
Population Explosion and the Environment in Developing Countries: A Case Study of Vietnam

*Nguyen Van Dao^a, Vu Hong Van^b

Abstract: The relationship between population and the environment in recent years has become a special concern for many countries and international organizations. Population growth is putting severe pressure on the global environment. The process of industrial activities has increasingly depleted resources, environmental pollution and the ultimate consequence is the degradation of the quality of life of the community. It's time to change the way of thinking, perception of the world. How to prevent human-induced harm? How to develop to satisfy current needs without compromising the ability of future generations? How to keep resources and environment clean for the next generation? In this article, I explore how the population explosion affects the environment; solutions to limiting population growth as well as limiting environmental pollution in Vietnam.

Keywords: Population explosion; environment; developing countries; Vietnam

1. Introduction

“We, humans are remarkable creatures. From our humble beginnings in small pockets of Africa, we have evolved over millennia to colonize almost every corner of our planet. We are clever, resilient and adaptable—perhaps a little too adaptable” (Stephen Dovers & Colin Butler, 2019). In the past 100 years, the world population increased rapidly, especially in the second half of the twentieth century. In the later years, the population increased by 1 billion, the more shortened. Currently, the world population increases by nearly 80 million people annually. The world population is forecast to reach 8.6 billion by 2030, then to 9.8 billion by 2050 and 11.2 billion by 2100. The current world population boom takes place mainly in developing countries. These countries account for about 80% of the population and 95% of the world's growing population. The rapid increase of population in the world is reflected in a number of main reasons such as population and migration

habits; urbanization; more and more cities have more than 1 million people. To date, the world has over 270 cities per 1 million people and 50 cities over 5 million people (The World Bank, 2019).

The population explosion not only creates pressure on resources but also is a link that leads to the process of exploitation that depletes that resource quickly. The concept of the reciprocal relationship between population and environmental conditions is complex, diverse and contains many variables. The environment is an important and decisive issue in the development and evolution of mankind. In the dialectical relationship between population and development, environmental issues cannot be separated. Population growth, economic development increase living standards, and depletion of resources, environmental degradation, land loss, deforestation, desertification as a result of population growth. The UNICEF's (2014) report has written:

“From another perspective, metabolic rates can be seen as the ‘material footprint’, etc. These metabolic rates are more than one order of magnitude different for different countries...While global resource use has increased eightfold during the course

^aVan Lang University, 45 Nguyen Khac Nhu street, Co Giang ward, District 1, Ho Chi Minh city, Vietnam.

*Corresponding author email: nguyenvandao@vanlanguni.edu.vn

^bUniversity of Transport and Communications, No.3 Cau Giay Street, Lang Thuong Ward, Dong Da District, Hanoi, Vietnam.

of the 20th century, etc. average resource use per capita merely doubled”.

UNEP (2014) takes a somewhat contradictory attitude to population and environment. On the one hand, the report states: “A major driver of the overall increase in raw material extraction and use is population numbers. The world’s, and each country’s, material use is tightly coupled to the number of inhabitants”. Further, the report goes on to suggest that resource use and population may in fact actually be negatively correlated, stating: “It appears that densely populated areas and regions, for the same standard of living and material comfort, need fewer resources per capita (than less densely populated areas)”.

Kenneth Smal (2003 & 2016) reflects that despite the impossibility of decoupling the population from sustainability concerns, the issue of population growth has gained a certain “political charge”. Population growth is shunned in the politically correct academic circles, with critics arguing that we do not have a global overpopulation issue, but a global issue of overpopulation of just the highly privileged and exploitative minority, and that population growth is used as a scapegoat by rich over-consuming elites (Fletcher, 2014a). Environmental protection, population, and environment are two closely related factors. The development of one factor is related to the development of the other: The fluctuation of the population has positive or negative impacts on the sustainable or unsustainable development of the environment and resources. It also the opposite effect in human society by both sides. Especially in the trend of socio-economic development today, the above relationship is more clearly shown (Luan, NX, 2019).

According to data published by the Central Population and Housing Census Steering Committee at a national online conference announcing the preliminary results of the 2009 Population and Housing Census: calculated By 0:00 on April 1, 2019, Vietnam’s population reached 96,998,984 people, becoming the 15th most populous country in the world, ranking 3rd in Southeast Asia after Indonesia and the Philippines. The census results of 2019 also show that Vietnam is a country with a high population density compared to other countries in the world and the region. In 2019, the national population density reached 290 people/km², an increase of 31 people/km² compared to 2009. The two cities with the highest population density in the country are Hanoi (2,398 people/km²)

and Ho Chi Minh City (4,363 people/km²). The population density of these two socio-economic

centers is 10 times higher than that of the whole country.

This study begins with a short review of the theories for understanding the population and the environment. Then, it proceeds to provide a state-of-the-art review of studies that have examined population dynamics and their relationship to the following environmental issue areas: land-cover change and deforestation; the proliferation of waste; pollution of water resources; air pollution and noise, and climate change. In the concluding section, we relate population-environment research to the emerging understanding of complex human-environment systems.

2. Research Methods

This study employs both quantitative and qualitative methodologies for data collection, analysis and representation to approach the aims of the research. Therefore, a mixed-method approach has been adopted in the study involving observation, survey questionnaires and in-depth interviews with the state management agencies on population and environment. The main data is obtained from the analyses of Vietnam’s population situation, a practical survey on the relationship between the pressures of population increase on the environment (mainly here are negative impacts). The secondary data is mostly from literature on the demographic characteristics of each region in the country, which is concentrated in the two largest cities of Vietnam, which are Hanoi and Ho Chi Minh City.

Due to the differences in the background of respondents and purposes for information collection about the relationship between the pressures of population increase on the environment, a set of different questionnaires were designed for this study. These questionnaires include ones for leaders of the state management agencies on population and environment, researcher’s population and environmental activists. People living in Vietnamese cities have been polluted, particularly Hanoi and Ho Chi Minh City. The study focuses on these three target groups since they are the most important stakeholders concerning population and environmental issues. There are two main parts of these questionnaires: closed questions and open-ended questions. In these questionnaires, stakeholders are asked about their

knowledge, experience, and opinion on the impact of population increase on the environment.

3. Research Background and Literature Review

Malthus (1789), in "essay on the principle of population" states that the population increases exponentially and the food only increases arithmetic progression. It is this that directly limits the availability of resources, and in turn, these resources directly affect population growth. Thus, there is a conflict between the population increase and the fertility of the land, that is, there is a conflict between the population and the problems of resources and environment. The Malthusian theory (17989) was formulated before the agricultural revolution, assuming that the productivity of environmental resources such as land was fixed.

Population and environment relations are considered in a holistic context that includes social, cultural, institutional and political factors. In fact, there have been many studies in this direction. Bilsborrow (1992) developed an intermediary framework to understand the impact of population growth on land use and agricultural production in rural Latin America. The framework takes into account socio-economic conditions such as poverty, government policy, and defined market demand: population growth leads to technological changes in agriculture, land degradation or migration.

