in rural Viet Nam

In the context of rural areas, livelihood diversification is reflected through the participation of rural households in non-farm sources of living. Classification into farm and non-farm is based on sector of activities. Adapted from Barrett et al. (2001), Ellis (1998), Haggblade et al. (2010), and Losch et al. (2012), Aloba Losion (2017) defined non-farm or non-agricultural activities as “all income-generating activities other than the production of primary agricultural commodities. Examples include mining, manufacturing, utilities, construction, commerce, transport, government services, among others. They also include agro-processing, transport or trading of unprocessed crop, livestock, forest and fish products”. On the other hand, farm or agricultural activities are “production of unprocessed crops, livestock, forest, or fish products from natural resources. They also include farm wage labor, sale of farm output and consumption-in-kind of own farm output.”

Table 1 presents a summary of determinants and impacts of participation in non-farm activities to the income of rural households in Viet Nam, compiled from the existing literatures. Most existing studies have tended to use longitudinal VHLSS and VAHRS data to assess household participation in non-farm among regions and across time, and have included all eco-regions in the country. Other studies that focused on a particular eco-region conducted their own household surveys.

Household participation in non-farm activities was determined by various factors both at household and commune level. The former includes the household demographics, such as household composition, family size, number of dependent household members, and the age of the household head. Other variables included human capital, such as age and level of education; land capital in terms of land holding; financial capital such as level of saving; and social capital such as ethnicity and gender. The latter particularly relates to the presence of supporting infrastructure that determines the level of access to centers of economic activities such as market and urban areas; as well as the presence of supporting information networks including

access to trainings. Two studies reported the presence of shocks, either socio-economic or environmental, as determining non-farm adoptions as well (Newman and Kinghan 2015, Tran 2015).

Table 1 Determinants of participation and impact of non-farm activities on rural family's income in Viet Nam

Site	Determinant*	Impact to family income	Impact on farm	Source of data	Authors#
Viet Nam	Education, physical assets, credit accessibility, social capital	Increase in income	N/A**	VHLSS 2010	Tran and Nguyen (2017)
Ha Tinh, Thua Thien-Hue, Dak Lak province	Education, family contacts, urban proximity, human capital (good health, age), social capital (gender, working experience)	Higher incomes and often include more insurance	N/A	Household survey 2007, 2008, 2010	Brunjes and Diez (2016)
Viet Nam	Education, household composition, landholding, ethnicity, age of household head	Higher per capita consumption, higher in skilled employment (e.g. sales, professionals, and clerks) than unskilled/manual positions	N/A	VHLSS 2002, 2004, 2006	Imai et al. (2015)
Viet Nam	Income shocks (related to natural and economic condition), ethnicity, family size	Compared to household with agriculture only, 22% higher in consumption per capita in fully diversified households, 13% in those engaging in agriculture and enterprise activities, 12% in those participating in agriculture and waged employment	N/A	VARHS 2008, 2010, 2012, 2014	Newman and Kinghan (2015)
Northwest	Education, family size, age of household head, landholding, availability of local enterprises or trade, villages, infrastructure,	Higher monthly income per capita by 4.6 USD	N/A	Northern Mountains Baseline Survey (NMBS) 2010	Tran (2015)

	presence of shocks				
Viet Nam	Non-farm working hours, family size	Reduced poverty by 7–12%, increased household expenditure by up to 14%	Reduced hours for farm work, but does not affect agricultural income when household has surplus labor	VHLSS 2002, 2004, 2006, 2008	Hoang et al. (2014)
Mekong River Delta, Red River Delta	Education in Mekong River Delta, and income in earlier year in Red River Delta	Decreasing share of rice income due to increasing importance of other income sources to family income	N/A	Household survey 1999, 2002, 2005	Jirstrom et al. (2014)
South Central Coast	Age, gender, and ethnicity of household head, number of dependents, infrastructure	A slight increase in income share from salary and wage	N/A	VHLSS 2004, 2006, 2008	Ong et al. (2014)
Mekong Delta	Education, amount of savings, work experience, family relations/ inheritance are key factors in establishing a non-farm enterprise	Better income through three types of household small and medium enterprise (SME): informal enterprises in the service sector, formal enterprises in the trade sector, formal enterprises in the manufacturing sector	N/A	Questionnaire in 2012-13	Benedikter et al. (2013)
Viet Nam	Gender of household head, education	Compared to households with only agriculture, 20% or higher in per capita consumption in households with highly diversified non-farm, nearly 17% in those participating in both agriculture and enterprise, 8% in those combining agricultural and wage	N/A	VARHS 2008, 2010, 2012	Luu et al. (2013)
North Central Coast	Number of dependents, education, initial	Better-off households obtained higher	N/A	Household survey 2004, 2007-08	Nguyen and Lebailly (2011)

	financial capital, access to market and trainings	family income from manufacturing, trade, services; poor households from wage labors			
Viet Nam	Gender, ethnicity, education, landholding, infrastructure	8.6% - 31% in non-farm only and 5.3% - 13.5% in diversified, compared to farm only	N/A	VLSS 1992-93, 1997-98; VHLSS 2002, 2004, 2006	Pham et al. (2010)
Red River Delta	Access to markets, proximity to urban center, infrastructure (e.g. road and transport system), communication network and technology	Higher and contribute to investment in agricultural sector	Non-farm income used to diversify agriculture with cash crops	Household survey 2003	Hoang et al. (2005)

*of the participation and extent in non-farm activities, **not available, #ordered from the most recent publication year

4.5 Migration and rural labor force

According to Harris and Todaro (1970), the main motivation for individuals to migrate is the potential of a higher income that they can derive when they arrive at their destination. Phan and Coxhead (2010) also showed that migrants generally move from low-income to high-income provinces. Work by Stark (1991) reported other factors than income differentials, namely income uncertainty or relative deprivation. Nguyen et al. (2015) and Groger and Zylberberg (2016) found a link between migration and socio-economic or environmental shocks. These authors provided evidence that migration can also be part of risk-coping mechanism. Similarly, recent theory of migration patterns tends to relate migration with a risk-spreading strategy, whereby households disperse their economic risk by allocating one or more family members to migrate to earn income from another labor market (Narciso 2017).

Along with the industrial development of urban areas that provides more employment opportunities, Viet Nam has experienced an impressive domestic migration and urbanization rate over the past decades. Using the VAHRS data, Narciso (2017) reported that Ha Noi and Ho Chi Minh City have been two main destinations for rural migrants. More specifically, in 2012, about 26.55% and 16.51% of migrants selected the two cities respectively. The figures were even higher in 2014 namely 26.99% and 20.55% respectively, with Da Nang as another big city in Viet Nam that became the third most common destination for migrants, with a share of 7.52%. The VAHRS data further classified migrants as those who had made temporary or permanent settle in their destination. In the former, the main motivations related to education and work, while in the latter they related to family reunification or to work. Some individuals migrated due to military service.

In terms of the type of work in the destination place, due to lack of skill and education level the majority of migrants from rural areas were found to have taken manual jobs as unskilled or skilled workers (Narciso 2017). Nonetheless, there was a recorded decrease in the percentage of

migrants involved in unskilled labor when comparing in the years 2012 and 2014 (Table 2). On the other hand, the percentage of migrants employed in top or mid-level occupations increased in 2014, compared to 2012. Top-level occupations are those assumed by professionals whereas mid-level by technician and associate professionals in different fields such as science and engineering, health, teaching, business and administration, information and communication, legal, social and cultural. In 2014, although most of the migrants (namely 26.55%) were still employed as unskilled workers, there was roughly a 15% increase in number of migrants that could obtain mid-level occupations in all fields. This may indicate an increase in skills or educational levels of rural migrants over time.

The increasing migration rate as the country rapidly industrializes and modernizes is still generally characterized by low-income jobs that offer poor benefits and unstable contract. Furthermore, the migrants are isolated from the traditional family support systems. These conditions and the global economic crisis make migrants are particularly vulnerable (Taylor 2011). The government needs to tackle the migrant worker issues by supporting a dynamic labor source and providing protection, instead of merely managing migration flows and emerging social problems. Providing a department which is responsible for migrant social policy is deemed as an urgency (Taylor 2011).

Table 2 Different occupations of migrants in Viet Nam in 2012 and 2014 (source: Narciso 2017)

	2012 (%)	2014 (%)
Army	3.96	1.74
Leaders in all fields and levels	7.25	2.48
Top-level occupations in all fields	7.25	9.93
Mid-level occupations in all fields	5.71	20.60
Staff (elementary occupations, white-collar technical personnel)	9.45	4.96
Skilled workers in personal services, security protection, and sales	2.86	5.96
Skilled workers in agriculture, forestry, and aquaculture	1.54	0.25
Skilled handicraftsmen and other related skilled manual workers	19.78	17.87
Assemblers and machine operators	7.69	8.93
Unskilled workers	33.41	26.55
Communal officials who are not public servants	0.88	0.74

In many agricultural-based provinces, due to industrial development in rural areas such as the establishment of industrial parks, the area of arable lands has declined, and many households became landless (Hoang 2009). This situation and lack of interest in agriculture has led to a lot of productive rural laborers migrating from the countryside in pursuit of education, better career, and income (VUSTA 2011). Although agriculture is still one of the main livelihood options and income source for many households in rural Viet Nam, native laborers foresee this sector as unable to provide new employment compared to the manufacturing and service sectors that are highly developed in urban areas. Furthermore, agriculture is also considered as low-income source and economically high-risk due to uncertainty in production and volatility of product price (VUSTA 2011). All these factors have led to a rural workforce with low interests in agriculture, most noticeably amongst young individuals.

