

# ASSESS THE PERCEPTION OF CLIMATE CHANGE STUDENTS AT HANOI METROPOLITAN UNIVERSITY

**Nguyen Xuan Trinh**

*Ha Noi Metropolitan University*

**Abstract:** *The main cause of climate change is believed to be an increase in activities that generate greenhouse gas emissions, over-exploitation of greenhouse gas sinks such as biomass, forests, ecosystems, etc. other marine, coastal and inland ecosystems (mainly CO<sub>2</sub> and Methane CH<sub>4</sub>). Greenhouse gas emissions cover the earth and will trap the sun's heat. This leads to global warming and climate change. The world is warming faster than at any other time in recorded history.*

**Keywords:** *Climate change, greenhouse gas (greenhouse gas: CO<sub>2</sub>; CH<sub>4</sub>; CFC; ..) ecological system fossil fuel.*

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Email: nxtrinh@hnmu.edu.vn

## 1. INTRODUCTION

Step Into the XXI century, As the technology grows like stormily, the industry is promoted, bring the nations a huge profit. Therefore, the nations have developed the industry to achieve national interests, which have forgotten the interests of all mankind. By the way, mankind faces a series of survival challenges, one that challenges the environment and climate change. Earth's climate change is the change of the climate system including the armament, hydrosphere, biosphere, lithosphere, and cryosphere at present and in the future by natural and man-made nuclei in a certain period. Measured in records or millions of years. A sea changes can be a change in military weather or a change in the classification of events around a mean. Climate change may be limited to a certain region or may occur globally. In recent years, especially in the policy environment, climate change often refers to the current climate change, collectively referred to as global warming. The main causes of Earth's climate change are increased activities that generate greenhouse gases, over-exploitation of sinks and reservoirs of greenhouse gases such as biomass, forests, marine ecosystems, coastal areas and adjacent areas.

The change in the representative species, distribution and coverage of the vegetation can happen due to climate change, this is very noticeable. In any event, a slight climate change could lead to increased precipitation or snowfall and increased levels of warmth, leading to improved plant growth and subsequent uptake of more CO<sub>2</sub> from the air. Climate change is causing us to suffer a variety of consequences such as poverty, death, disease, education-related problems, flooding in plains, coastal landslides,...

Vietnam is a country located in the tropical monsoon region of Southeast Asia, with a long coastline and low riverine delta areas, the economy depends mainly on natural resources, Vietnam is therefore one of the countries seriously affected by climate change. To deal with this problem, many measures to improve the capacity to prevent natural disasters and adapt to climate change have been oriented quite early, especially for students and students (Ministry of Education and Training, 2012). This is an important group of subjects trained under the national education program with many subjects showing the natural-socio-economic-environment interaction in real life. However, in order to properly assess this group's understanding of the impacts of climate change, the need to choose an effective approach in the field of education is extremely urgent. Surveying, assessing students' awareness and learning programs about climate change phenomenon, the results obtained after the assessment survey help the author to have a specific orientation in the process of teaching students with specialisation its industry. Hanoi Metropolitan University is a multidisciplinary university. Therefore, scientific research projects and access to climate change of students in the school are also very interested.

## **2. CONTENT**

### **2.1. Research subjects**

Research on awareness and attitudes of students at Hanoi Capital University on climate change today. Freshman and senior students aged 19 -22 years old.

### **2.2. Research scope**

Space scope: Hanoi Metropolitan University

Research is limited to students of Education, Preschool, Economics, Tourism Culture, Foreign Languages, and Natural Sciences at Hanoi Metropolitan University.

Time range: from March 2019 - October 2019

Content limitations: Focusing on students' perceptions of climate change.

### **2.3. Research content**

Assess students' general knowledge about climate change.

Assess students' perceptions and attitudes about issues related to climate change: The level of interest and anxiety about the impact of climate change

- + Students' awareness about the responsibilities of sectors / fields for climate change
- + Students' expectations in climate change mitigation
- + The level of student participation in low-carbon activities

Proposing solutions to raise students' awareness about climate change.

### **2.3.1. Research purposes**

Assess students' perceptions, learning programs, and attitudes toward climate change.

Proposing some solutions to raise awareness about climate change for students.

### **2.3.2. Request**

Honest and objective data to properly assess the reality of students' perceptions. The proposed solutions must be suitable to the conditions of the school as well as the locality, and be highly practical.

## **2.4. Overview**

### **2.4.1 Scientific basis**

Climate change (defined by the Climate Convention) is directly or indirectly attributed to human activities changes the composition of the global atmosphere and contributes to natural climate variability in comparable time periods. Climate change is "a change of climate that is either directly or indirectly human activities that change the composition of the global and external atmospheres which are automatically variable of the climate. closely over a long period of time. Factors that can cause climate change to occur are changes in atmospheric radiation, including processes such as changes in solar radiation, deviations of Earth's orbit, mountain tectonics, tectonics, etc. continental drift and changes in greenhouse gas concentrations. Various environmental responses to climate change can enhance or reduce initial changes. Some components of the climate system, such as the oceans and ice caps, respond slowly to changes in solar radiation because of their high mass. As a result, the climate system may take centuries or longer to fully respond to external changes.

