Climate Change Country Profile: Viet Nam

1. Country description

1.1 Geography

- Located in South-East Asia
- Borders China, Lao People’s Democratic Republic, Cambodia and East Sea
- Coastline: 3260 km
- Total land area: 329 314 km²

Figure 1. Map of Viet Nam

1.2 Demographics

- Population: 83 million in 2005
- Population density: 252 persons per km²

1.3 Economic and industrial development characteristics, etc.

- During the period 1990–2005, Viet Nam's gross domestic product (GDP) nearly tripled; GDP has increased by 7.5% per year on the average.
- Economic sectors as a percentage of GDP: agriculture, forestry and fishing (20.89%); industry and construction (41.04%) and services (38.07%)
- The five-year socioeconomic development plan (2006–2010) has a target of 7.5%–8.0% annual average GDP growth, broken down into 3.0%–3.5% in agriculture, forestry, and fisheries; 10.0%–15.0% in industry; and 7.2%–7.5% in service
1.4 Climate (climatic zones, trends in temperature and precipitation)

- Subtropical and tropical, hot and wet monsoon climate
- Based on climate conditions, Viet Nam can be divided into north and south
  - **North**: cold in the winter and hot and wet in the summer, average annual temperature of 22°C–24°C; coldest month (15°C–19°C); hottest month (32°C–34.4°C)
  - **South**: hot all the year round, with average annual temperature of 25°C–27°C; coldest month (21°C–26°C); hottest month (32°C–34.5°C)
- Viet Nam is often threatened by typhoons, storms, floods and salinity intrusion. On average, Viet Nam is hit annually by four to five typhoons.

2. Burden of climate-sensitive health outcomes

2.1 Data on current climate-sensitive disease burdens

Climate-sensitive diseases include heat-related diseases, vectorborne diseases, waterborne diseases, diseases from urban air pollution, and diseases related to extreme weathers such as floods, droughts, windstorms and fires.

In 2002, the Poverty Task Force, which is a joint effort of the Government and the World Bank, identified a range of human well-being losses that can emerge from natural disasters. These are:

- injury and loss of life, including economically active adults;
- illness after floods due to waterborne diseases, reduced food supply, lack of access to health care;
- loss of property and assets, including the family house (generally the single largest item of value), food stores, and boats and nets;
- loss of crops, affecting on-farm consumption, food security and income prospects;
- loss of livestock to disease and flood;
- destruction of transport, communication and electricity distribution infrastructure;
- damage to water control infrastructure (flood control and irrigation); and
- damage to schools and health facilities.

In recent years, Viet Nam has been facing increasing natural disasters, particularly typhoons and droughts. According to the National Hydro-Meteorological Forecast Center, there have been 34 droughts in the last 46 years (1960–2006).

In 2006, economic damages due to natural disasters reached US$ 1.2 billion. It is predicted that if the sea level rises one metre, Viet Nam will lose 12.2% of its total land area.
According to the Ministry of Health, the incidence of some environment-related diseases have been increasing recently: respiratory disease (78.8), rheumatism (14.89), hepatitis B (16.79), sore throat/angina diphtherica/adenoids/tracheitis (446.58), cholera (0.12), typhoid (56.08), diarrhoea (200.29), bubonic plague (0.6), malaria (29.64). Some diseases having a high rate of infection are diarrhoea, malaria, pneumonia, bronchitis, petechial fever and influenza.

2.2 Potential impacts of climate change on health burden, i.e. qualitative and quantitative projections of future health burdens.

Viet Nam’s Initial National Communication to the UNFCCC (Viet Nam, 2003) provided detailed predictions regarding climate change impacts in Viet Nam.

- The average temperature is estimated to increase 2.5°C in 2070. Inland average temperature (focus mainly on the highlands) will increase 2.5°C, meanwhile the average temperature of coastal area may increase 1.5°C.
- Annual average high and low temperatures are also expected to increase; and the number of days with temperature higher than 25°C will increase too. This will affect ecosystems, farming seasons, and human health.
- The north and the south areas are affected by the south-western monsoon but the seasonal rainfall amount decreases in July and August and increases in September, October and November. In the Centre, rainfall would increase with approximately 19% in the rainy season by 2070.
- The evapotranspiration rate will also increase due to increasing temperature. Because rainfall would be concentrated in the rainy season, rainfall in the dry season will decrease by 2070 in Central parts of Viet Nam and droughts would occur more frequently.
- Sea level in Viet Nam has increased 5cm within the past 30 years. Sea level is expected to rise about 9 cm in 2010, 33 cm in 2050, 45 cm in 2070 and 1 meter in 2100.
- Over the past years, the typhoons landed to Viet Nam in August in the north, in October in the Centre and in November in the south. But the typhoon season is observed to occur later and more southwardly in recent years.
- Climate change would lead to increasing the sea surface temperature in higher latitude region of Pacific Ocean. It will lead to more typhoons occurring in the north-west Pacific Ocean, affecting Viet Nam.
- In the next decades, sea surface temperature is predicted to rise, which would cause wind speed in typhoons to be sustained for a longer time. The typhoon intensity would thus be stronger, especially in "El Niño" phenomenon year.