Using the VAHRS data, Narciso (2017) showed that 58.96% of working migrants in 2012 were men, with the figure being slightly lower in 2014 (57.29%). When considering the case of non-working migrants, the percentages were much lower namely 51.05% and 52.78% for the two years respectively. The average age of a working migrants was 25.39 years old in 2012 and 24.50 in 2014. When including all types of migrants, the average was lower, namely 22.45 and

22.62 years old in the two years respectively. The data indicates that working migrants often need to spend longer time in education in their original location before migrating for work, as their age ranged mostly between 20-30 years old. The high migration rate has not only impacted agricultural production but will become a serious constraint in achieving rural development targets. In response to this, many provinces in the country have made some efforts to maintain local workers whilst persuading migrants to return to their hometown (VUSTA 2011).

The 2007 Asian Development Bank (ADB) report on rural labor market and migration provided four policy recommendations to keep local labor in agriculture whilst providing them the opportunity for migration. These recommendations included: i) developing rural labor markets to enable households to adjust to the surplus or shortage of labor, ii) reforming the land-exchange market to make the land use rights more flexible that can lead to increased labor productivity in the agricultural sector, iii) enhancing investment for employment creation in both rural and urban areas, and v) developing information networks to support migrants. UNDP (2010) also provided some recommendations to make the agricultural sector more attractive to rural laborers which include: i) enhancing incentives in resource allocation within the agricultural economy and removing institutional obstacles to minimize input costs and optimize the profitability from post-harvest processing and trade, ii) enhancing public investments in research and development, rural infrastructure, and access to credit through partnerships with the private sector, and iii) ensuring a flexibility for rural labor and other resources to move in and out of the rural economy in response to other attractive opportunities.

4.6 Access to health and education service

Thanks to the Đổi Mới reforms that allow private sectors to be involved in providing some public services, the Government of Viet Nam has modified its mode of public service provision (CIEM 2006). In the health sector, the Ministry of Health Care was formerly the State's only agent with a role in providing health care services and medicine. Eventually, doctors and nurses who worked in the public hospitals could open their own private facilities¹⁶. The biggest health care centers were still managed by the State as public hospitals, while most private health cares operated in urban areas to provide more specialized treatment. The reforms have also led towards remarkable growth in private pharmacies. Nowadays, Viet Nam has approximately 13,440 public healthcare establishments, 75 sanatoriums and more than 1,000 general and antenatal clinics. According to GSO, numbers of health staff has also been increasing in the past decade with about 61.4 to 74.4 thousand doctors in 2000 and 2017 respectively, and 82.3 and 107.6 nurses over the two years respectively. Viet Nam is also one of the few vaccine producers in the world and has obtained a certification from the World Health Organization (WHO) as a country with a fully-equipped national regulatory authority (NRA) that will ensure the safety and efficacy of vaccines produced and used¹⁷.

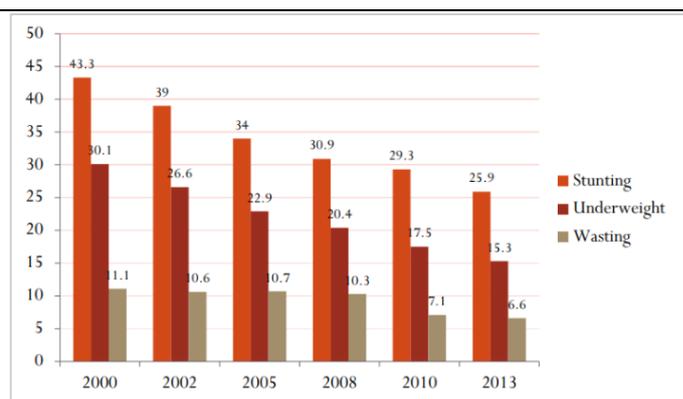
The reform and improvement in the health sector, along with the increasing financial capacity of households to access different health services have resulted in a drop in the mortality rate of children under one year old; from 44.4 per 1,000 children in 1990 to 15.2 per 1,000 children in 2014. For those under five years old, the mortality rate had also declined more than half namely

¹⁶ <https://soapboxie.com/social-issues/A-Study-of-Vietnams-Healthcare-System>

¹⁷ <https://en.vietnamplus.vn/public-healthcare-goes-long-way-after-doi-moi/87499.vnp>

from 58 per 1,000 children in 1990 to 22.9 per 1,000 children in 2014¹⁸. In a similar pattern, the maternal death rate had dropped by two-thirds from 233 per 100,000 delivery in 1990 to 60 per 100,000 delivery in 2014. In terms of issues pertaining to stunting, underweight and wasting of people, according to UNICEF Viet Nam and GSO there has been a declining trend from 2000 to 2011¹⁹. During the same time period, the stunting children under five years old decreased by half from 46 percent in 2000 to 23 percent in 2011. The figures were 27% and 12% for the case of underweight children over the two years respectively, with 6% and 4% for the case of wasting respectively. Similarly, the data from Viet Nam Nutrition Surveillance Survey in 2013 as reported in Huynh (2014) indicated a steady decline in the case of stunting, underweight, and wasting of children below five years old from 2000 to 2013 (Fig. 14a). In 2013, the percentage of stunting was 25.9%, 15.3% for underweight, and 6.6% for wasting.

There have been disparities in terms of nutrition status among eco-regions. Stunting has been reported amongst 41% of poor communities compared to 6% in non-poor, with most of the poor class belonging to ethnic minorities in the uplands. In addition, roughly 1 in 3 children in the northern mountain areas and the CH region, and 41% of children below five years old that belong to ethnic minority's family, were stunted²⁰. Amongst these, 14% were reported to be in severe condition. Post-natal factors have been recognized as determining factors of stunting in the country related to the households' pattern in the practices of infant and young children feeding. Regional and ethnic variation are not as evident for levels of wasting as they are stunting. Based on the 2013 Viet Nam Nutrition Surveillance, Huynh (2014) has mapped malnutrition and clearly presents the dissimilarities among eco-regions, related to those that are underweight, stunted, and wasting (Fig. 14b). The World Bank (2013) also highlighted that, over the past two decades, there has been substantial progress made by the country in reducing malnutrition among children and among the population. However, the rates of chronic malnutrition remain high (>30 percent) among children in the uplands dominated by ethnic minority groups. Potential solutions to the current challenges pertaining to nutrition could include efforts that focus not only on producing more rice, but on multi-sectoral approaches to overcome poverty, improve maternal health, improve water and sanitation, and support the development of 'nutrition-sensitive' agricultures (World Bank 2013).

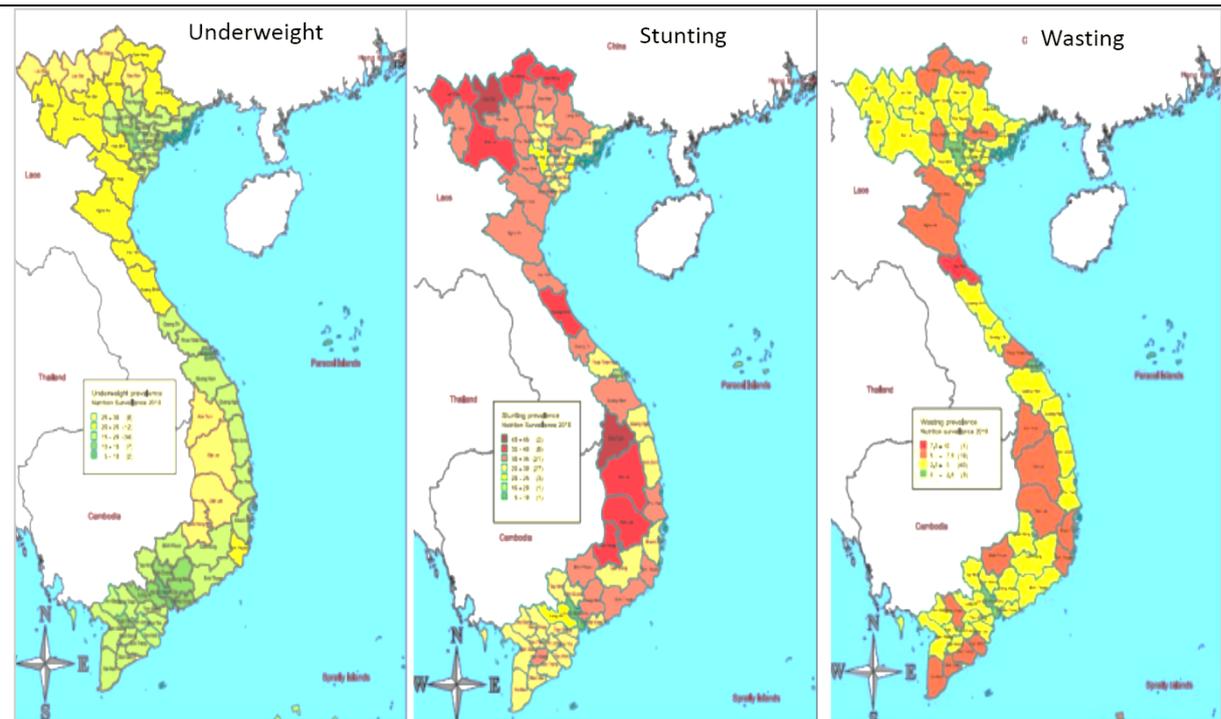


(a)

