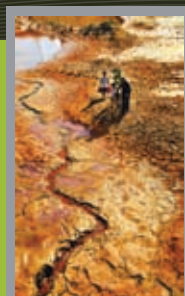


Ha Tinh Assessment Report on Climate Change



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Ha Noi, 2009



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Foreword

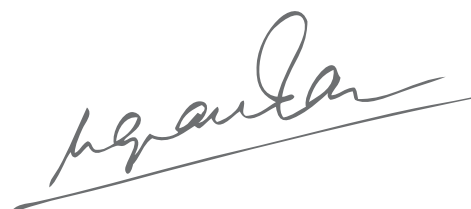
ISPONRE's Director General

Climate change is affecting the lives of humans across the globe, including in Viet Nam. Together with temperatures increase and the sea level rises in the last decades, Viet Nam is likely to be one of the countries most adversely affected by climate change.

Locating in a coastal area of Central Viet Nam, Ha Tinh province experiences severe climatic conditions, including extreme weather events, such as storms, hot dry westerly winds, drought, heavy rain, and floods. Climate change is likely to impact seriously on agriculture, fisheries, forestry, biodiversity, water resources, and other key economic sectors in Ha Tinh.

The Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE), under the Ministry of Natural Resources and Environment (MONRE), has, in collaboration with national and international experts, been primarily responsible for preparing the Ha Tinh Assessment Report on Climate Change, within the technical assistance framework of the United Nations Environment Programme (UNEP). This is the report typically developed under the guidance of the UNEP, with a view to providing an overview of climate change, analyzing climate change scenarios, assessing potential impacts of climate change on all sectors, and outlining strategies and measures for dealing with climate change in Ha Tinh province. The main contents of the report include: (i) Natural and socio-economic features of Ha Tinh; (ii) Natural disasters and impacts on Ha Tinh; (iii) Overview of climate change in Ha Tinh; and, (iv) Climate change impacts, mitigation and adaptation policies and measures for climate change in Ha Tinh. The purpose of the report is to provide some basic information and knowledge of climate change to policy-makers, environmental researchers and managers, and other professionals working in climate change related fields.

ISPONRE wishes to express its sincere thanks to UNEP for its financial and technical support, and to national and international experts and relevant agencies and organizations for their contributions to the development and refinement of the report.



Dr. Nguyen Van Tai

Director General

Institute of Strategy and Policy on Natural Resources and Environment

November 2009

Foreword

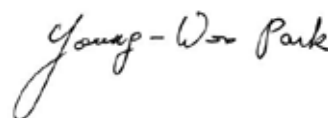
UNEP'S Representative for the Asia and the Pacific

The United Nations Environment Programme (UNEP) is mandated to regularly assess major environmental developments and trends. This mandate is implemented through the Global Environment Outlook (GEO) process, which involves global, regional, subregional, national and city-level assessments. The GEO process is participatory and consultative, with capacity-building at its core. This results in scientifically authoritative information for environmental management and policy development tailored to a wide target audience. The Ha Tinh Assessment Report on Climate Change is one of the outputs of this capacity-building programme, conducted by the Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE), and Ha Tinh Provincial Authority. The purpose of the report is to assess climate change impacts, to inform decision makers so that they understand the need for urgent action, and to mobilize public awareness and participation.

The Report highlights the trend in observed climate during the past 100 years in Ha Tinh Province, outlines future scenarios, and also includes the potential impacts of projected regional and local climate change on water resources, aquatic products, forestry, biodiversity, agriculture and other key economic sectors. It also reviews the vulnerability of ecosystems that are likely to be at risk from climate change. Ha Tinh is one of the North Central coastal provinces of Viet Nam, occupying about 1.8% of the total area of the country. Agro-forestry is an important socio-economic activity, with total production in 2006 valued at 6,424 billion VND (US\$359 million), and an average annual GDP growth rate of 15.63% in the period 2001-2006. Most coastal provinces in Viet Nam are affected by tropical low pressure, cyclones and storms. Over the past 50 years, 47 storms have affected Ha Tinh, extending from Quynh Luu (Nghe An) to Le Thuy (Quang Binh), of which 18 storms hit the province directly. Peak storm frequency has been reported in August and September (54%), followed by in July and October (30%). Between 2000 and 2008, the total economic loss suffered by the Province due to infrastructure damage from tropical cyclones has been estimated at up to 2,697 billion VND (US\$150 million).

Based on the scenarios developed, under the A1FI emission scenario, the rise of surface air temperature in Ha Tinh Province during the 2050s and the 2090s is projected to be in the range of 1.4-1.8°C and 3.5-4.2°C respectively. Total rainfall during the rainy season in Ha Tinh Province is projected to increase by 5-8% by the 2050, and 13-19% by the year 2100, whereas total rainfall during the dry season is projected to decrease by 1-5% by the year 2050 and 3-12% by the year 2100. Sea level rise along the Province's coastline is projected to be about 30 cm by the year 2050 and 65 cm by the year 2100. This translates into a rise in sea level of 6-7cm every decade, or 0.6-0.7cm every year. Finally, particular recommendations are made regarding coastal traffic, which needs to monitor and take into account the projected sea level rise. Mountain infrastructure, especially the North-South railway, will be at risk from increased flooding, flash floods and associated landslides in the mountain areas in the South West. All mineral extraction and industrial production in the coastal plain would suffer from an increase in storm frequency, flooding and the rise in sea level. The vulnerability of all socio-economic activities to climate change, especially the coastal regions is likely to increase in the future.

UNEP's Medium-term Strategy (2010-2013) directs the organization to strengthen the ability of countries' to integrate climate change responses into their national development processes, supported by scientific information, integrated climate impact assessment and local climate data. I believe this report responds to this mandate and provides important information and policy options for the government of Ha Tinh Province, Viet Nam, through MONRE, to help sustain the quality of life and livelihoods of the province's residents.



Dr. Young - Woo Park
Regional Director and Representative
United Nations Environment Programme
Regional Office for the Asia and the Pacific
November 2009

Acronyms

CC	Climate Change
CMHE	Center for Meteorology, Hydrology and Environment
GEF – SGP	Global Environment Facility’s Small Grants Programme
GHG	Green House Gases
GEO	Global Environment Outlook
IPCC	International Panel on Climate Change
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
IMHE	Institute of Meteorology, Hydrology and Environment
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Natural Resources and Environment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP/ROAP	United Nations Environment Programme - Regional Office for Asia and the Pacific

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