According to Jolly, C.L (1991), in the relationship between population and the environment is affected by the development process. It is important to point out that the development trends have created regions and localities that are dependent on others. For example, the exploitation and export of natural resources to production centers. Usually, in less developed regions, there is a tendency to exploit and export raw materials, leading to exhaustion of natural resources. On the contrary, in relatively developed areas, the environment is polluted by an increase in waste during production. In addition, this "dependency" also includes the field of technology, where less developed ones possess more backward technology. The "dependent-view" emphasizes that in developing countries, international economic and political fundamentals play an overwhelming role in shaping both demographic factors such as population growth as well as environmental degradation. This approach shows that the main problems of the global environment (depletion of the ozone layer, greenhouse effect, accumulation of toxic waste and loss of biodiversity) are the direct results of this

"dependency" (Martine 1992 & 1993). In developing countries, the trend of these models is now increasing

rapidly, which is the reason that worsens the negative impact on the environment.

At the global level, research has found that the two major drivers of humanity's ecological footprint are population and consumption (Dietz T, Rosa EA & York R, 2007), so we provide a brief introduction to these the status and trends.

The environmental impact of world population growth can be described by a general formula: $I = C.P.E$. In which: C is the increase in resource consumption per capita; P is the absolute increase in the world population; E is the increase in the environmental impact of an exploited resource unit by the human.

The negative effects of current population growth in the world are manifested in the following aspects:

Great pressure on the natural resources and the earth's environment due to overexploitation of resources for housing needs, food production, food, industrial production, etc. According to FAO (2019), the world's grain use in 2020 is expected to exceed 2.708 million tons, an increase of 1% from the previous year, with an increase in the use of rice and wheat faster than corn.

Generating concentrated waste sources that exceed the biodegradability of the natural environment in urban areas, agricultural and industrial production areas. According to statistics of the Ministry of Construction of Vietnam (2019), each year, the total domestic solid waste of Vietnam is nearly 16 million tons. The daily amount of plastic waste is estimated at nearly 18 thousand tons and is among the top 5 countries discharging waste into the sea, with an amount of about 1.8 million tons per year.

The disparity in population growth rate between industrialized and developing countries is increasing, leading to poverty in developing countries and excess consumption in industrialized countries. Increasing disparities between urban and rural areas, between industrialized countries and underdeveloped countries, lead to migration in all forms.

The increase in urban population and the creation of large cities - megacities put the urban environment at risk of serious degradation. The supply of clean water, houses, and trees cannot meet population development. Environmental pollution, air, and water increase. Air pollution in the two biggest cities of

Vietnam, Hanoi and Ho Chi Minh City in 2019, proved that point.

4. Research Results

4.1. Population growth causes air pollution

Air pollution is currently a common concern of global society. Because it is considered a leading factor causing serious impacts on the environment and public health (Global Alliance on Health and Pollution, 2019).

According to information from the World Health Organization (2017), air pollution causes premature death for about 4.2 million people worldwide. Of these, 91% of the population belongs to poor and populous countries in Southeast Asia and the Western Pacific. A report published by the Global Alliance on Health and Pollution (2019) shows that more than 71,300 people have died from environmental pollution in Vietnam. More than 50,000 people died from air pollution, in 2017, the latest year for which we have this data. Thus, in terms of pollution deaths, Vietnam ranks fourth in the Western Pacific region, behind only China (1.8 million), the Philippines (86,650 people) and

Japan (82,046 people) (Global Alliance on Health and Pollution, 2019).

The current heaviest air pollution two cities in Vietnam is Hanoi (fig 1) and Ho Chi Minh City, especially the fine dust pollution, which has recently reached an alarming level. "The main reason is still emissions from traffic, first of all, motor vehicle (Hien, PD, 2019). Due to the rapid population growth, as there is no alternative public transport vehicle, people mainly use private transport vehicles (mainly motorbikes and cars). Hanoi now has over 7.5 million transport vehicles (motorcycles, trucks, buses, cars) (Hanoi Department of Transport, 2019). Each such vehicle emits very toxic gas dust, most of which is fine dust, ie less than 2.5 microns. But there are two types of vehicle emissions that few people pay close attention to. The first is the particles directly emitted by vehicles, less than 2.5 microns, even less than 1 micron, mostly particles from the engine, incomplete combustion should emit, including very toxic particles, such as black carbon, which Vietnamese call soot, especially from diesel cars (Hien, PD, 2019).





















Major city	US AQI	Followers
1  Hanoi, Vietnam	314	2.92M Follow 
2  Kathmandu, Nepal	205	34.6K Follow 
3  Kolkata, India	182	1.6M Follow 
4  Dhaka, Bangladesh	178	82.1K Follow 
5  Chongqing, China	173	62.9K Follow 
6  Mumbai, India	162	1.69M Follow 
7  Chiang Mai, Thailand	162	8.16M Follow 
8  Wuhan, China	159	87.9K Follow 
9  Shenyang, China	149	31.7K Follow 
10  Yangon, Myanmar	148	42.1K Follow 

Figure 1. Air Visual's rankings show Hanoi is the world's No. 1 in air pollution level (February 21, 2020).

Besides, when the car runs, the tires wear out and from there emit other particles, then dust on the road, there is fine dust still follow the car. But what few

people noticed, that it emits very toxic gases, including NO₂, or NO_x, SO₂, CO and organic, easily volatile organic gases, including benzene. Benzene is an

additive that people put into gasoline, instead of lead (now banned), and is also a carcinogen. Large amounts of benzene in the air can be dangerous (Hien, PD, 2019). Those toxic gases are a huge part

emitted by transport vehicles (Institute of Technology and Environment 2015). The problem is that these gases, after a while spreading in the atmosphere, become particles. The particles are mostly very small, most are under 1 micron, and they are called secondary particles (Hien, PD, 2019). Those particles are a huge part of fine dust particles, more dangerous because the finer, it goes deeper (into the body), leaving more toxins in the lungs”.

In addition to motorized vehicles, air pollution in Hanoi and Ho Chi Minh City also comes from many other factors, such as burning honeycomb coal which people use a lot (Hien, PD, 2019). In Hanoi, people still often use honeycomb coal to boil and cook. When burning (honeycomb coal) emits a relatively large amount of fly ash and causes many very unpleasant and toxic odors. In addition to means of transport, burning honeycomb coal, Vietnamese have a habit of burning votive paper on holidays, New Year, full moon, the first day of the month, funerals, etc. In Vietnam, this is very common around temples and pagoda. According to incomplete statistics of the media, in Vietnam, an average of about 50,000 tons of votive papers are used annually, Hanoi alone has spent around VND

400 billion on burning votive papers. If burning the votive paper was previously considered as a symbolic act, up to now each family has to spend 30-50 thousand VND/ceremony. With a rich family, shopping is from a few hundred thousand to tens of millions VND, even more than normal. These are the types of dust caused by biomass burning and greatly affects air quality (Hien, PD, 2019).

