**Chapter 1**

**INTRODUCTION**

1. **Introduction**

This chapter is the fundamental of our study- the awareness of the impact of the global warming. It consists of the background of the study, problem statement, research objectives, research questions, definitions of terms used throughout the research, review of methodology, and organization of chapter.

**1.1 Background of the Study**

Global warming is a phrase that refers to the effect on the climate of human activities, especially the burning of fossil fuels, which causes emissions to the atmosphere large amounts of ‘greenhouse gases’, of which the most important is carbon dioxide (Houghton, 2005, p.1343).

**1.2 Statement of Problem**

One of the main causes of Global Warming is the Green house effect. Greenhouse Gases are released into the atmosphere due to the burning of fossil fuels, oil, coal and gas (Houghton, 2005). Based on our observations and experience, many Universiti Malaysia Pahang (UMP) students are suffering from the rapid changes in local climates. As a result, UMP students are easily exposed to flu and illnesses. Therefore, a case study such as this may help to discover the level of awareness among UMP students on the impact of global warming.

**1.3 Research Objectives**

Our research objective is:

* + 1. To identify if UMP students are aware of the impact of global warming.
  1. **Research Questions**
     1. Are UMP students aware of the impact of global warming in the world?
     2. Are UMP students aware of the impact of global warming in agriculture?
     3. Are UMP students aware of the impact of global warming on human health?
  2. **Definitions of Terms Used Throughout This Research**
     1. Impact: giving a vague idea of one thing to another.
     2. Global warming: an increase in the greenhouse effect resulting especially from pollution, thus causing an increase in the earth’s temperature and oceanic temperatures.

**1.6 Review of Methodology**

The methodology used in this survey was survey questionnaires. We distributed questionnaires to UMP students and collecting it back from them on the spot. The study was conducted in UMP, emphasizing on UMP students. The sampling was done on a number of 60 UMP students from six different faculties.

* 1. **Organisation of Chapter**

This chapter presents the background of the study, problem statement, research objectives, research questions, definitions of terms used throughout the research, review of methodology, and organization of chapter. Each subtopic is self-explanatory, and it provides an understanding on what this study is about, and further signifies the importance of this study.

**CHAPTER 2**

**REVIEW OF LITERATURE**

**2.1 Introduction**

In chapter 2, we discuss about articles of impact of global warming that had been published and accredited by researcher. These articles are related to the impact of global warming on the environment, agriculture, and infectious diseases. And they had been analyzed and synthesized by us and it serves as a primary source for our studies.

**2.2 The Impact of Global Warming On the Environment.**

Global warming is the most environmental problem the world faces nowadays. Houghton (2005) suggests that global warming is referred to the effects of human activities which cause the emissions of large quantities of ‘greenhouse gases’ and these gases will absorb the heat emitted by the Earth and keep it warmer. According to The Intergovernmental Panel on Climate Change, IPCC (IPCC citied in McMichael,et.al, 2006), the average temperature in the world is expected to be increasing within the range 1.4-5.8oC by 2100. As a result, global warming will generate unpredictable climate change throughout the world and bring negative impact on both human communities and natural ecosystems.

Firstly, global warming influences water cycle and results drought and flood. Such disasters will cause more deaths, misery and also economic loss (Houghton, 2005). Similarly, Lehner,et.al (2006) also agree and say that extreme floods and droughts can cause enormous damage to economy, ecology and life. Besides that, global warming has serious impact on human health in numerous ways. Houghton (2005) finds that the death rate of heat stress in the extreme high temperatures becomes more frequent. And indirectly, infectious diseases such as malaria may progressively increase due to climate change. Global warming also has impact on agriculture, especially crops production. Concentration of carbon dioxide and changes in temperature will affect on plant growth. Houghton (2005) claims that crop qualities and quantities will change under influence of global warming. But, the crop patterns will differ depending to the regions’ climate change.

As a conclusion, global warming is a serious global problem which it brings impact on both humans and environment. Thus, action by everybody is required to reduce the impact of global warming (Houghton, 2005).

**2.3 The Impact of Global Warming on Agriculture**

The rate of global warming is in the trend of acceleration for the past 14 years (Deng et. al., 2008). Studies have shown that global warming has brought several impacts on agriculture. A clear understanding on the consequences of global warming on agriculture is the central for us to develop strategies in predicting future changes and to have a better understanding in the progress of crop production.