¹⁸ <https://en.vietnamplus.vn/public-healthcare-goes-long-way-after-doi-moi/87499.vnp>

¹⁹ <https://www.fantaproject.org/sites/default/files/download/Vietnam-Nutrition-Profile-Apr2014.pdf>

²⁰ <https://www.fantaproject.org/sites/default/files/download/Vietnam-Nutrition-Profile-Apr2014.pdf>



(b)

Figure 10 (a) The case of stunting, underweight, and wasting from 2000 to 2013 in Viet Nam, and (b) dissimilarities among provinces in 2013 (Source: Nutrition Surveillance – National Institute of Nutrition 2013 as presented in Huynh 2014)

Related to the education sector, the Seventh Congress of the Communist Party of Viet Nam in 1991, declared that education should become “the first national priority...the driving force and the basic condition in ensuring the realization of the socio-economic objectives” (quoted in Que 2009 and Hayden 2005). The Government of Viet Nam has been pursuing the establishment of a higher education system. The collapse of the socialist systems in the Eastern Europe and in the Soviet Union in the early 1990s led to a massive flow of documents, books, and other materials from the West to Viet Nam, and English was started to be studied at schools. Meanwhile, the global economy increased the flow of international investors and visitors into the country, including a flow of exchanging students and scholars. This has increased a demand for higher education and skill, to prepare the young Vietnamese generation for facing multi-sector challenges in the modern world (Que 2009).

Viet Nam has been increasing the expenditure on education over the years. The share of GDP expenditure for education increased from 3.57 percent in 2000 to 5.18 percent in 2006 and reached 5.7 percent in 2013²¹. The percentage of expenditure for education in the government budget has also been increasing and became the largest with 20 percent of total government expenditure in 2015. According to GSO, the number of schools have steadily increased; 12,678 in 2010 to 15,241 in 2017. This was accompanied by the increase in the number of students from about 3 million in 2010 to 4.6 million in 2017. The percentage of children aged five or above that have never attended school has sharply declined over the last three decades (1989-2016). In

²¹ <https://wenr.wes.org/2017/11/education-in-vietnam>

1989, this figure was 18% and dropped to 3.9% in 2016. The percentage of children that have attended school increased from 58.4% in 1989 to 73.9% in 2016. The data also showed however that in 2016, the percentage of female children aged 10 years old or above who have never attended school was higher than male children.

In relation to disparities between rural and urban areas, and among eco-regions, the 2017 data from GSO highlights a significant difference in the access to higher education, such as upper secondary education and undergraduate education. In 2016, the rate of school attendance for upper secondary education was 79.1% in urban areas and 64.7% in rural areas. The difference was higher in terms of undergraduate education- with 43.6% in urban and 16.1% in rural areas. Among the eco-regions, the highest rate of school attendance was found in RRD for all education levels, while the northern mountainous regions of CH and MRD had much lower school attendance related to higher education levels- especially for upper secondary and undergraduate education. For example, in the latter the rate was 6.3% and 6.5% in the CH and northern mountainous regions respectively, with 37.8% in RRD and 34.7% in SE region. In addition to disparity among regions and between rural and urban areas, the government also needs to pay more attention in the access of health and education service by migrant people, along with the increasing urbanization rate. For example, the statistic from the Ministry of Health of Viet Nam shows that only about 30% of private companies in the country which cover health insurance fees for their migrant workers, and 90 percent of migrants deprive of any social insurance (Taylor 2011).

5. Challenges and strategies to achieve SDG2 targets in the next decade

5.1 Targets of SDG 2

The SDG2 aims at ending all forms of hunger and malnutrition especially in children and vulnerable communities by 2030, and make sure they have access to sufficient and nutritious food all year round²². In other words, to enable all people to become food secure. Several ways to achieve this include the development of sustainable agriculture, improving the livelihoods and capacities of smallholder farmers, and through allowing rural households from different socio-economic contexts to have equal access to land, technology, and markets. International cooperation for infrastructure development and advancements in technology to improve agricultural productivity and quality are also deemed critical enabling factors.

The efforts should start by ending hunger, namely by ensuring the population have sufficient staple foods before proceeding to address the deeper aspects of food security, such as having nutritious foods, food production that occurs through economically and environmentally sustainable agricultural methods, and a sustainable management of natural resources and genetic resources²³. The SDG2 mainly targets subsistence family farmers in rural areas who are usually most marginalized and most vulnerable to socio-economic and environmental shocks due to the changing climate. Their income largely relies on agriculture and natural resource

²² <https://www.un.org/sustainabledevelopment/hunger/>

²³ <http://www.fao.org/sustainable-development-goals/news/detail-news/en/c/424259/>

extraction, but most often their food production and income are insufficient for avoiding hunger, nor for providing them with nutritious foods.

All 17 SDGs are indeed very much interconnected, especially SDG1 and SDG2, to end poverty and to end hunger and malnutrition respectively. At the global level, almost 80 percent of the poor communities live in rural areas and depend directly or indirectly on agriculture, fisheries or forestry as their main source of income and food. Due to this, it's important to achieve agricultural growth in this group of low-income and agrarian economies to reduce hunger as well as poverty. Globally, there is enough food supply to feed the total world population, but the main cause of hunger is not the lack of food supply, but that poor communities cannot afford to buy enough food²⁴. Efforts in ending rural poverty therefore represent a direct need to fight hunger.

Furthermore, poverty constitutes a critical underlying cause, as well as consequence, of food insecurity, hunger, and malnutrition (FAO, IFAD, UNICEF, WFP, WHO 2017). They are all deeply interrelated to one other (FAO 2008). Other factors than poverty do exist that cause hunger and malnutrition- such as climate change, extreme weather events like drought, the outbreak of pest and diseases for crops or livestock, rapid population growth, corruption and political instability, military conflicts and so on. These constitute larger level factors that affect the community as a whole. Poverty is one important factor, although inadequate and improper nutrition itself is an underlying cause of malnutrition (FAO 2008).

5.2 Strategies in the Viet Nam National Action Plan to 2030

In May 2017, the Government of Viet Nam enacted the “National Action Plan (NAP) for the Implementation of the 2030 Sustainable Development Agenda” under the Prime Minister’s Decision No 622/QD-TTg. The NAP was built upon the 17 goals and 169 targets of the United Nation’s 2030 Agenda for SDGs adapted to practical conditions, capacity and development priorities of Viet Nam, to identify appropriate goals and targets. It also considered other national strategies such as the Strategic Orientation for Sustainable Development in Viet Nam (Viet Nam Agenda 21), the Viet Nam Sustainable Development Strategy for the period 2011-2020, the Socio-Economic Development Strategy 2011-2020, the Viet Nam National Green Growth Strategy 2011-2020, and the National Strategy on Climate Change. Furthermore, its formulation involved various stakeholders to review and link the 17 SDGs to the current national strategies and policies, in a participatory manner. These included either two-directional or both bottom-up and top-down approaches in Action Plan building, through a series of consultation workshops to scrutinize the review results and draft of Action Plan.

The details of action plans related to SDG1 and SDG2, and division of responsibilities for implementation specifying the lead and coordinating agencies, are described in Annex 1 and 2 respectively. Related to SDG1, the Government of Viet Nam sets four targets; i) reducing poverty rate, ii) implement appropriate social protection systems, iii) ensuring all households to have equal rights to access economic resources and basic services, and v) enhance the resilience of the poor and the vulnerable to socio-economic and environmental shocks. These four targets are in line with the SDG1 targets with target 1 in the NAP merging with the first two targets of SDG1. The priority of all these programs and targets are socio-economically and environmentally vulnerable groups, ethnic minorities, people with disabilities, and women and children. This indicates the Government’s awareness of disparities in economic development and poverty

²⁴ <http://www.fao.org/sustainable-development-goals/news/detail-news/en/c/424259/>

reduction among different socio-economic groups and geographical contexts in the country. The vulnerable groups in Viet Nam are those that are socio-economically vulnerable, such as the poor and ethnic minorities in isolated regions, e.g., in the northern uplands, and those who are vulnerable to environmental shocks such as the poor rural households in the two Central Coast regions affected annually by a number of extreme weather events, e.g., typhoons and flash flooding.

The NAP also reflects the Vietnamese Government's recognition of the need for effective implementation of existing policies for poverty reduction and to encourage poorer households and disadvantaged people to become proactive and participate in the poverty reduction' programs. The latter is important since some groups of poor households and ethnic minorities in the upland regions prefer to keep their status as poor individuals or households in order to continuously receive various subsidies from the Government²⁵. Some ethnic groups in mountainous areas also have a stereotype as being 'lazy' people²⁶. Other ways to reduce poverty, as indicated in the NAP, include improvements to infrastructure in poor districts/communes especially basic infrastructure such as roads, schools, medical stations, irrigation systems and clean water supply; develop a database for monitoring multi-dimensional poverty, improve the social protection system, mainstream the need of equal rights for all people to access economic resources and basic services through mass media and social organizations, and enhance the resilience of the poor and vulnerable communities to climate change and variability.