4.2. Population Growth Increases the Amount of Waste

Global waste could grow by 70 percent by 2050 as urbanization and populations rise (World Bank, 2018), with South Asia and Sub-Saharan Africa set to generate the biggest increase in rubbish. Countries could reap economic and environmental benefits by better collecting, recycling and disposing of trash, according to a report, which calculated that a third of the world’s waste is instead dumped openly, with no treatment. “If we don’t take any action it could have quite significant implications for health, productivity, environment, livelihoods”

(World Economic Forum, 2018). The rise in rubbish will outstrip population growth, reaching 3.4 billion tons by 2050 from around 2 billion tons in 2016 (World Bank, 2018).

As the world’s population size has grown, waste generation has increased rapidly. This has had a significant effect on humanity, wildlife, and the environment. As a result, governments have tried to replace traditional disposal methods, which result in pollution, with sustainable alternatives. Recycling rates keep increasing, yet projections indicate that we will soon be producing more waste than ever before. According to the census results (2019), Vietnam has more than 96.2 million people, the average annual growth rate in the past 10 years is 1.14%. Along with the population growth, each year, the total amount of domestic solid waste of the whole country is nearly 16 million tons. The daily amount of plastic waste is estimated at nearly 18 thousand tons, with an amount of about 1.8 million tons per year and is among the top 5 countries discharging waste into the sea. (Vietnam Ministry of Construction, 2019). A comparison with several countries shows that Vietnam is among the countries with the highest amount of plastic waste and ocean waste (Vietnam General Department of Environment, 2019) (fig 2).

With the current pace of using plastic appliances and plastic bags, Vietnam is classified in the country as having twice the amount of plastic waste compared to low-income countries (World Bank 2018). Plastic waste in the ocean will destroy the natural environment, negatively affecting the lives of aquatic products and seafood. On land, plastic waste is found in many places (tourist areas, industrial parks, traditional market areas, etc) and causes serious impacts on human health and life. Worth mentioning, the amount of plastic waste and plastic bags in our country accounts for about 8% to 12% of domestic solid waste, but only 27% of which is recycled. Vietnam is also facing the risk of becoming a global dumping site with a 200% increase in plastic waste over the past year (Vietnam Ministry of Natural Resources and Environment, 2018). Also according to the Vietnam Ministry of Natural Resources and Environment (2019), along with the increase in population, plastic consumption per capita in Vietnam has increased sharply from 3.8 kg per year to 41.3 kg per person between 1990 and 2018.

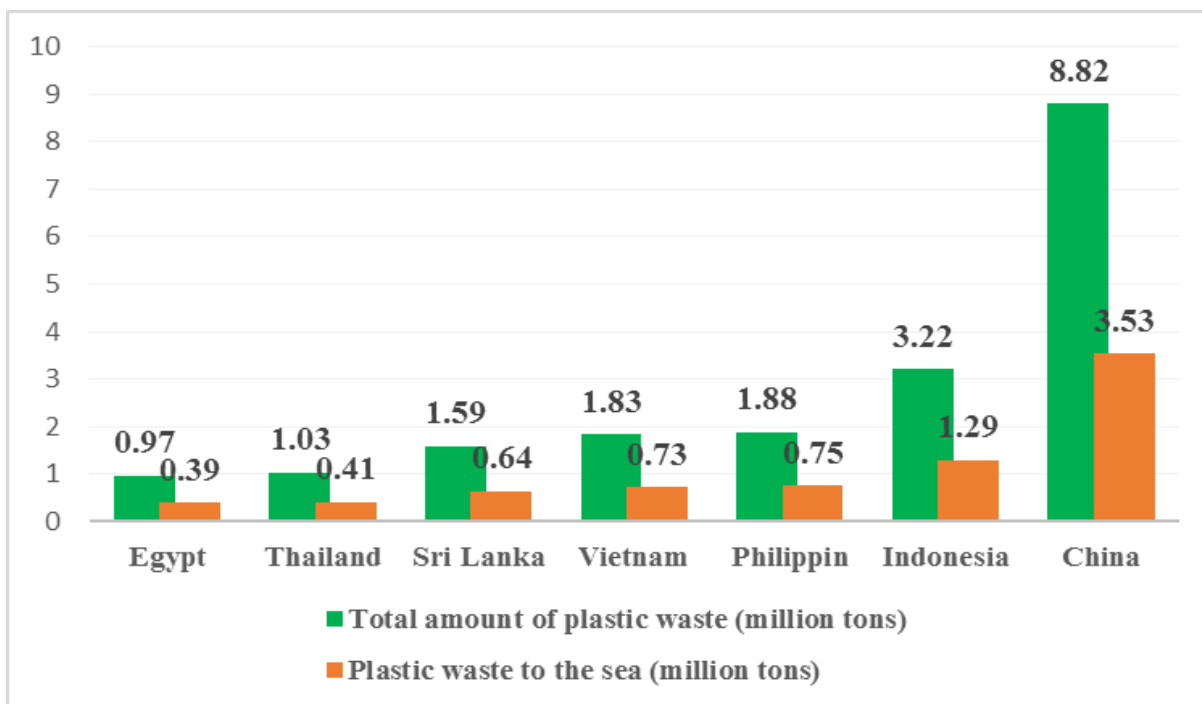


Figure 2. Amount of plastic waste and release into the sea (Source: Vietnam General Department of Environment, 2019)

The use of persistent plastic bags and plastic products, especially disposable plastic items, has left unpredictable consequences for the environment. Recent studies (Hiep, PD, 2019; Luan, NX, 2019 % Vietnam Academy of Science and Technology; 2019) show that, on average, the complete decomposition of the plastic bags and plastic waste takes hundreds, even to for thousands of years. Plastic waste is very much on the bottom of the ocean and will become a food poison to poison marine creatures.

One-time use of plastic appliances and plastic bags is the main reason leading to the rapid increase in plastic waste. According to a statistic issued by the Ministry of Natural Resources and Environment of Vietnam (2018), in Vietnam, each household uses about 1kg of plastic bags in a month; Hanoi and Ho Chi Minh City average of emitting waste into the environment every day are about 80 tons of plastic waste. Every day Hanoi generates 4,000 to 5,000 tons of waste, of which plastic waste accounts for 7-8%. In particular, the number of plastic bags discharged into the environment has been increasing year by year. Although Vietnam has many solid waste treatment technologies, such as using gas from landfills to

generate electricity, direct ordinary burning, and fluidized bed burning, etc, but up to now, in most localities, the treatment of domestic waste in the common form is landfill, accounting for over 70%, and manual burning accounts for 28% (Vietnam Ministry of Natural Resources and Environment; 2018). Out of 660 landfills of more than 1-hectare size, only 120 landfills are hygienic. Landfills in cities are always overloaded, constantly the risk of water and air pollution.

Mr. Bui Van Quan, Chairman of People's Committee of Tan Linh Commune, Ba Vi district, Hanoi City (2019) - where Nam Son landfill is located, said that there are 7 districts and towns transferring garbage to this area. On average, each day there are over 100 tons and the reported treatment is only 30%, 70% are buried and burned manually, causing serious environmental pollution.