The increase in the temperature, will most likely to cause a negative yield on crop. Alkolibi (2002) acknowledges that as temperature increases, along with low precipitation, would have induced evapotranspiration, which will reduce the soil moisture and damaging the soil, consequently lowering the crop yield. Similarly, wheat yield will too, gives negative yield in the future. According to Alkolibi (2002), wheat has a fairly high temperature tolerance. He further explains that wheat would no longer be susceptible of the continuous increase of temperature. Rice yield would have a negative production as well. This is because as the temperature increases, this will shorten the period of rice growth and leading it an early flowering (Butterfield and Morison as cited in Lal, 1998).

In a nutshell, the correlations between global warming and agriculture have been recognized by a lot. Its impact on agriculture, however, is still remains uncertain, despite there were numerous of studies that had been done on this matter.

**2.4 Impact of Global Warming in Human Health**

Some infectious diseases are caused by the global warming. There are three major infectious diseases that are caused by the global warming are yellow fever, dengue, and cholera (Shope, 1991). Both Khasnis et. al (2005) and Colwell et. al (1998) agree that climate changes have indirect effects towards human health, particularly diseases transmitted by mosquitoes. According to Shope (1991), both yellow fever and dengue are transmitted by the Aedes aegypti mosquitoes because they are caused by the same viruses of the family Flavivirdae. He further stresses that the maturation of mosquito larvae is rapid under warmer condition, signifying that the transmission of the diseases would also increase in a proportional manner.

Cholera is a known disease, which is a sudden rapid loss of salt and severe dehydration from one’s body due to nonstop watery diarrhea, caused by a bacterium- Vibrio cholerae serogroup 01 (Shope, 1991). As such, patients would have died if there are not any replacement for the loss of salts and water from their bodies. Shope also explains that the optimum temperature for the bacterium to grow is at 37°C, in that sense, with the increase temperature of earth, mankind will have a tendency to be suffering from such disease.

As a conclusion, we should be wary of our surrounding, with the increasing population of the mosquitoes, which have the tendency to transmit these infectious diseases to us. Mosquito control should be carried out by the authorities to prevent the epidemic disease from spreading. And we must try to prevent the global warming from getting much worse than what happens now.

**2.5 Summary of the Chapter**

The impact of global warming has covered a lot of aspects in our daily-basis, mainly to be seen on our environment, agriculture, and health. With each passing days that we are going through, so will the accumulation of the carbon dioxide given out each day, farmers are not able to harvest a satisfying amount of crop yield, and people are prone to get infected by infectious diseases. We are responsible to what we have done and hoping to find an effective solution to solve this problem,

**CHAPTER 3**

**RESEARCH METHODOLOGY**

**3.1 Introduction**

In this chapter, details are given about the instruments used to collect information about students’ awareness on the impact of global warming. This chapter consists of three parts – sampling method, instruments, data analysis, and summary of the chapter.

**3.2 Sampling Method**

The sampling was on a number of 60 UMP students from six different faculties in UMP. Five of both male and female students were selected from each faculty to participate in the study. We categorized our sample in this table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Faculty | Male | Female | Total |
| 1. | Faculty of Chemical Engineering | 5 | 5 | 10 |
| 2. | Faculty of Electrical Engineering | 5 | 5 | 10 |
| 3. | Faculty of Mechanic Engineering | 5 | 5 | 10 |
| 4. | Faculty of Technology Management | 5 | 5 | 10 |
| 5 | Faculty of Civil Engineering & Natural Resources | 5 | 5 | 10 |
| 6. | Faculty of Computer Science & Software Engineering | 5 | 5 | 10 |
|  |  |  |  | 60 |

**3.3 Instruments**

The researchers collected data by distributing survey questionnaire that contained information of the respondents such as gender, faculty, year and course and the researches collected the questionnaire back on the spot. The questions were divided into five sections:-

Section A: Dichotomous questions

Section B: Choose more than one answer questions

Section C: Ranks

Section D: Multiple-choice question

Section E: Liked-scale

Section F: Open-ended question

**3.4 Data Analysis**

All data obtained from the survey questionnaires was analysed and presented in this part. The analysed data was presented in statistical which was in the mode frequency and percentage. Data was analysed and presented by following these steps:

Step 1: the data obtained from dichotomous question, multiple questions, and liked-scales will be presented in bar chart.

Step 2: the data obtained from ranking questions and choose more than one answer questions will be presented in pie chart.

Step 3: the data obtained in open-ended question will be analysed and summarized.

Step 4: data and answers obtained from the survey questionnaire is transferred and arranged into a summary sheet.

**3.5 Summary of the Chapter**

From all data that we gathered, we analysed, summarized, recorded, and presented them in bar chart and pie chart, for further reference.

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