Related to SDG2, the Government sets five targets which are similar to the International SDG2 targets (Annex 2) namely eliminate hunger and ensure access for all people to nutritious and sufficient food throughout the year, reduce all forms of malnutrition, increase agricultural activity and income of agricultural laborers, develop sustainable agricultural systems that are also resilient to climate change and variability, and maintain genetic diversity and resources. Among the targeted groups, the Government prioritizes the poor and vulnerable communities, ethnic minorities as well as the elderly and infants, children under five years old, adolescent girls, pregnant women, and lactating mothers. This indicates the Government's awareness to the need to address different socio-economic groups and geographical contexts when addressing hunger and malnutrition in the country.

To achieve the targets, the Government emphasizes the need to more effectively implement existing policies and strategies that aim to reduce hunger and malnutrition, including the National Food Safety Strategy for 2011-2020, vision to 2030 which encourages private sectors to invest in the production of food products that support nutrition sufficiency in targeted groups (i.e. the poor and vulnerable communities etc.); diversify the production, processing, and utilization of locally available foods; develop nutrient-sensitive home garden systems; further support scientific research on nutrition and food; disseminate new varieties of crops with improved nutritional content; mainstream the need of nutrition sufficiency and successful community-based nutrition models through the educational system, public health systems and mass media, and consolidate nutrition surveillance systems at the community and health facility level.

Developing sustainable agriculture is also regarded as a way to reduce hunger and malnutrition and is expected to provide higher productivity rates, higher income to the involved laborers, and

²⁵ <https://english.vietnamnet.vn/fms/special-reports/80850/i-want-to-be-poor.html>

²⁶ <https://english.vietnamnet.vn/fms/special-reports/80846/being-lazy--mountainous-people-cannot-escape-poverty.html>

support the maintenance of ecosystem services. Some related strategies to achieve sustainability include the restructuring of agricultural sector to increase added-value, revise and amend policies that aim to enhance agricultural production, improve water and nutrient efficiency, introduce varieties that can provide higher production and more resilient to the impact of climate change and variability, identify production areas that are disease-free and appropriate for high-technology application, increase investment in rural infrastructure, and support agricultural research. Furthermore, along with increasing uncertainty in the condition of the climate, the NAP also identifies the need to build capacity in forecasting and for providing early warnings to proactively prevent and mitigate the impact of natural disasters to cropping systems.

For a successful implementation of the Plan, the Ministry of Planning and Investment has identified main challenges which include the current prevailing predominance of low-value added and labor-intensive activities in different sectors; a limited technology transfer; major social and demographic changes such as increasing migration, urbanization, ageing population and a growing middle class; a high incidence of poverty especially in remote and mountainous areas dominated by ethnic minorities; limited international aids that will create difficulties in financing targeted social and economic activities; increasing intensity of climate change; degrading natural resources; and a weak monitoring, reporting and verification system²⁷.

The Ministry also provided some recommendations to overcome the challenges which include those relate to the statistical capacity building such as the need of improved monitoring system and integrated policy analysis; to financial capacity such as effective tax policies and effective administration and public private partnerships; and to technology such as higher investment in science and high-tech innovation along with more intensive collaboration among research institutions, universities, private sector, governments, non-governmental organizations, and scientists²⁸.

5.3 The World Bank's recommended strategies for agricultural sector

In the next decade, the agricultural sector in the country will face increasing demographic, economic and environmental challenges. As identified by the World Bank (2016), the country's impressive performance in agricultural production is not accompanied by resource efficiency, product quality, and sustainable rural economy. The inefficiency demands more inputs to produce more outputs with an increasing environmental cost and domestic competition for labor, land and water. Furthermore, labor cost is rising steadily and will reduce the sector's ability to compete globally for investment and market. The increasing environmental cost generates concerns from the international market on the reliability, quality, safety, and sustainability of the country's agricultural products.

The main strategies as recommended in the report by World Bank (2016) include shifting from primary production to processing along with increasing urbanization rate and population of middle class that mainly demand processed foods instead of raw products; increasing the quality and added-values of agricultural export products through advanced technology since the rapid economic growth of the country has been so far relied on massive quantity of low-quality products; diversifying quality products for better accessing market opportunities; and reducing impacts of agricultural management practices and processing to environment, for environmental

²⁷ <http://unohrlls.org/custom-content/uploads/2017/03/Vietnam.pdf>

²⁸ <http://unohrlls.org/custom-content/uploads/2017/03/Vietnam.pdf>

protection and safe products. In summary, the World Bank describes the recommended strategy as “achieving more from less” namely a greater economic welfare from resource efficiency and less environmental footprints. Furthermore, an enabling condition for the effectiveness of this strategy is a structural change in which the government provides a role mainly as ‘facilitator or enabler’ rather than ‘leader’, particularly in relation to farmer and private sector investment, productivity and market development.

5.4 Policies for strengthening rural development

Challenges in rural areas are multi-dimensional and complex, and during the past decade, several plans, policies and legal documents have been promulgated to strengthen rural development that directly or indirectly contribute to the alleviation of poverty, hunger and malnutrition. Among important ones are (Rudengren et al. 2012, World Bank 2017):

- The National Targeted Programs that represent the government’s key strategies to tackle multi-dimensional challenges of rural development and focus on ethnic minorities. These consisted of 16 Programs implemented through different ministries such as ministry of health, education, water, transport, agriculture and rural development. The implementation of the phase I (2011-2015) of these Programs faced challenges related to overlapping coordination and requirements from the different ministries, resulting in a low efficiency. To address these issues, in the phase II (2016-2020), the 16 Programs have been consolidated into two through a National Assembly Resolution No. 100 issued on November 12th, 2015.
- The New Rural Development Programs which represent the strategies for improving services and infrastructure in rural communities across all provinces in the country. The phase II (2016-2020) has four main targets namely (i) 50 percent of communes have to meet 15 out of 19 standards of New Rural Development; and each province and city under the Central Authority, have at least one district that meets all 19 criteria; (ii) No commune achieves below 5 criteria; (iii) Basic production and services such as transportation, power supply and domestic water, schools, and health centers are available in rural areas; and (iv) an increase in rural income by at least 1.8 times compared with 2015.
- The Sustainable Poverty Reduction Program which focuses on the improvement of infrastructure, livelihoods, basic services and capacity building for the 94 poorest districts and 310 communes in coastal areas in the country. The phase II (2016-2020) has four main objectives namely (i) alleviating poverty by a decrease in poverty rate by 1.5 percent per year; (b) increasing per capita income of poor households by 1.5 times by 2020; (c) leading towards a more consistent and effective implementation of poverty reduction mechanisms and policies in providing basic services for the improvement of poor people’s livelihoods; and (d) providing a higher investment in infrastructure in the poor districts, communes and villages.

There are similarities among the above policies in terms of basic programs such as providing a financial support for infrastructure, production and livelihood activities, and capacity building (World Bank 2017). However, they are different in terms of targeted groups, mechanisms for implementation, reporting requirements, and institutional responsibilities. For the phase II (2016-2020), the government has recognized the need and called for an international support including from the World Bank, in harmonizing, coordinating, and improving the efficiency of the

implementation of the New Rural Development and Sustainable Poverty Reduction Program, particularly at the local levels.

5.5 Other policies

These include national socio-economic development strategies and food security policies. The 2011-2020 socio-economic development strategies have the following vision “towards a modern and industrial-oriented country by 2020 with socio-political stability, agreement, democracy, discipline; improved physical and spiritual life of the people; maintained independence and territorial unification; improved international reputation; and stronger development in the next decade.”²⁹ The main objectives of the strategies in terms of economic development are to “strongly develop production force, building production networks, establish strong regulations of the socialist market-oriented economy, leading towards green economic development with environmental protection, improved product quality and effectiveness, fostering the transition of economic structure, implementing the economic restructuring by focusing on restructuring manufacture and service based on economic zones, increasing productivity, added-value and competitiveness of enterprises and of the whole sectors in the country.”

In Viet Nam, the food security policies have two different objectives, namely (i) to secure the supply of rice in domestic markets, and (ii) to improve income of rural households and to balance import and export (FFTC-AP 2016). To date, the country has enacted a number of food security policies, and they can be divided into three categories based on their main target, namely those for achieving (i) food availability, (ii) food accessibility and affordability, or (iii) food safety and nutrition. FFTC-AP (2016) provides a comprehensive account on the types and list of food security policies and other policies including a number of agricultural policies in Viet Nam.

5.6 Anticipating potential negative impacts of participation in non-farm activities

The need of diversifying sources of income by rural households, namely by participating in non-farm, is also mentioned in the NAP for achieving SDG1. The determinants and challenges of such participation have been well documented in the literature and include those relate to financial capital such as difficulty to access low-interest loan for non-farm investment, human or labor capital such as low education and skill, and social capital such as lack of connection to access business sector. Despite this comprehensive knowledge, the potential impacts of participation in non-farm by the rural households to their farm and other activities are not clear and call for more studies.

Among the thirteen studies reviewed (see again section 4.4), only two explicitly reported the link between participation in non-farm and farm activities. Using the VHLSS data, Hoang et al. (2014) found that the involvement in non-farm reduced the households' working hours for farm activities but did not affect their agricultural income. This was particularly the case in the households with surplus labor. Pham et al. (2005) highlighted the positive contribution from non-farm to farm income, in which farmers used non-farm income to diversify cash crops on their agricultural lands.

A more comprehensive account on the potential impacts of non-farm adoption by rural households to their farm or other activities is given by the World Agroforestry (2019) based on a

²⁹ <http://www.economica.vn/>

focus group discussion with farmers in Quang Nam province, South Central Coast of Viet Nam. Table 3 provides a summary of farmers' responses and all indicate potential negative impacts either at communal- or household-level. The impacts relate to different issues such as land, labor, social, or environmental issues.