Along with the rise of plastic waste in the country, the amount of plastic scrap from countries around the world pouring into Vietnam is also at an alarming rate (General Department of Customs, 2019). Currently, domestic raw materials are still not enough to supply the Vietnam plastic industry, so businesses have to import a large amount of plastic scrap every year to

mix with primary plastic to reduce product costs (fig 3). However, current regulations on the import of plastic scrap into Vietnam still exist

inadequacies. According to the law, the types of scrap allowed to be imported are purely regulated. But in fact, there is no such type of plastic waste that is

classified as such because most are contaminated during use. Taking advantage of this gap, some countries have sought to bring a large number of poor-quality plastic scrap into Vietnam.

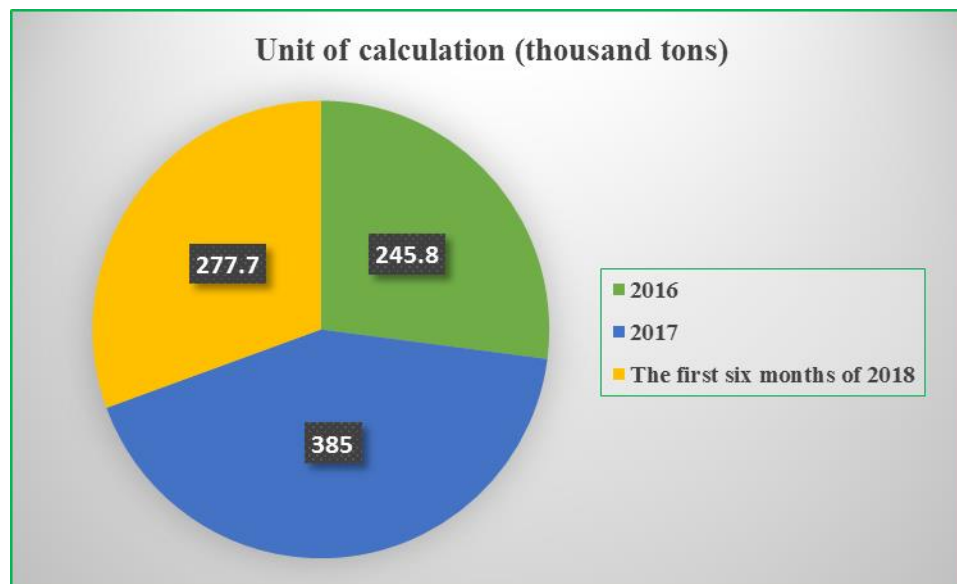


Figure 3. Amount of plastic imported to Vietnam (General Department of Customs, 2019)

4.3. Population Growth Leads to Deforestation

During the last two decades, agricultural expansion, logging, developing the wood processing industry, and other human activities caused the deforestation of more than 120,000 square kilometers each year. In contrast, an area only one-tenth that size was regained due to reforestation efforts and natural re-growth (FAO, 200). This is the continuation of a historical process that has left the world with less than half of its original forests. While population growth and density are unquestionably related to forest cover trends, there is no simple way to describe or predict that association. Not surprisingly, the relationship is as complex as the regional and cultural variations in human societies and the changes in those societies over time.

Vietnam is a tropical country with most of the area is mountainous terrain (accounting for 3/4 of the territory). According to the Ministry of Agriculture and Rural Development's 2018 Forest Status Announcement Decision, as of December 31, 2018, Vietnam's forested area is 14,491,295 ha. In which, there is 10,255,525 ha of the natural forest; 4,235,770 ha of plantation forest. The area of forest land eligible

for national coverage is 13,785,642 ha, and the coverage ratio is 41.65%. Vietnam is also a marine country, so there are rich and diverse mangrove systems; there are 29 provinces and cities nationwide with coastal land and mangroves from Quang Ninh province to Kien Giang province. Currently, the total area of mangroves in Vietnam is about 200,000 ha (Ministry of Agriculture and Rural Development Vietnam, 2018). With this area, Vietnam ranks first among the countries with mangrove forests worldwide.

Today, in Vietnam, due to the rapidly increasing population, the increasing demand for resources has put pressure on natural resources in general and forest resources in particular. Currently, the area of natural forests is declining due to weak forest management and protection. It is this that causes natural disasters to increase in both magnitude and frequency. According to the General Department of Forestry (2018) (Ministry of Agriculture and Rural Development of Vietnam), in just over 5 years (from 2012 to 2017), the natural forest area has been lost due to illegal deforestation accounting for 11%, the remaining 89% is due to conversion of forest use purpose in the

approved projects. As of September 2017, the deforested area was 155.68 hectares and 5364.85 hectares of burnt forest.

The pressure of population growth leading to forest resource destruction can be seen in the following aspects:

Expansion of agricultural land acreage: to meet the demand for food production in which shifting cultivation is the most important cause. Rowe (1992) suggested that up to 60% of tropical forests are cleared every year due to this reason. Currently, the expansion of agricultural land in Asia and Africa is happening at a faster rate than Latin America. Particularly in Vietnam, the focus of deforestation taking land for agriculture is in the Northwest Region, especially in Dien Bien Province. From 2016 to September 2017, in Muong Nhe district, there were 295 cases of illegal deforestation, causing damage to 288 hectares of forest (Department of Agriculture and Rural Development of Dien Bien Province, 2018). In the Central Highlands region, in 2017, the number of illegal forest exploitation cases was 757, up 13%. The area destroyed was about 420 hectares, an increase of 145 hectares over the same period in 2016. Particularly in Dak Nong province, the area once destroyed was up to 225 hectares, an increase of nearly 100 hectares compared to the same period in 2016 (Department of Agriculture and Rural Development of Dak Nong, 2018).

Demand for wood: The volume of forest timber in the world is estimated at about 300-400 billion m³. The forest is likely to grow about 10 billion m³ annually and the current harvest level is about 3.5 to 4.4 billion m³ (Sharma, 1992). So in theory, the rate of logging is within the allowable range of forest rehabilitation and there will be no shortage of timber in the world. However, in fact, overexploit wood has been occurring in many parts of the world. According to the FAO (1982) document, in the early years of the 1980s, there were about 100 million people facing the shortage of firewood, about 1 billion people suffered from the scarcity of firewood. After 2000, this number could reach 3 billion. In Vietnam, this situation is taking place seriously in some northern mountainous areas and the Central Highlands. Na Pen area (Na Nhan commune, Dien Bien district, Dien Bien province) is considered as one of the areas with old forests with large areas, the largest timber reserve in Dien Bien province. According to the district authorities (2019), most people cut down forest trees and use firewood for fuel for family activities. These are households with difficult

economic conditions and have no money to buy gas or electricity to replace firewood. More than 60% of households use firewood

as fuel; in which 2 communes of Nam Long and San Thang have 98% of households use firewood as fuel. Some people harvest timber to make housewares. Many perennial trees have been felled, many primeval forests are no longer able to regenerate. According to the Department of Agriculture and Rural Development of Lai Chau Province (2019), in 2017, Lai Chau province had 7,077.44 hectares of natural land, of which 2,587.6 hectares of forestry land and 1,858.54 hectares of forested land, the percentage of forest cover reached 26.26%; by the second half of 2019, the forest cover rate is only 24.3%.