Global sea level change over the past several centuries has been estimated using tide gauges, measurements collated over long periods of time to give a long-term average water level. More recently, the altimeter - combined with the precise positioning of satellite orbits - has provided an improved method of measuring global sea level change. Scientists have observed, measured and found that the ice in the ice island of Greenland has lost a large amount, directly affecting the island nations or coastal countries. It is estimated that if the ice continues to melt, the sea level will rise by at least 6m by 2100. At this rate, most of Indonesia's islands, and many other coastal cities will completely disappear.

### **2.4.2. Reason**

Group of objective causes (due to the change of nature) include: changes of earth orbit parameters, changes in the continental - sea distribution of the earth's surface, variation in the sun's emission and the absorption of earth's radiation, volcanic activity. Group of subjective causes (due to human influence) stemming from the change of land use purpose and water source, the increase of greenhouse gas emissions.scientific review of the Intergovernmental Panel on Climate Change (IPCC) shows that the consumption of energy from burning fossil fuels in the energy production industry, industry, transportation, construction,... contribute

about half (46%) to global warming; tropical deforestation contributes about 18%; agricultural production is about 9%; chemical industries (CFC, HCFC) about 24%; The remaining (3%) is from other activities. In the context of climate change, man-made factors also affect the climate. The widely agreed scientific view of climate change is that "the climate is changing, and these changes are in large part due to human impact". The element management system in which there is a change in the main content of nature including the change in the activity of the sun, the orbit of the earth, the transition of the continents... also has a significant impact.

### **2.4.3. Expression**

Climate change manifestations include (IPCC, 2007):

Global average temperature increases due to global warming.

Sea level rise due to thermal expansion and melting.

With the use of mechanical measuring tools, scientists have determined sea level elevation through traces on coral reefs, coastal sediments, on the sea floor, and grains in rocks. Lime and archaeological remains near the coast. The most advantageous dating methods are the uranium-thorium and radiocarbon methods, while the cosmic nuclear dating method is sometimes used to determine the age of surfaces that have undergone a reduction in ink levels. Sea level has been rising at an average rate of 1.8 mm/year over the past century, and more recently, in the era of using altimeter satellites to determine sea level.

In the context of climate change, man-made factors also affect the climate. The widely agreed scientific view of climate change is that "the climate is changing, and these changes are in large part due to human impact." Changes in composition and atmospheric quality. Changes in the activity intensity of the atmospheric circulation, the water cycle in nature and other biochemical cycles.

[1] Earth's current temperature is causing species to disappear or be in danger of extinction. About 50% of plant and animal species will face extinction by 2050 if the earth's temperature increases by another 1.1 to 6.4 degrees Celsius. This loss is due to habitat loss to fallow land, deforestation and warming seas. Biologists have noticed that some animals have migrated to the poles to find habitats with suitable temperatures. For example, the red fox, which used to live in North America, has now moved to the Arctic.

Humans are no exception. Wasteland and rising sea levels also threaten our habitat. And when plants and animals are lost, our food, fuel and income sources are also lost. However, the increase in global average temperature and sea level rise are often considered as two main manifestations of climate change.

### **2.4.4. Consequence**

According to SOS Environment (2014), there are 10 terrible consequences of climate change including:

Climate change and increasing carbon dioxide levels are "challenging" our ecological system. It is estimated that about 50% of plant species face absolute risk by 2050 if the earth's

temperature increases by another 1.1 to 6.4 degrees Celsius. Habitat loss is caused by fallow land, deforestation and warming seas.

The ecosystem is destroyed, loss of biodiversity, war and conflict, economic impacts, disease, drought, storm and flood, the heat wave intense, glaciers and glaciers are shrinking, sea levels are rising.

A recent forecast by Climate Central (USA) shows that many coastal cities around the world, including Ho Chi Minh City, are at risk of being submerged by sea water earlier than previously forecast due to climate change. Ice at the poles melts with speed alarm.

Increasing temperature on earth causes sea level to gradually rise. Increasing the temperature causes the glaciers, sea ice or continental ice on the earth to melt and increase the amount of water that flows into the seas and oceans.

Each radiation pollution, erratic weather changes, heavy rain and wind, prolonged hot sun, smoke and dust signal ... have a great impact on human health, life expectancy is reduced, skin-related diseases, respiratory tract Cardiovascular disease is increasing.

#### ***2.4.5. The reality of education on climate change in Vietnam***

[2] Recognizing the enormous and serious impacts caused by climate change, the Prime Minister of the Socialist Republic of Vietnam has approved the National Target Program to respond to climate change (Decision No. 1670 / QD -TTg issued on October 31, 2017).