Table 3 Potential impacts of non-farm adoption according to farmers

No*	Potential impacts	Level	Category of issue	Solution
1	Labor shortage for farm activities	Household	Labor	Hire or exchange labor for farm activities, conversion of annual to perennial crops, intercropping annual crops with trees, or develop forest plantation that is not labor-intensive and to reduce risk of plot exploitation by others
2	Lack of time to take care family (including parents) that can affect harmony in the family, and less participation in the communal works	Household, communal	Labor	Need to allocate family's labor wisely and balanced among different activities, providing opportunities to access existing non-farm jobs which are located closer to settlement, or establishing new non-farm opportunities within the commune such as developing tourism
3	For households without Red Book, participation in non-farm will bring risk of losing agricultural land because of lack of time to manage the agricultural land	Communal	Land	The local government needs to issue the Red Book for those households
4	Factory establishment by big companies	Communal	Land	NA**

	makes households losing their land			
5	Tourism activities lead to degrading environmental qualities such as air, water and land pollution, and will affect local people's health	Communal	Environment	Need to increase awareness of all stakeholders involved in the tourism service on environmental protection, and establish waste management to reduce air, water and land pollution
6	Degrading natural resources due to tourism activities e.g. firewood for barbeque service, oysters for special menu in the restaurant	Communal	Environment	NA
7	Increasing risk of forest fire e.g. due to tourism activities in the forest	Communal	Environment	NA
8	People working far from the village will bring a bad habit to the village	Communal	Social	Need to increase people's awareness on local custom as village's identity
9	A gradual degradation of native tradition and skill in the village. Young people went away for economic reason without traditional attire, have no time and willingness to learn traditional songs and dancing, as well as indigenous skills and custom such as knitting and worshipping the ancestors	Communal	Social	Provide regulation that obliges these young people to return to hometown regularly, to remind and preserve their village custom and identify, and organize monthly cultural events in the village
10	A lot of foreign people as tourists affect security in the village	Communal	Social	NA
11	Conflicts between tourism managers and	Communal	Social	NA

local people when
activities were not well
organized

* Does not indicate ranking/degree of importance, ** No solution provided by the group

The focus group discussion also involved a group of authorities. Their concerns indicate potential negative impacts at commune level and relate to different issues including financial (data not shown). Among categories of issues, more concerns relate to social issues in the commune. In the literature, two potential negative impacts of non-farm adoption were discussed, namely 'feminized-agriculture' and increasing social tension due to a widening economic gap between poor and rich households. The former relates to the labor issues indicated by the farmers and authorities. Among social issues mentioned in the focus group discussion, none relates to an increasing social tension due to a widening economic gap.

The farmers could identify expected solutions for most potential impacts (Table 3). For example, related to labor shortage for farm activities, in addition to exchange or hire external labor and conversion of annual to perennial crops to reduce time for management practice, they highlighted the importance of Red Book (certificate of land-use right) ownership. Without the certificate, there is a high risk that their lands will be taken over by others while they are occupied by non-farm activities.

5.7 Participating in the Zero Hunger Challenge

The Zero Hunger Challenge was launched by the United Nations' Secretary-General at the Rio+20 Conference on Sustainable Development in 2012. This global initiative calls all countries to collaborate in eradicating global hunger and poverty for achieving sustainable development, and focuses on five main targets namely ensuring access to adequate food all year round, eliminating incidence of stunted children, creating sustainable food systems, increasing smallholder productivity and income, and no waste of food.

To achieve this goal in Viet Nam, the United Nations' agencies coordinated by the United Nations Resident Coordinator and with technical support from FAO, have provided assistance to implement and accelerate the process and to formulate a NAP as more concrete strategies to achieve the national zero hunger target³⁰. The NAP will be also integrated into the country's Socio-Economic Development Plan 2016-2020, especially in the section specifying programs for poverty reduction and new rural development. The main goal of the NAP is to ensure sufficient and healthy foods for all citizens in the country by 2025, while committing on zero hunger set in SDG2 by 2030. The efforts in formulating the 2016-2025 NAP by the Vietnamese government are still on going, expectedly promulgated in 2018, and it also focused on five targets as those set by the global Zero Hunger Challenge call.

³⁰ <http://www.fao.org/vietnam/news/detail-events/en/c/274659/>

5.8 Promoting sustainable agricultural practice in uplands

As complement to strategies formulated in the “NAP for the Implementation of the 2030 Sustainable Development Agenda”, related to establishing and promoting sustainable smallholder farming systems as mentioned in the section for SDG1 and SDG2, especially in upland regions, enhancing local knowledge and skill on sustainable farming system through an effective extension service and promoting more sustainable agriculture models especially in uplands are also necessary. These are particularly relevant for poor communities and ethnic minorities that are inhabitants of more isolated regions and usually endowed with high illiteracy.

Improving the effectiveness of agricultural extension service

The agricultural extension system in Viet Nam has been criticized for its top-down and ‘one size fits all’ approach, and its services which mainly target higher-income farmers, neglecting grass-root levels especially those in more remote regions (Beckman 2001, Pham et al. 2003, Sekhar 2007, GFRAS 2012). For example, a number of studies in the Northern mountainous regions of the country which characterized by challenging topography and home of ethnic minorities, reported that local people considered TV programs, neighbors, and extension services from non-government organization (NGO) projects as more valued sources of agricultural information than government extension workers (Dinh 2005, Mai et al. 2005; de Jong et al. 2006, Catacutan and Naz 2015, Hoang et al. 2017).

Many extension trainers were also found to have limited agricultural background and education, lack of access to extension training course, and these have led to ineffective communication with farmers that come from diverse backgrounds and education levels, which need practical advices for managing their agricultural lands (Christoplos 1996, Vo 2012). Moreover, the top-down approach has largely neglected local knowledge and preference for agricultural system and crop selection as well as farmers’ available resources and capacity to adopt the recommended farming systems, and to understand extension materials and technologies. Due to this, extension subjects and materials developed by the government agencies become less attractive to farmers since they provide little concern on local biophysical, socio-economic and climatic conditions. The extension system has just recently become more responsive to local needs because farmers have more freedom within the decision-making process (Beckman 2001, Janssen 2004).

Nguyen (2012) identified some ways to improve the effectiveness of extension system in Viet Nam. These include the need of extension service to reach more remote areas usually dominated by poor communities and ethnic minorities, adopting bottom-up or local-driven approach to build more ‘participatory’ extension system, strengthen linkage between research and extension system to intensify technology transfer and provision of extension materials, and enhance the communication skill of extension staffs to effectively deliver knowledge and technology to farmers especially to those belong to ethnic minority groups.

Introducing more sustainable farming practices in uplands

In terms of area, the uplands in Viet Nam constitute about three-quarters of inland territory, and regarding population, 30% of the country’s population with majority from ethnic minorities. The regions are also generally associated with high poverty due to low income from agricultural activities as the main source of livelihoods (An 2006). The common annual crops cultivated in the uplands include cassava, maize, and upland rice.

A lot of smallholders in uplands still adopt unsustainable cultivation practices such as monoculture with annual crops on sloping lands, burning of crop residue, poor fertility management as well as poor pest and disease control. These result in low and unstable crop productivity, with serious consequence to soil and natural resource degradation and environmental hazards (Espaldon et al. 2003, Valentin et al. 2008, Schmitter et al. 2010). The uncertainty in crop production is augmented by climate change and variability notably erratic rainfall patterns and more frequent extreme weather events such as drought and flash flooding.

Some more sustainable farming techniques in uplands have been introduced in the literature and tested in the field with promising economic return and ecological benefits. For example, Tacio (1993) reported diverse potential benefits that smallholder farmers can derive by adopting a type of agroforestry scheme called Sloping Agricultural Land Technology (SALT). The scheme could help reducing soil erosion and in the same time increased crop productivity. Basically, it integrates nitrogen-fixing trees into the farming systems as soil binder, soil fertility enhancer, and in the same time sources of livestock feeds. The agroforestry system as SALT combines annual and perennial crops, with diversified food crops grown in the areas between the hedgerows. At a larger scale, SALT can help to restore moderately degraded hilly lands to areas suitable for farming system.

In the mountainous areas of NW region of Viet Nam, Hoang et al. (2017) found that the dominant farming system was monoculture of staple crops particularly maize and rice on slopes, and these unsustainable systems provided low economic returns. Due to a massive adoption of these practices, environmental issues such as severe soil erosion, land degradation, and water shortages were prevalent in the region. Tree-based farming systems were found to be rarely existed and mostly a result of spontaneous adoption by farmers. From exploration on local perspective, field observation and literature review, the authors recommended agroforestry system with contour planting for example by integrating timber or fruit trees, annual crops, and strips of grass for fodder, as more sustainable farming system for the region.

Roshetko et al. (2017) declared that establishing natural vegetative strips (NVS) with annual crops, perennial plants such as trees, and/or strips of fodder grass along contour lines is a simple and low-cost method with proven conservation measure and has direct environmental and economic benefits. NVS on sloping lands can be introduced by cultivating grasses or other vegetation in 50 cm-wide strips spaced at 8–10 m. The technique is the basis of 'conservation agriculture with trees' or agroforestry. The authors also provide five principles in integrating trees into farming systems on sloping lands namely minimal soil disturbance, diverse crop species, continuous ground cover, judicious integration of trees, and integrated water, nutrient and pest management.