Cattle grazing and aquaculture: Currently, the increasing demand for meat and seafood requires increasing numbers of cattle and seafood. Cattle grazing and aquaculture require expanding pastures, expanding water surfaces, which also causes deforestation.

According to the decision of the People's Committee of Binh Phuoc province (2018), it is allowed to transfer 575 hectares of forest in the Bu Dop forestry farm (Bu Dop district) to convert to implementing the "husbandry project combined with afforestation". To implement the project, many hectares of forests have been logged. According to the media (2019), in only about 3 months, nearly 129 hectares of forest in the first plot were basically cut down and leveled. The area expected to continue to cut down is more than 224.3 ha (belonging to plots 2 and 3, sub-area 69, in Bu Dop forestry farm). Most trees have a diameter of 15 - 25 cm, with trees up to 35 cm in diameter.

According to the Ministry of Natural Resources and Environment (2015), over the past five decades, Vietnam has lost 67% of its mangrove area compared to 1943. Between 1943 and 1990, the average rate of mangrove loss was 3,266 ha/year, to the period 1990 - 2012 is 5,613 ha/year. In 22 years (1990 - 2012), the rate of loss of mangroves was 1.7 times higher than that of the previous 47 years (1943 - 1990). By 2012, 56% of the total mangrove area of the country was newly planted, pure, poor quality forest in terms of size, tree height and species composition diversity.

One of the main reasons for the decline of mangrove forests is the destruction of forests to make extensive, semi-industrial and industrial shrimp farming ponds taking place throughout Vietnam's country's coastal areas. Due to not fully understanding

the multifaceted values of the mangrove ecosystem, or the immediate economic benefits, especially the profits from shrimp farming

for export, Vietnam's mangroves have been seriously degraded. In the 2005 - 2006 forest area alone, more than 4,000 ha of natural forests mangroves were lost, of which more than 50% was due to deforestation for aquaculture and other purposes (Ministry of Natural Resources and Environment of Vietnam, 2017). From 2011 to 2016, mangroves in the Mekong Delta region have been seriously reduced, mainly due to landslides and forest allocation for aquaculture. In 5 years (2011 - 2016), the area of mangrove forests in the region decreased by nearly 10%, from 194,723 ha in 2011 to 179,384 ha in 2016 (Ministry of Natural Resources and Environment of Vietnam, 2017).

In Vietnam, studies show that a 1% increase in population results in 2.5% loss of forest (Luan, NX, 2019). The problem of population growth is putting pressure on Vietnam's forest resources. Without proper measures to exploit and use forest resources, these resources will quickly exhaust and cannot be recovered.

4.4. Population Growth Depletes Resources

Resource depletion is the consumption of a resource faster than it can be replenished. Natural resources are commonly divided between renewable resources and non-renewable resources. The use of either of these forms of resources beyond their rate of replacement is considered to be resource depletion (Hook, M.; Bardi, U.; Feng, L. & Pang, X, 2010). Since the 1970s, the global population has doubled and the global Gross Domestic Product (GDP) has grown fourfold. These trends have required large amounts of natural resources to fuel economic development and attendant increase in human well-being. Indeed, there has not been a prolonged period of stabilization or decline in global material demand in the last 50 years. Rather, global resource extraction has grown rapidly in that time. Extraction reached 92 billion tons in 2017, compared with 27 billion tons in 1970.

Resources are very important in the economic development of each country in the world. Each country in the world has its own national strategy to manage, protect, exploit and use it in accordance with the needs of life, production, and sustainable development, in accordance with its laws. However, the population explosion, along with socio-economic development, the world's resources are facing the risk of exhaustion. Everyone knows that once the natural resources accumulated for billions of years are

exhausted, there is no way to reproduce them, especially fossil energy sources. The world is facing

worries once the oil fields, natural gas fields, coal are exhausted, how mankind will manage to sustain life.

According to the Ministry of Agriculture and Rural Development (2018), Vietnam has over 39 million hectares of natural land, the area of land used for socio-economic purposes is 18,881 million hectares, accounting for 57.04% of the fund natural land, of which agricultural land accounts for 22.20% of the natural land area and 38.92% of the land area being used. There are still 14,217 million hectares of unused land, accounting for 43.96% of the natural land fund. The special location and topography make the Vietnamese soil have a common nature of the humid tropics but it is very diverse and clearly differentiated from the plains to the high mountains, from the North to the South and from the East to the West. There are 14 groups of land in the country: Sand dunes and coastal sand: 502,045 ha; Saline soil: 991.202 ha; Acid sulfate soil: 2,140,306 ha; Alluvial soil: 2,936,413 ha; Mud and peat: 71,796 ha; Poor soil: 2,481,987 ha; Red and gray-brown soil in semi-arid areas: 34,234 ha; Black soil: 237.602 ha; Yellow soil: 15,815,790 ha; Red yellow humus soil on mountains: 2,976,313 ha; Humus on high mountains: 280,714 ha; Valley land due to slope products: 330,814 ha; Soil eroded soil and gravel: 505,298 ha; Other land types and land not surveyed: 3,651,586 ha (According to the Ministry of Agriculture and Rural Development; 2018). In the process of socio-economic development, soil pollution has occurred. According to the Ministry of Natural Resources and Environment (2018) in the announcement of the 2018 national environmental status report, the causes of soil pollution are determined as follows:

Pollution Soil using chemical fertilizers: using fertilizers not in accordance with agricultural techniques, so the effectiveness of fertilizers is low, over 50% of nitrogen, 50% of potassium, etc. surplus directly or indirectly polluting the soil environment. Inorganic fertilizers belonging to the physiological sour group such as K_2SO_4 , KCl, superphosphate have acid residues, acidify the soil, deplete the alkaline cations and appear many toxins in the soil environment such as Al^{3+} , Fe^{3+} , Mn^{2+} ions, soil bioactivity and crop yield.

Pollution of plant protection drugs: plant protection drugs have characteristics very toxic to all organisms; long-term residues in the soil-water environment; undifferentiated toxic effect, that is, kills

all harmful and beneficial organisms in the soil environment. According to the research results, at

present, although the amount of pesticides used in Vietnam is small, an average of 0.5-1.0 kg/ha/year, however, in many places Detected pesticide residues in soil.

Pollution of waste into the soil environment by industrial activities: the results of several surveys show that the concentration of heavy metals in the soil near industrial parks has increased in recent years. For example, in Phuoc Long industrial (Binh Duong province) cluster, the Cr content is 15 times higher than the standard, Cd is 1.5 to 5 times higher, as is 1.3 times higher than the standard.

Along with the land, the excessive use of fossil resources is also a big problem for Vietnam. Vietnam is facing a big challenge as the energy demand is increasing while the environmental constraints are getting tighter. This, on the one hand, pressures on ensuring energy security for the country, on the other hand, pressures the economy to mobilize sufficient investment capital for the energy sector. Not only that, the fossil resources that are mainly used and exploited to provide energy for the country are also increasingly exhausted. Meanwhile, renewable energy sources such as wind, solar, biomass or tide of Vietnam are considered to be plentiful but mainly still is potential form.