To implement the national target program to cope with climate change, the Minister of Education and Training approved the Action Plan to cope with climate change of the Education sector for the period 2016 – 2020 and decision 329 / QD- MOIT issued on 25/01/2014 on approving the project “Information, propaganda on response to climate change and disaster prevention in schools in the period of 2013-2020”.

University of Natural Resources and Environment is the only unit in Vietnam that has a bachelor’s degree program on climate change and sustainable development.

Ministry of Natural Resources and Environment, Central of Vietnam Association of Clean Water and Environment, Journal of Environment and Life organize contest "Climate change with life".

## **2.5. Research Methods**

### ***2.5.1. Data collection methods***

Information about the situation and changes of global climate change as well as in Vietnam through articles, the internet, ... especially the information that is regularly and continuously updated, the latest information.

### ***2.5.2. Sampling method***

[3] Students' knowledge and perceptions about climate change may depend on their age, gender, family characteristics, and specialized subjects of each faculty, so the selected sample should be representative. The number of classes selected for the survey is as follows:

Department	Course	Number of classes
Preschool	First year	1
	Last year	1
Students of Education	First year	1
	Last year	1
Economics	First year	1
	Last year	1
Tourism Culture	First year	1
	Last year	1
Foreign Languages	First year	1
	Last year	1
Natural Sciences	First year	1
	Last year	1
<b>Total</b>		<b>12</b>

Interviewed students and the results of the survey showed that: Students' awareness of the consequences of environmental pollution leading to the consequences of climate change is limited and unclear. From there, it is necessary to have a specific action plan to bring the message to the students of Hanoi Capital University in particular and students in general who need more attention and specificity. [5]

### 2.5.3. Interview method

Directly interview students using structured questionnaires. The questionnaire is built so that students can easily understand and fill out the information. The content of the Questionnaire covers the entire content of the study:

Questionnaire content	Target	Kind of question
<b>General information about the student</b>	Evaluate the factors affecting knowledge and student awareness	The multiple choice question
<b>General knowledge of students about climate change</b>	Assess students' knowledge	Comments / knowledge on climate change are made and the question is "true" or "wrong".
<b>Awareness of students on issues related to climate change</b>	Assess students' perceptions on issues related to climate change	Comments given and questions on a likert scale (5 point scale)

### 2.6. Methods of data analysis

Using SPSS software

- Calculate% of students who answer questions
- Calculate the average score of students by department, by course
- Correlation analysis and assessment of factors affecting students' knowledge and perceptions about climate change

[4] Data processing and analysis: Data were cleaned and entered using Epidata software. SPSS software was used to analyze the obtained data. Descriptive statistical analysis using frequency and proportion distributions for categorical variables. Classification of students' perception: Correct perception: Correctly answered  $\geq 75\%$  of the questions. Incorrect perception: Correct answer

### 3. CONCLUSION

Research topic on awareness and attitude of students at Hanoi Capital University about climate change in the current period. The study shows that the percentage of students with correct awareness about climate change is high, but awareness about the impact of climate change on health is still limited. In particular, the correct awareness of the groups of diseases caused by the impact of climate change such as mental health-related diseases, malnutrition, diseases that are available in the country and groups of people vulnerable to climate change such as people with a low standard of living, low socio-economic status, ethnic minorities, local people, etc. account for a low percentage. Measures to raise awareness about impacts of climate change on health for students should be implemented in the coming time, focusing on improving knowledge about health issues caused by climate change impacts and groups of people. [3]

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## KHẢO SÁT, ĐÁNH GIÁ NHẬN THỨC VỀ BIẾN ĐỔI KHÍ HẬU CỦA SINH VIÊN TRƯỜNG ĐẠI HỌC THỦ ĐÔ HÀ NỘI

**Tóm tắt:** Biến đổi khí hậu phản ánh sự thay đổi dài hạn về nhiệt độ và các hiện tượng thời tiết. Những thay đổi này là tự nhiên, nhưng kể từ những năm 1800, tác động của con người là nguyên nhân chính gây ra biến đổi khí hậu, chủ yếu do đốt nhiên liệu hóa thạch (như lượng khí thải gây hiệu ứng nhà kính bao trùm trái đất và sẽ giữ lại nhiệt của mặt trời. Điều này dẫn đến hiện tượng nóng lên toàn cầu và biến đổi khí hậu. Thế giới đang nóng lên nhanh hơn bất kỳ thời điểm nào khác trong lịch sử được ghi lại. than, dầu và khí đốt) tạo ra khí giữ nhiệt.

**Từ khóa:** Biến đổi khí hậu; khí gây hiệu ứng nhà kính (khí nhà kính: CO<sub>2</sub>; CH<sub>4</sub>; CFC;...) các hệ sinh thái. nhiên liệu hóa thạch