Furthermore, the authors also emphasized that depending on selected species and management, integrating trees into farming system can potentially bring the following benefits: more permanent soil cover; increased nutrient supply through nitrogen fixation and improved nutrient cycling; better control of insect pests and weeds; improved soil structure and water infiltration; greater direct production of food, fodder, fuel, fiber and income from products of the intercropped trees; higher carbon storage both above- and belowground; enriched soil organic matter; and more effective conservation of above- and belowground biodiversity. La et al. (2016) provide guidance for developing agroforestry systems with NVS of fodder grass, annual crops, and rows of trees for sloping lands, especially for the case of NW region of Viet Nam.

6. Conclusions and Recommendations

Based on the literature review provided in this document, some conclusions related to the country's efforts and progress in eradicating poverty, hunger and malnutrition; and recommendations to move further towards a more sustainable development in the next decade are given below.

Main achievements

- In the past three decades, the majority of Asian countries especially in Southeast Asia have been struggling to advance their economy. Among others, Viet Nam with its rural transformation and economic development has been regarded as particularly impressive, thanks to an eager yet careful transformation from a centrally-planned economy into a socialist-market economy.
- Since the mid-1980s with the promulgation of economic reforms known as Đổi Mới, triggered by a strong awareness of the disadvantages of a centrally-planned economy, the country has transformed itself from being amongst the poorest in Southeast Asia with risks of famine in the mid-1980s, to becoming one of the world's top rice exporters, and has become a lower middle-income country since 2011.
- The national poverty rate has been declining sharply in the past decades with a projection of 8% by 2020. Improvement in health and education service has limited incidence of stunting, wasting and underweight, as well as children and maternal mortality rate. For example, for children under five years old, the mortality rate had declined more than half namely from 58 per 1,000 children in 1990 to 22.9 per 1,000 children in 2014. The maternal mortality rate had dropped by two-thirds from 233 per 100,000 delivery in 1990 to 60 per 100,000 delivery in 2014.
- The country's remarkable economic growth is supported by strong political will and good policy that has led the country into an emerging transition economy with a strong industry and service sector and a steady increase in their income and employment share to the country's GDP. Nowadays, Viet Nam has become well integrated into the global economy through international collaborations, such as the Free Trade Agreement which is expected to boost the flow of Foreign Direct Investment into the country, and simultaneously commit to sustainable development through participating in different international treaties initiated by the United Nations, such as the Sustainable Development Goals (SDGs).

Main challenges

- The widening economic gap between rural and urban areas, and among eco-regions in the country, still continues until today.
The more remote regions in the uplands are having more limited access to basic services such as education and health, as well as information and technology, owing to difficult topography and absence of good infrastructure and information networks.
According to General Statistics Office, in 2016, the highest poverty rate namely 13.8% was found in northern mountainous areas which are home of ethnic minorities, while the lowest namely 2.4% in Red River Delta.

- Disparities in terms of nutrition status also exist among eco-regions. Stunting has been reported amongst 41% of poor communities compared to 6% in non-poor, with most of the poor class belonging to ethnic minorities in the uplands. In addition, roughly 1 in 3 children in the northern mountainous areas and the CH region, and 41% of children below five years old that belong to ethnic minority's family, were stunted. Amongst these, 14% were reported to be in severe condition. A similar situation was found related to the case of underweight and wasting.
- The rural households in Viet Nam are still largely dependent on agriculture as the main source of livelihood and income, especially those having poor economic status. The main constraints for a more sustainable agriculture and promising income from this occupation include the increasing migration and urbanization rate that limits productive labor force for agricultural activities, expansion of industrial areas replacing agricultural lands, participation in non-farm activities by male workers which leads to 'feminized agriculture', unstable market of agricultural products including for the main commodities for export, and increasing intensity of climate change and variability.
- Livelihood diversification through participation in non-farm is increasingly recognized as a strategy to improve rural economy. The adoption and extent of non-farm participation are however determined by household capitals such as human, land, labor and financial capitals, with those having stronger capitals are generally endowed with a better access to non-farm opportunities. Without a proper anticipation, this trend will potentially lead to increasing social tension due to a widening economic gap between poor and rich households. Furthermore, the participation can also lead to labor shortage for farm activities, and serious social and environmental issues. The study in the South-Central Coast of Viet Nam by World Agroforestry (ICRAF) clearly shows that farmers and authorities concerned on the potential negative impacts of non-farm participation to the preservation of culture and local custom in their commune.
- At sectoral level, as identified by the World Bank (2016), the country's agricultural sector has shown impressive performance in terms of production, but less impressive in terms of resource efficiency, product quality, and impact leading to a sustainable rural economy. In the next decade, the sector will face serious demographic, economic and environmental challenges. For the latter, the increasing environmental cost from the current production system will generate increasing concerns from the international market on the reliability, quality, safety, and sustainability of the country's agricultural products.
- In addition to disparity among regions and between rural and urban areas in terms of access to basic services such as health and education, the government also needs to pay more attention in the access by migrant people along with the increasing urbanization rate. The data from the Ministry of Health of Viet Nam shows that only about 30% of private companies in the country cover health insurance fees for their migrant workers, and 90 percent of migrants deprive of any social insurance.
- The Ministry of Planning and Investment has identified several main challenges to the successful implementation of the NAP towards SDG1 and SDG 2 by 2030. These include the current prevailing predominance of low-value added and labor-intensive activities in different sectors; a limited technology transfer; major social and demographic changes such as increasing migration, urbanization, ageing population and a growing middle class; a high incidence of poverty especially in remote and mountainous areas dominated by ethnic minorities; limited international aids that will create difficulties in financing

targeted social and economic activities; increasing intensity of climate change; degrading natural resources; and a weak monitoring, reporting and verification system.

Main strategies for the next decade

- The Viet Nam's National Action Plan (NAP) for the Implementation of Sustainable Development Agenda to 2030 has formulated clear national targets and strategies to achieve each of the 17 SDGs, and is adapted to the country's geographical, social and political conditions, and set in harmony with existing policies and other national strategies. In the NAP, priorities in eradicating poverty, hunger and malnutrition are oriented towards rural and upland areas that are generally dominated by economically poor communities and ethnic minorities with high exposure and vulnerability to socio-economic and environmental shocks. Among these communities, females and children are the most concerned.
- Related to SDG1 namely to end poverty by 2030, the NAP targets an effective implementation of existing policies for poverty reduction and to encourage poorer households and disadvantaged people to become proactive and participate in the poverty reductions' programs. Other action plans include improvements to infrastructure in poor districts/communes especially basic infrastructure such as roads, schools, medical stations, irrigation systems and clean water supply; develop a database for monitoring multi-dimensional poverty, improve the social protection system, mainstream the need of equal rights for all people to access economic resources and basic services through mass media and social organizations, and enhance the resilience of the poor and vulnerable communities to climate change and variability.
- In terms of SDG2 namely to end hunger and malnutrition by 2030, the NAP emphasizes the need to more effectively implement existing policies and strategies that aim to reduce hunger and malnutrition, including the National Food Safety Strategy for 2011-2020, vision to 2030 which encourages private sectors to invest in the production of food products that support nutrition sufficiency in targeted groups (i.e. the poor and vulnerable communities etc.); diversify the production, processing, and utilization of locally available foods; develop nutrient-sensitive home garden systems; further support scientific research on nutrition and food; disseminate new varieties of crops with improved nutritional content; mainstream the need of nutrition sufficiency and successful community-based nutrition models through the educational system, public health systems and mass media, and consolidate nutrition surveillance systems at the community and health facility level.
- The government has promulgated several plans, policies, and legal documents to strengthen rural development that directly or indirectly contribute to the alleviation of poverty, hunger and malnutrition. Among the main ones are the two phases of National Targeted Programs, New Rural Development Programs, and Sustainable Poverty Reduction Programs. The National Targeted Programs represent key strategies to tackle multi-dimensional challenges of rural development and focus on ethnic minorities. The New Rural Development Programs aims at improving services and infrastructure in rural communities across all provinces in the country. The Sustainable Poverty Reduction Program focuses on the improvement of infrastructure, livelihoods, basic services and capacity building for the 94 poorest districts and 310 communes in coastal areas in the

country. The three programs are currently in the second phase of implementation (2016-2020) under support from international partners.

- The government has also enacted other policies that contribute to the eradication of poverty and food inefficiency and malnutrition such as national 2011-2020 socio-economic development strategies and food security policies. The former has a vision of “towards a modern and industrial-oriented country by 2020 with socio-political stability, agreement, democracy, discipline; improved physical and spiritual life of the people; maintained independence and territorial unification; improved international reputation; and stronger development in the next decade.” The latter can be classified into three main categories, namely those focusing on (i) food availability, (ii) food accessibility and affordability, or (iii) food safety and nutrition.
- The country participates in Zero Hunger Challenge and aims at promulgating a NAP as more concrete strategies to achieve the targets. The United Nations’ agencies coordinated by the United Nations Resident Coordinator and with a technical support from FAO, are aiding to accelerate the formulation of the action plans. The NAP will be also integrated into the country’s Socio-Economic Development Plan 2016-2020, especially in the section specifying programs for poverty reduction and new rural development. The main goal of the NAP is to ensure sufficient and healthy foods for all citizens in the country by 2025, while committing on zero hunger by 2030 set in SDG2.