The pressure on energy sources from Vietnam's fossil resources is increasing as the supply is exhausted. According to the Ministry of Natural Resources and Environment (2018), if the current exploitation rate is maintained, Vietnam's oil reserves are only sufficient to exploit for about 34 years; natural gas has only 63 years and coal has only been exploited for 4 years while this is the main source of input for Vietnam's economy.

The degradation of natural resources is taking place at a serious level, in which it is impossible not to suffer from the exhausting water resources. The process of urbanization, agricultural activities, industry and climate change are increasingly putting pressure on volume and quality of water resources. As a result of climate change, winter precipitation and ice have reduced the availability of freshwater supplies that can be processed. In fact, nearly 70% of the earth's surface is covered by water, but only 2.5% of that water is pure water suitable for consumption (UNICEF, 2019). Therefore, water is an important resource that we need to keep first.

In Vietnam, by the end of 2019 and early 2020, the drought situation is extremely severe in some provinces in the Mekong Delta. Record of the fact that

saline water has encroached 100km into the mainland. According to the rating of the Southern Institute of Water Resources Research (2019), with updated flow developments to the delta so far, the possibility of historic salinity drought is huge. As of mid-February 2020, the Mekong Delta region has 12/13 provinces and cities affected by drought and salinity. Compared to the drought, historic saltwater intrusion in 2016, 600,000 people in the Mekong Delta lack water for domestic use, 160,000 hectares of saline soil, causing damage of more than VND 5,500 billion, this year's drought and salinity are considered premature more than 1 month and the risk of exceeding the threshold in 2016 is entirely possible (Ministry of Agriculture and Rural Development of Vietnam). Ministry of Agriculture and Rural Development said, from 8-16 February 2020, saline intrusion in the Mekong Delta is in the period of rising up according to the tide in the middle of January lunar calendar. This is the highest saline intrusion since the beginning of the dry season. Forecasting from 21 - 27 February 2020, the saline boundary in the Mekong Delta will reach the highest depth of about 55-60km; from 7-15 March 2020 saline intrusion is at very high level, the salt boundary is 4g / liter (four thousandths) deep inland about 80 km, 5 km deeper than the middle saline intrusion in mid-February 2020.

5. Reducing the Pressure of Population Growth on the Environment

5.1. Thoroughly Implement the National Population Policy

Population aging in Vietnam has had a significant impact on all sectors of the economy. This reality requires the Government to direct and create conditions for all Vietnamese people to lead a healthy, active and full life throughout their lives. Although the main concern is the elderly aged 60 years and over, population aging has affected all other population groups. Therefore, adaptation to population aging is not only meeting the expectations and needs of the elderly but also requiring a more holistic approach to address the effects of population aging on the whole other population groups. In practice, however, Vietnam's current policies focus only on supporting and addressing the issues of the elderly and have not taken into account the profound effects of aging on the whole society and the younger group. Therefore, a more comprehensive approach to population aging,

both addressing the current issues due to the impact of population aging on both the

social development but will be more responsible for that development.

elderly and young and the elderly, is both appropriate. With the socio-economic development plan preparing the old society in the future, the Government will make positive progress and results.

Although the population of Vietnam growth in the end 20th and first 21st centuries has rocketed, it can be slowed, stopped and reversed. We need to take many actions to reduce the impact of those of us already here - especially the richest of us who have the largest environmental impact - including through reducing consumption to sustainable levels, and systemic economic changes to ensure global justice within the environmental limits of our planet.

One of the most effective steps we can take to achieve both goals – reducing our environmental impact and ending population growth – is to choose the smaller family size, and empower those who can't make that choice freely to do so. In the context of Vietnamese society entering the period of industrialization, modernization, globalization, world economic integration, many great changes have occurred, inevitably making the traditional family size no longer available adapt to new social situations. The market economy, the introduction of foreign cultures have made society change day by day. Population growth can be slowed, stopped and reversed through actions that enhance country justice and improve people's lives.

According to the annual census data of Vietnam, the size of the Vietnamese family has decreased from an average of 5.22% per household in 1979 to 4.61 persons per household in 1999 and up to the present time. This may be less, although no new investigation results have been announced.

Household sizes in different regions are also influenced by intellectual levels, socio-economic characteristics, customs, and cultural characteristics. In the Red River Delta region, the average household size is 4.1, the lowest in the country. The Northwest region has the highest average household size, with more than 5 people per household, of which there are a number of ethnic groups in the Northern Uplands with a much larger household size than the average household size of the whole country (Vietnam General Office of Population, 2019). The reality in Vietnam shows that in areas where the size of the household is small, the quality of life, and social awareness is improved. Family members not only enjoy the fruits of

Vietnam (2009) has identified “sustainable development” as a national strategic goal. Now and in the future, when fertility has decreased sustainably below-replacement fertility, in order to achieve sustainable development goals, the focus of population policy needs to change to adapt to the new development context such as improving the quality of human resources, developing high-value jobs to take advantage of the golden population structure; develop the education and health systems in line with the rapidly changing population structure; old population and social security; imbalance in sex ratio at birth and consequences; migration and quality of life, etc. The demographic factor needs to be addressed in close relationship with sustainable development. The shift in focus of digital policy, from family planning to population and sustainable development, is an urgent need now.

The representative of the United Nations Population Fund, Mr. Le Bach Duong (2018) also said that the reduction in fertility, mortality, and increasing life expectancy of the people of Vietnam made Vietnam an aging population, as of 2011. Vietnam is one of the countries with the fastest population aging in the region. These demographic changes require Vietnam to have a new approach in population policies. It is from a national strategic development perspective, not just limited to aspects such as family planning or health care for the people. Vietnam is currently in the moment to consider and determine which direction to ensure sustainable development.

5.2. Adjust the Migration Process, Ensure a Reasonable Population and Labor Distribution and to Build a Comprehensive Solution for Uniform Economic Development in the Countryside

Over the past two decades, labor migration has emerged as an important driver of economic growth and development in both the out-country and in-country countries in the ASEAN region. It is estimated that there are 20.2 million migrants from ASEAN countries, of which nearly 6.9 million migrated to other countries in the region (Benjamin Harkins; Daniel Lindgren & Tarinee Suravoranon, 2018). Like many other countries experiencing rapid socio-economic development, over the past 30 years, Vietnam has witnessed a rapid increase in the flow of internal migrants. International and Vietnamese studies also

show a dialectical relationship between migration and development. Migration is both a

driving force and a result of a country's socio-economic development. In particular, migration has contributed to addressing the problem of labor redundancy at the place of departure, meeting the demand for human resources at the destination. However, migration has also caused the "stasis" population. In many provinces and cities nationwide, the population has surpassed 5 million people. Particularly, the two big cities of Hanoi and Ho Chi Minh City have a population of about 10 million people (Vietnam General Population Office, 2019).