Potential direct impacts
- Warmer climate would have adverse impacts on human health. Extreme weather would lead to some dangers threatening old people; people suffered from cardiac disease, mental disorder. Warming climate would change seasonal structure; warming winter in northern Vietnam would result in changes of biological rhythm of the people.
The increase of natural disasters such as typhoon, storm surge, strong wind, and heavy rain would threaten the life of people in many regions, particularly in coastal, mountainous areas.

Potential indirect impacts
- Many infectious diseases affected by global climate change – malaria, synaptic filariasis, dengue fever, Japanese encephalitis, arboviral diseases – are common in humid tropical regions.
- The increase of temperature would facilitate the growth and development of various viruses and insects - disease carriers. Therefore, the infectious diseases such as diseases in digestion and respiration system or viruses diseases easily spread, leading to increasing patients and death rate.

2.3 Information on particularly vulnerable populations.

Information is not available.

3. National programmes and projects

3.1 Programmes to reduce and/or mitigate greenhouse gas emissions

Short term (2000–2010)
- Improving efficiency of energy use and conservation
- Saving energy in enterprises
- Implementation of demand–supply management (DSM) programmes
- Effective energy use in buildings
- Development and use of renewable energy sources
- Energy saving in transport sector

Long term (2010–2020)
- Improvement of lighting efficiency
- Implementation of demand–supply Management (DSM) programmes
- Effective energy use in buildings
- Improvement of energy efficiency of enterprises
- Economical use of energy in transport sector
- Exploitation of new energy sources

3.2 Climate change related studies and projects, including their roles in the Second National Communications

- Viet Nam Initial National Communication to the UNFCCC (2003)
- Viet Nam Second National Communication (2006/2007)
• Viet Nam Coastal Zone Vulnerability Assessment (1994–1996)
• Livelihood Improvement in Central Coastal Provinces Project (2007 - under reparation)
• Capacity Building for Adaptation to Climate Change (CACC) (2002–2005)
• Enhancing Human Security, Environment and Disaster Management Project
• Viet Nam Disaster Reduction Programme, UNDP
• Disaster Preparedness and Climate Change in Viet Nam (2003-2005)
• Socio-Economic and Physical Approaches to Analyzing Climate Change Impacts in Viet Nam (1996–1998)
• The Natural Disaster Mitigation Partnership (NDM-Partnership)

3.3 Further data and research needs on potential health impacts of climate change

**Potential health impacts of climate change**

- Extreme weather events (El Niño-Southern Oscillation, temperature, floods)
- Vectorborne diseases
- Diseases related to air pollution
- Diarrhoeal diseases

**Data needed**

- Temperature, humidity, precipitation, living conditions, food sources and hygiene practices
- Survival of pathogens in the environment, contamination of water sources, contamination of food sources, rate of person-to-person contact
- Consumption of contaminated water, consumption of contaminated food, contact with infected people
- Incidence of mortality and morbidity attributable to diarrhoea

3.4 Current and expected programmes and activities for adaptation to current and projected climate-related health burdens

- Accelerating the implementation of the programme, "Eliminating hunger and reducing poverty", which is designed to improve the socioeconomic standard of people, especially of those in remote areas with economic difficulties. Meanwhile, improving public knowledge on family sanitation and culture through national programmes such as "Clean water and environmental sanitation", "Garden Pond – Breeding facilities", "Biogas", etc.
- Establishing green, clean and beautiful areas (parks, green trees, springs, flowers etc) in densely populated areas; meanwhile, setting up house-building criteria, considering adaptation measures by individuals.
- Promoting public awareness on climate change so that people take adaptation measures for themselves.
• Implementing strict quarantine at borders and airports to prevent infection and disease transmission.

4. Institutional organization

Viet Nam signed the UNFCCC on 11 June 1992 and ratified it on 16 November 1994. The Kyoto Protocol was signed on 3 December 1998 and was ratified on 25 September 2002.

The Ministry of Natural Resources and Environment has been assigned by the Government of Viet Nam to be the National Focal Agency for implementing the UNFCCC and Kyoto Protocol and is the managing government institution for all climate change activities.

Other ministries involved in climate change activities are: Ministry of Foreign Affairs, Ministry of Finance, Ministry of Planning and Investment, Ministry of Science and Technology, Ministry of Industry, Ministry of Agriculture and Rural Development, Ministry of Training and Education, and Ministry of Trade.

5. Issues and challenges

Critical issues and challenges that the country faces in relation to mitigation and adaptation to climate change to reduce health impacts are:

• disasters and/or weather extremes and disease forecasts;
• methods and tools for assessment of vulnerability and adaptation (V&A) of the health burdens to climate change;
• capacity to control and treat disease epidemics;
• national policies and strategies for adaptation; and
• resources for V&A in health sector.