Recommendations

- Related to the challenges in the implementation of NAP for 2030 sustainable development agenda, the Ministry of Planning and Investment has provided some recommendations which include the need of statistical capacity building, for example related to monitoring system and integrated policy analysis; the need of enhancing financial capacity such as effective implementation of tax policies and effective administration and public private partnerships; and higher investment in science and high-tech innovation along with more intensive collaboration among research institutions, universities, private sector, governments, non-governmental organizations, and scientists, to accelerate technology transfer.
- For the agricultural sector in the country that will face increasing demographic, economic and environmental challenges in the next decade, the main strategies as recommended in the report by World Bank (2016) include shifting from primary production to processing along with increasing urbanization rate and population of middle class that mainly demand processed foods instead of raw products; increasing the quality and added-values of agricultural export products through advanced technology since the rapid economic growth of the country has been so far relied on massive quantity of low-quality products; diversifying quality products for better accessing market opportunities; and reducing impacts of agricultural management practices and processing to environment, for environmental protection and safe products.
- As the summary of recommendations to agricultural sectors, the World Bank highlights the need of “achieving more from less” namely a greater economic welfare from resource efficiency and less environmental footprints. Furthermore, an enabling condition for the effectiveness of this strategy is a structural change in which the government provides a

role mainly as ‘facilitator or enabler’ rather than ‘leader’, particularly in relation to farmer and private sector investment, productivity and market development.

- Without a proper anticipation, participation in non-farm activities can potentially lead to a serious social and environmental problems, among other issues such as labor shortage for farm activities. The study in the South-Central Coast of Viet Nam by World Agroforestry (ICRAF) listed potential solutions identified by farmers and authorities to mitigate the negative impacts of non-farm participation to different issues such as demographic, land, financial, social and environmental issues. Expected solutions for social issues include the need of increasing awareness of young people on the importance of preserving local custom and culture as village’s identity and to organize regular cultural festivals in the village.
- In the literature, the study on the potential impacts of non-farm activities to farm and other activities of rural households is very limited, including for the case of rural areas in Viet Nam. The study in the South-Central Coast region by World Agroforestry (ICRAF) clearly fills the gap, and there is a need to conduct similar studies in the other areas having different biophysical and socio-economic conditions compared to the study commune. Furthermore, since the study did not consider gender aspect in exploring the local perspectives on potential impacts of non-farm activities, further studies need to include this aspect.
- Developing sustainable agriculture is regarded as a way to reduce poverty, hunger and malnutrition and is expected to provide higher productivity rates, higher income to the involved laborers, and support for the maintenance of ecosystem services. Potential options of sustainable agricultural system for upland areas in Viet Nam include agroforestry systems that integrate natural vegetation strips such as with perennial and annual crops and fodder grass on the same land with contour planting. Existing studies in the literature have reported potential economic benefits that can be derived from these systems cultivated in uplands, without compromising environmental pursuits. For example, due to their ability in reducing soil erosion as the main cause of soil fertility’s degradation in uplands, the systems can potentially reduce up to or more than 90% of soil loss compared to monoculture of annual crops as the current traditional practice in uplands, and improve the production of associated annual crop up to 40% through introducing nitrogen-fixer perennial crop. The more permanent soil cover in the system also reduces both the incidence of soil erosion and burning of crop residue; whereas the integration of short-term and long-term plant components provides more stable income across year. With other potential benefits that can be derived from these systems, the landscape and rural households in the upland regions can become more resilient to economic and environmental shocks.
- The promotion of more sustainable farming practices in uplands, should be accompanied by the efforts in improving the national extension system and service. It provides knowledge and skills to smallholder farmers across regions and administrative levels in the country, and there have been some public concerns regarding its effectiveness in reaching the grass-root level and more remote areas in the uplands, and around the qualification and communication skills of its staffs. The system has also been criticized for its top-down approach and its lack of consideration of local contexts. More participatory approach, intense interaction between extension systems and research institutions in the country to increase the knowledge and skills of the extension staffs are therefore deemed very necessary.

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9. Annex 1 The National Action Plans for SDG1

Goal 1: End all forms of poverty everywhere	
Target 1.1: By 2020, eliminate extreme poverty for all citizens everywhere, using the poverty line with per capita income below USD 1.25/day in Purchasing Power Parity (in 2005 constant price); by 2030, reduce poverty at least by a half, using the national multi-dimensional poverty criteria (International targets 1.1 and 1.2)	
<ul style="list-style-type: none"> - Continue to effectively implement the National Targeted Program on Sustainable Poverty Reduction for the 2016-2020 period; ensure that the objectives set out for the Program will be achieved, with a particular focus on sustainable poverty reduction for vulnerable groups, ethnic minorities, people with disabilities, and women and children. - Make continued efforts to review, amend, improving poverty reduction policies, particularly policies for ethnic minority groups; gradually move towards providing conditional support linked to target groups, locations and beneficiary time-bound targets in order to encourage the poor to take an active, proactive part in the program. - Improve the livelihoods and the quality of life in poor communities, ensuring that the per capita income of poor households across the country will, by 2020, increase by 1.5 times compared to that of 2015 (by 2 times for poor households in poor districts/communes, especially disadvantaged villages/hamlets, and poor households of ethnic minority groups). - Synchronously and effectively implement poverty reduction policies, mechanisms in order to improve living conditions of the poor and their access to basic social services. Formulate and effectively carry out appropriate pro-poor, gender sensitive strategies and policies in order to reduce poverty, achieve gender equality and increase resources for sustainable poverty reduction efforts (International target 1.b). - Make focused investments in developing socio-economic infrastructures in poor districts/communes and especially disadvantaged villages/hamlets based on new countryside criteria, prioritizing basic infrastructures, such as roads, schools, medical stations, small-scale irrigation works and clean water supply. - Mainstream gender and child elements in poverty reduction policies. - Develop a database system for monitoring multi-dimensional poverty, taking into account performance by gender, age groups and geographical location. - Make increased efforts to oversee, monitor implementation of participatory poverty reduction policies. - Effectively mobilize, utilize and oversee the use of all domestic and external resources for poverty reduction programs and policies (International target 1.a). 	<p>Lead agency*: MOLISA</p> <p>Coordinating agencies: MARD, MPI, MOF, MOIC, MOH, MOET, MOTI, MOTC, MOC, CEMA, socio-political organizations, social and professional associations, People's Committees of Provinces and Centrally-Managed Cities</p>
Target 1.2: Implement appropriate social protection systems, measures for all citizens across the country, including floors and, by 2030, achieve substantial coverage for the poor and the vulnerable (International target 1.3).	
<ul style="list-style-type: none"> - Make serious, effective efforts to implement Politbureau Resolution No. 21-NQ/TW dated 22 November 2012 on enhancing the Party's leadership over social insurance and health insurance policies for the 2011-2020 period. - Improve the current system of social protection legislation in order to increase access by the poor and the vulnerable to the social protection system. - Prepare and issue new laws, e.g. a law on Social Assistance, a law on Social Preferential Treatment and relevant normative documents. From 	<p>Lead agency: MOLISA</p> <p>Coordinating agencies: MARD, MPI, MOF, MOIC, MOH, MOET, MOTI, MOTC, MOC, CEMA, socio-political organizations, social and –professional associations, People's</p>

<p>2020 onwards, study the feasibility of preparing a framework law on Social Protection with the purpose of integrating current laws.</p> <ul style="list-style-type: none"> - Prepare analysis on minimum and medium living standards that are fitted to the country's socio-economic conditions and that will serve as the basis for identifying social assistance target groups and norms. Formulate and implement a Targeted Program on developing the social assistance system for 2016-2020; and a project on renovating and developing social assistance for 2016-2025 and the vision to 2030. - Issue guidelines on the enforcement and oversight over the implementation of newly enacted social protection legislation. Implement inclusive policies for all citizens. - Effectively roll-out policies that support the poor, the near-poor, ethnic minority people, social welfare beneficiaries and other vulnerable groups, enabling them to access basic social services 	<p>Committees of provinces and centrally-managed cities</p>
<p>Target 1.3: By 2030, ensure that all citizens, particularly the poor and the vulnerable, have equal rights to access economic resources and basic services, the right to use land and natural resources, the right to own and control over other forms of property, to access appropriate new technologies and financial services, including micro finance (International target 1.4).</p>	
<p>1.3a</p>	
<p>Review and make recommendations to improve the existing system of legislation to ensure equal rights for citizens, particularly women, the poor and the vulnerable, to access economic resources, basic services, the right to use land and natural resources, the right to own and exercise control over other forms of property as provided for by the Constitution.</p>	<p>Lead agency: MOJ Coordinating agencies: MOLISA, MARD, MPI, MOF, MOIC, MOH, MOET, MONRE, MOTI, MOTC, MOC, CEMA, Social Policy Bank, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities.</p>
<p>1.3b</p>	
<ul style="list-style-type: none"> - Strengthen coordination between ministries, sectors and at the same time, mobilize the participation of social organizations, mass media in order to communicate on and advocate for equal rights of all citizens to access economic resources and basic services, own and control other forms of property as provided for by the Constitution. - Enhance the oversight by socio-political organizations, social and professional associations, and local communities over the enforcement of legislation and the handling of violations. 	<p>Lead agency: VNFF Coordinating agencies: MOLISA, MARD, MPI, MOF, MOIC, MOH, MOET, MOTI, MOTC, MOC, VNSB, VTV, VOV, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities</p>
<p>Target 1.4: By 2030, improve the resilience of the poor and the vulnerable and, at the same time, reduce their exposure and vulnerability to climate-related extreme weather events and other economic, social, environmental shocks and disasters (International target 1.5).</p>	
<ul style="list-style-type: none"> - Revise, amend, and improve current policies in order to improve the resilience of the poor and the vulnerable in face of extreme weather events and natural disasters. 	<p>Lead agency: MARD Coordinating agencies: MOLISA,</p>

<ul style="list-style-type: none"> - Mainstream poverty eradication within climate change response policies, natural disaster preparedness and prevention policies and other relevant policies. 	MPI, MOF, MOJ, MOH, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities
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*Acronyms used for the line ministries: MOLISA (Minister of Labor, Invalids and Social Affairs), MPI (Minister of Planning and Investment), MOF (Minister of Finance), MOH (Minister of Health), MOIC (Minister of Information and Communications), MARD (Minister of Agriculture and Rural Development), MOET (Minister of Education and Training), MOTI (Ministry of Trade and Industry), MOTC (Ministry of Transport and Communications), MOC (Minister of Construction), CEMA (Chairman of the Committee on Ethnic Minority Affairs), MONRE (Minister of Natural Resources and Environment), MOJ (Minister of Justice), MOST (Minister of Science and Technology).