According to the population census, (General Statistics Office, 2019), the urban population is 33,122,548, accounting for 34.4% of the country's total population. The average annual population growth rate in urban areas in the period of 2009-2019 is 2.64%/year, which is more than twice the national average annual population growth rate and six times higher than the population growth rate. The average number of rural areas in the same period. The average urban population growth rate in the period of 2009 - 2019 is lower than the urban population growth rate in the period of 1999-2009 (3.4%/year). However, migration contributes to 1.2 million people in urban areas, accounting for 3.5% of the urban population.

Together with natural population growth, mechanical population growth is putting great pressure on Hanoi. The population of Hanoi in the past 10 years has increased by 1.6 million, particularly in the urban area, it has increased by over 1.3 million, most of which is the mechanical increase from immigrants. According to the Institute of Population and Social Affairs (2019), an average of 120,000 babies are born every year, plus the rate of immigration to Hanoi is constantly increasing by about 80,000 - 100,000 people/year, Hanoi is facing the problem of ensuring a reasonable population size. As many as 32 wards and communes in Hanoi account for over 30% of the population of that ward. These wards and communes are mainly located in Cau Giay, Thanh Xuan, Ha Dong, Nam Tu Liem, and Bac Tu Liem districts (Hanoi), where urbanization is very strong and mechanical fluctuations are abnormal. "The new urban areas provide shelter for migrants, but this is also a factor that causes traffic to be constantly overloaded, arterial roads to be clogged during working and commuting hours, along with other environmental and urban management issues" (Population and Social Affairs

2019). Along with Hanoi and Ho Chi Minh City has population density and

population growth rate is the highest in the country, mainly due to free migration. In 10 years, the population increased by 1.8 million compared to 2009. The average population growth rate in the period of 2009-2019 was 2.28% / year, doubling the national rate of 1.14% (General Statistics Office, 2019)

The results of the National Internal Migration Survey (2015) show that, nationwide, nearly 30% of the 4,969 surveyed migrants said that they moved because of "finding a job at a new place", 11.5% surveyed migrants said to "have better working conditions", 11.9% surveyed migrants said that to "convenient for work" and 12.6% surveyed migrants said that to "improve their lives". Therefore, accommodation, working conditions, convenient work, and improvement of life are important factors leading to the current migration to big cities in Vietnam.

With about 70% of the population living and manufacturing in rural areas (General Statistics Office, 2019), the management of rural socio-economic development, employment issues, working conditions, and quality in rural areas plays a very important role and is one of the key tasks contribute to successfully promoting the construction of new rural areas, restricting migration to big cities.

Job creation is one of the important policies of each country, especially for developing countries like Vietnam. Lack of employment, no jobs or jobs with low productivity and income will not be able to help people to ensure a sustainable life and development. For people in rural areas, jobs are related to land, labor resources, tools and skills, and production capital. The above factors combine to form a strong impact on the lives of people (special is rural youth - the main object migrate to big cities). Employment for rural youth is therefore an important premise for the effective use of this labor force. The Resolution of the Seventh Conference of the Central Executive Committee, term X (2011) "Regarding strengthening the Party's leadership for the youth work in the period of accelerating industrialization and modernization" has clearly indicated the tasks: "Improving the quality of young workers, creating jobs, increasing incomes and improving the lives of young people".

Currently, young workers in the non-state economic sector account for 87.7%; FDI sector is 4%

(an increase of 4 times compared to 2000) (General Statistics Office, 2019). The professional and technical

qualifications of young people participating in economic activities are increasing. Specific, the labor force of young people with professional secondary qualifications in 2008 was 4.1%, 2009 was 6.2%, in 2012 was 7.5%; similarly over the years, college and university degrees are 5.5%, 7.8% and 8.7%. On average, there are about 70 to 80,000 college students every year, 143 to 160,000 graduate students complementing the youth workforce. This is a great potential source of our country in promoting the country's internal resources for development.

In addition to some achieved results, labor and employment issues of rural youth are still in an unstable situation, self-conscious to increase. The survey data on labor and employment of rural youth (General Statistics Office, 2019) shows that there are currently over 22.5 million young people in the country, accounting for 26% of the population, 33.7% of the social labor force of which 75% are rural youth. In the past few years, agricultural land has been reclaimed to build industrial parks, export processing zones, urban areas, and public works, etc., so much that rural youth are increasingly unemployed.

Lack of jobs, many young people in rural areas play leisurely, indulge in gambling, alcohol, drug addiction and other social vices. This is a group of people who are considered to be at high risk of social evils. Facing employment difficulties, many people moved to cities and urban areas to find livelihoods. However, the vast majority of jobs are not stable, income is precarious, because of low education, limited social relations, little access to and use of modern labor materials, they only can do simple jobs by case with low wages, difficult life, temporary, etc. Sociological survey data on labor and employment with young labor in rural areas in the village, the number of people without vocational training accounts for 68.4%, the number of people without land for production and business is 53.1%, the type of difficulties to access the capital is 22.3%, lack of production experience is 26.5%, lack of information on labor market is 23.3% (Youth Research Institute, 2019).

To create jobs and improve the quality of life, the State and local governments must implement the following specific solutions:

Firstly, well-implementing policies on labor, employment, wages, and income to encourage and promote the highest capacity of workers. Ensuring

harmonious labor relations, improving the environment and working conditions. Promote

vocational training and job creation. Improving the quality and efficiency of activities of bringing Vietnamese people to work abroad. Support vocational training and job creation for policy beneficiaries, the poor, rural workers and urbanized areas.

Secondly, localities in rural areas need to develop employment programs on the basis of development production, socio-economic programs in the area. The program is built at three levels: province, district, and commune; linking production plans with job creation plans for rural youth.

Thirdly, the Government should continue to improve policies and focus on vocational training for rural youth, helping them improve their scientific and technical knowledge, management skills, and market knowledge to select suitable jobs. Encourage vocational training at enterprises and production facilities. Attention will be paid to vocational training on industry and services for young people and rural students who have just graduated from high schools to help them prepare conditions for job transfer to non-agricultural fields such as industry, handicrafts, and rural services, sales, etc. In each locality, it is necessary to make efforts and creativeness to find suitable vocational training models to avoid costly and wastefulness.

Fourthly, focus on educating organizational awareness, discipline, labor skills, and skills foreign languages for young people in foreign-invested enterprises and young people working under contracts, term abroad; at the same time, take measures to manage, educate and help rural youth.

Fifth, mobilize from many resources to increase capital National employment support fund for rural youth; invest appropriately budget to expand vocational training network, universalize youth for young people, and support capital for young rural entrepreneurs. There is a preferential credit policy for vocational training institutions, especially high-tech occupations. Invest in developing infrastructure of labor market services, preferential credit for rural youth loans to create jobs. Creating a favorable environment and encouraging all economic sectors to invest in rural areas to develop production, create new jobs and increase incomes for rural youth to improve their lives.