10. Annex 2 The National Action Plans for SDG2

Goal 2: Eliminate hunger, ensure food security, improve nutrition and promote sustainable agricultural development	
Target 2.1: By 2030, eliminate hunger and ensure access by all citizens, particularly the poor and the vulnerable including the elderly and infants, to safe, nutritious and sufficient food throughout the year (International target 2.1).	
2.1a	
<ul style="list-style-type: none"> - Continue to effectively implement the National Food Safety Strategy for 2011-2020 and Vision to 2030. - Improve mechanisms of inter-agency coordination to deliver solutions to improve nutrition. - Study the feasibility and formulate programs, projects and dedicated interventions in order to improve nutrition, physical fitness and peoples' physical condition in keeping with the conditions of various regions/areas, with particular attention paid to poor regions, disadvantaged regions, ethnic minority regions and other vulnerable groups. 	<p>Lead agency*: MOH Coordinating agencies: MARD, MOLISA, MOTI, MPI, MOF, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities</p>
2.1b	
<ul style="list-style-type: none"> - Encourage businesses to invest in the production and supply of specific nutritional products in support of poor/disadvantaged regions, ethnic minority regions, pregnant women, children under 5, children with special circumstances and the elderly. - Diversify the production, processing and utilization of locally available foods. Develop vegetable garden - fish pond - animal shed eco-systems, and ensure the production, distribution and use of safe foods. - Strengthen the capacity and scientific research on nutrition and food. Encourage research & development (R&D) and technology transfer on the selection and creation of new breeds and crops with improved nutritional content; conduct research on the production and processing of supplementary foods, micro nutrients, nutritional products and specific nutrients for target groups. 	<p>Lead agency: MARD Coordinating agencies: MOTI, MOH, MOLISA, MPI, MOF, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities</p>
Target 2.2: By 2030, reduce all forms of malnutrition and meet the nutritional needs for all target groups who are children, adolescent girls, pregnant women, lactating mothers and elderly people (International target 2.2)	
<ul style="list-style-type: none"> - Formulate and effectively implement nutrition policies, paying attention to mainstreaming of nutritional issues relating to children, adolescent girls, pregnant women, lactating mothers and elderly people; take due care to address nutritional issues in ethnic minority communities; prepare and implement a nutrition strategy for 2021-2030. - Document successful community-based nutrition models and interventions for replication in those regions which have a high rate of malnourished children, particularly where it results in stunting. - Improve information sharing communications and advocacy on nutrition among mothers, children through the general educational system, the public health system and mass media. - Consolidate nutrition surveillance system at community and health facility level; prepare a plan to meet nutritional needs in a timely manner in emergency situations. - Carry out specific interventions in order to improve nutrition and improve the physical fitness and physical condition of people in mountainous, isolated and remote regions, ethnic minority communities and other vulnerable groups. - Issue regulations on the production, trade and use of nutritional products for small children; increase food fortification; study and recommend 	<p>Lead agency: MOH Coordinating agencies: MOLISA, MARD, MOET, MOIC, MPI, MOF, CEMA, VTV, VOV, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities</p>

<p>policies on nutritional support in schools, first and foremost for children at kindergarten and primary school levels. Study and recommend policies on nutritional support for poor women and ethnic minority women during maternity.</p> <ul style="list-style-type: none"> - Mobilize the participation of businesses in the implementation of Scaling-Up Nutrition Initiatives in Viet Nam. 	
<p>Target 2.3: By 2030, increase by 1.5 times agricultural productivity and income of agricultural labor (International target 2.3).</p>	
<p>2.3a</p>	
<ul style="list-style-type: none"> - Accelerate agricultural restructuring in order to increase added-value and ensuring sustainable development. - Continue to revise and amend the suite of policies driving improvements in agricultural production - Plan food production throughout the country on the basis of promoting regional comparative advantage, making an effective use of soil, water resources; pay due attention to strategic planning in major food producing regions - with large outputs of rice, maize, vegetables/beans, fruit trees, aquatic products and animal products - in order to ensure successful realization of national food security objectives. - Select, produce and ensure full supply of highly productive, good quality plant, animal and aquatic species, particularly those that are resilient to unfavorable conditions, such as saline water inundation and drought, and genetically modified varieties, in order to meet production needs. Introduce new, high quality species into production, apply advanced farming techniques; and import high quality species. - Develop production areas that are disease-free, apply high tech and advance techniques, and focus on application of Good Agricultural Practices (GAP); and develop garden, farm economies. - Increase investment in rural infrastructures, research and promotion services; develop agricultural technologies and Gene Banks for plants and animals in order to improve agricultural production capacity (International target 2.a). 	<p>Lead agency: MARD Coordinating agencies: MPI, MOF, MOJ, MOST, CEMA, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities</p>
<p>2.3b</p>	
<p>Correct and prevent trade barriers, measures that distort world agricultural markets in keeping with the direction of set out in the Doha Development Round, including the removal of all forms of subsidy for agricultural exports and export measures that have similar effects (International target 2.b).</p>	<p>Lead agency: MOTI Coordinating agencies: MARD, MOF, MPI, MOFA, MOJ</p>
<p>Target 2.4: By 2030, ensure sustainable food/foodstuff production and apply resilient agricultural production modalities, increasing productivity and output, that help maintain eco-systems, and strengthen the capacity for adaptation to climate change and other disasters and progressively improve land and soil quality (International target 2.4)</p>	
<ul style="list-style-type: none"> - Build the capacity of forecasting, early-warning, proactively preventing, avoiding and mitigating natural disasters, and the capacity of responding to climate change. - Promoting measures for preventing and responding to, and mitigating the impacts of tidal waves, inundation, and saline infiltration as a result of sea level rise. - Promote the application of science, technology and technical advances in agricultural production and development with the aim of moving towards to clean agriculture, ecological and environmental protection and enhanced resilience. - Increase investment, provide technical assistance and transfer technology to agricultural production sub-sectors that have high value-added, in order to strongly accelerate labor restructuring and better meet the needs of modern and effective agriculture. 	<p>Lead agency: MARD Coordinating agencies: MONRE, MOIC, MOST, MOTI, VCCI, socio-political organizations, social and –professional associations, People's Committees of provinces and centrally-managed cities</p>

<ul style="list-style-type: none"> - Increase the awareness of citizens, particularly of agricultural producers and businessmen, regarding sustainable agricultural production. - Develop and progressively phase in food/ foodstuffs markets and their derivative instruments forms; make investments in improving the infrastructure and a labor force to support a better market information and forecasting system so as to provide timely information on the demand, supply and prices in domestic and world markets (International target 2.c). - Urgently implement policies and programs to support of infrastructure development, agricultural production development, and irrigation linked to localities' socio-economic development efforts in the Mekong Delta. 	
<p>Target 2.5: By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals; promote access to genetic resources and a fair and equitable sharing of benefits arising from the utilization of genetic resources and relevant native knowledge in accordance with the country's international commitments (International target 2.5).</p>	
<ul style="list-style-type: none"> - Study, formulate and promote mechanisms for accessing genetic resources; implement experimental models on the sharing of benefits from the use of genetic resources, the impact on local communities and pay attention to the benefits of communities. - Formulate and implement a project on strengthening the capacity for implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. - Deliver this protocol via the Formulate Crop and Plant Seed Bank that are well managed at the national level. - Promote access to and an equitable distribution of benefits arising from the utilization of genetic resources and relevant native knowledge in accordance with the country's international commitments. 	<p>Lead agency: MARD Coordinating agencies: MONRE, MOST, socio-political organizations, social and professional associations, People's Committees of provinces and centrally-managed cities</p>

*Acronyms used for the line ministries: MOLISA (Minister of Labor, Invalids and Social Affairs), MPI (Minister of Planning and Investment), MOF (Minister of Finance), MOH (Minister of Health), MOIC (Minister of Information and Communications), MARD (Minister of Agriculture and Rural Development), MOET (Minister of Education and Training), MOTI (Ministry of Trade and Industry), MOTC (Ministry of Transport and Communications), MOC (Minister of Construction), CEMA (Chairman of the Committee on Ethnic Minority Affairs), MONRE (Minister of Natural Resources and Environment), MOJ (Minister of Justice), MOST (Minister of Science and Technology).