Sixthly, develop a national communication strategy for career orientation and employment for rural young people, focusing on information on the labor market, providing them with reliable labor

statistics, jobs to localities to have a basis for developing vocational programs for rural youth, enabling them to have access to information and opportunities for finding jobs fully and accurately. Expand the forms of career counseling, capacity building as well as the efficiency of employment service centers for rural youth.

Seventhly, perfect the social security system from the grassroots. The social security system needs to focus on policies for rural workers who lose their jobs, lack of jobs due to land acquisition or are exposed to inadequacies when building industrial parks and urban areas, urbanization for redundant workers and social insurance policies, especially unemployment insurance.

5.3. Educating, Raising Awareness, Knowledge about Environment, Awareness, and Responsibility of Environmental Protection for the Community

Currently, indiscriminate waste discharge occurs in many places, including big cities. This is really a difficult problem. This issue may not be new, because, for many years, it has been proposed to dissect, discuss, find solutions, but in fact, seems to have not improved much. Community awareness is an issue that needs to be addressed. Specific cause:

Firstly, people's consciousness: in life, we still come across cases because of "convenience" that water bottles, plastic bag, etc. can be thrown into the street without hesitation; also "handy", household waste sometimes is thrown right into canals, sewers; or "handy", the milk boxes has just finished drinking, paper towels just used, etc. can also be thrown immediately on the roof next door. Even in public places, there are trash bins available but it does not need to care, people can throw waste right at the tree, under the chair or throw right near the trash.

It is worth mentioning that this action is taking place at all ages, even of those who are government officials, pupil, and students. A passing festival is littered with rubbish, sweat and even the hard labor of workers who have to "accept". A review, farewell of the school year or a performance program, sports festival at the school, people also caught pieces of paper, bottles, plastic cups littered indiscriminately. It seems to have been the habit of many people formed by a lack of environmental protection awareness and

also by being irresponsible to those around them, to society, to the community. The indiscriminate littering affects the beauty, pollutes the environment, causes socio-economic losses, and seriously affects

human health. And then the consequences of that lack of consciousness are the people we have to suffer.

An example of the consequences of indiscriminate littering is in October 2018, on Nguyen Huu Canh Street (Binh Thanh District, Ho Chi Minh City) was flooded by a rain of less than 1 hour with rainfall is 40mm, while before that, the heavy rain lasted more than 4 hours, with a weight of 125.2mm, the road was clean. At that time, Ho Chi Minh City was testing a super pump by Quang Trung Industrial Group to prevent this road from entering.

The cause, when tested, is that the entire sewer line on both sides of the road is clogged, the pump does not absorb water causing flooding. Initially opening 4 manhole covers in this area, there were many bottles, plastic bags, styrofoam, etc. sealed off the manhole (each hole nearly 1 cubic meter of garbage).

Secondly, irresponsible businesses, bureaucratic managers, lack of close coordination: Due to the goal of maximizing profits, many businesses have violated the exploitation process, contributing to significant environmental pollution. On the other hand, the wastewater treatment system in some industrial parks has not operated effectively, polluted domestic wastewater is continuously discharged into rivers and lakes, which pollute the natural water source. Besides, it is the bureaucracy and lack of strict management in environmental protection of the state that is also helping to destroy the environment. In addition, the increasing number of private vehicles in our country also contributes greatly to polluting the atmosphere.

Thirdly, limitations and shortcomings in environmental protection: According to statistics of the Ministry of Justice of Vietnam (2019), there are currently about 300 legal documents on environmental protection to regulate the behavior of fish, organizations, economic activities, technical processes, processes using raw materials in production, etc. However, the system of these documents is still incomplete, inconsistent, and lacking. In detail, the stability is not high, the status of newly issued documents has not been amended for a long time, thus limiting the effectiveness of individuals' and organizations' behavior economic activities, etc. in protecting the environment. The legal powers of environmental protection organizations, especially those of the Environmental Police force have not really been fulfilled,

not enough strong should limit operational efficiency to grasp the situation, detect and prevent violations of environmental protection. The legal basis and sanctions for the kinds of acts causing environmental pollution on crimes are still limited, not strong enough. In particular, there are very few cases of causing environmental pollution to be criminally handled, while other remedies such as forced removal from polluted areas, closure, and suspension of operation of establishments environmental pollution has not been applied much or has been applied, but the authorities are not resolute, so the “stubborn” business is also not effective. The authorities at all levels have not been fully aware and paid due attention to environmental protection, resulting in loose management and irresponsibility in environmental monitoring and supervision. In addition, propaganda and education on environmental protection in society is limited.

In order to effectively educate the awareness of environmental protection, synchronous measures must be implemented, specifically:

Propagating people to raise awareness about environmental protection, littering in the right places, not littering indiscriminately. Education and awareness-raising for children about environmental protection. In addition, the use of cleaning chemicals should be restricted when dealing with sewage clogging, as this would accidentally introduce a new hazardous waste into the environment, which will also poison the water. Using environmentally friendly microbiological active ingredients. Do not use plastic utensils in daily activities.

The State continues to improve the legal system on environmental protection, including sanctions that must be really strong to deter violators. In addition, it is necessary to synchronously build an environmental management system in factories and industrial parks according to international standards. Strict supervisory organization towards a better environment.

In the tourist areas, densely populated areas, large roads, etc. should add more trash and public toilets.

Strengthen the work of grasping the situation, inspecting and supervising the environment. Improve the professional capacity of staff in charge of environment work and equip modern technical facilities to effectively serve these forces.

Finally, it is necessary to step up the propaganda and education about the environment in the whole

society, creating a change and raising awareness and awareness of observing the law on environmental protection.

6. Conclusion

The environmental crisis is rapidly accelerating, yet much of society and academia still ignores or denies that a key driver is an overpopulation (Helen Kopnina & Haydn Washington, 2016). The population explosion not only creates pressure on resources but also links the mining processes that deplete them quickly. The concept of the reciprocal relationship between population and environmental conditions is complex, diverse and contains many variables. The environment is an important and decisive issue in the development and evolution of mankind.

In the dialectical relationship between population and development, environmental issues cannot be separated. Population growth, economic development increase living standards, and depletion of resources, environmental degradation, land loss, deforestation, desertification as a result of population growth. The UNICEF (2014) report wrote: “The world’s population growth has added to the seriousness of our planet’s ability to protect life”.

Vietnam’s big cities are facing enormous pressure from population growth, in which, environmental pollution is becoming more and more serious. This is something we need to discuss and act on. The population is not the only key problem humanity faces, and we have here only touched on its terrible twin – overconsumption. However, the two are entwined and must be solved concurrently. However, while much of society and academia continue to ignore the key driver of overpopulation, we believe any chance of reaching an ecologically sustainable future is vanishingly small.

Is it time for us to choose one of two possibilities: the large population or the prosperity and security of man? The basic element of socio-economic growth and development is the human resource, which always associates the population change in both quantity and quality. The goal of development is ultimately to improve the quality of life and meet the increasing needs of people. That goal can only be achieved when population size, population growth rate, population distribution and human resources are really appropriate and positively impact development.

Conflicts of Interest

The author declares no conflict of interest.

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