

# Awareness and Management Preparedness on Climate Change of Selected Higher Education Institutions in Oriental Mindoro

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**Abstract:** One of the major challenges school managers face nowadays is brought by climate change. In this study, awareness and management preparedness of school managers to issues related to climate change were documented. Descriptive method of research was employed with 73 school manager-respondents. The study used more than 50% of the school managers from the 13 Higher Education Institutions (HEIs) in Oriental Mindoro. Findings revealed that level of awareness among respondents was highest on the effect of climate change to food security, increasing incidence of diseases and sea level rise. On biological systems, extinction of some species, and significant role of aquatic environment to climate change mitigation were best known. Planting of trees was the best mitigation measure. The absence of organized response team and absence of support facilities was rated as possible hindrance to HEI management preparedness. Climate change impacts may be managed among HEIs through interventions in making a more prepared community and environment-friendly community. There is a need for integrated climate change adaptation measures among HEIs in Oriental Mindoro, develop linkages to affirm knowledge on problem and enhance HEIs' capability to adapt, enhance information dissemination strategy, and the need to organize crisis response teams.

**Keywords:** management preparedness, climate change, school, managers, MIMAROPA.

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## 1. INTRODUCTION

The geographic location of the Philippines makes it vulnerable to climate change. It is susceptible to increased frequency and intensity of heat-waves, floods, droughts, typhoons, alter agricultural, coastal and marine ecosystems, reduce water availability and quality, and increased incidence of climate-sensitive infectious diseases which result to disorder in social and biological systems.

Climate change affects more than just a change in weather; but the seasonal changes over a long period of time. These patterns play fundamental role in shaping natural ecosystems, human economies and cultures that depend on them. A change in climate can affect many related aspects of where and how people, plants and animals live, such as food production, availability and the use of water, and health risks change.

Climate change is the contemporary primary concern not only of the government, scientists, academicians, but must be of all individuals. Everyone plays an important role in the future of our universe. It affects directly and indirectly, the lives of each and every one from the unborn, newly born babies to the aged people. This calls for awareness of everyone so as to limit further damage to our environment.

Everyone specifically in the academe must have participation to mitigate the effect and the consequences of climate change. People in the academe must help in making known to all individuals the consequences for them to prepare for possible crisis and lessen the ravages brought by climate change. Preparedness will enable the community to take

precautionary measures and authorities to formulate measures and contingency plans that will keep them functioning through the crisis.

With all the above cited facts, the researcher was urged to determine the awareness of school managers in HEIs in the province on climate change effects on social and biological systems and their preparedness to manage crisis.

## 2. OBJECTIVE OF THE STUDY

The study generally aimed to determine the awareness and management preparedness of the school manager-respondents from HEIs in the Province of Oriental Mindoro on climate change.

Specifically, the study wanted to know the awareness of the respondents on the effect of climate change on social systems in terms of food supply, health, water resources and mitigation and on biological systems in terms of terrestrial, marine and freshwater ecosystems. The study also wanted to know the management preparedness of Higher Education Institutions in the province in terms of leadership, response and the funding resources.

## 3. METHODOLOGY

The study employed the descriptive method of research. It involves statistical analysis of samples from the universe of facts, an organized attempt to analyze, interpret and report the present status of higher education institutions in Oriental Mindoro in terms of awareness and management preparedness on climate change.

Data were gathered through structured questionnaires which were administered to seventy-three (73) school managers of selected HEIs in the province. Selection was based on the population of the HEIs, which were determined through the Commission on Higher Education (CHED) Regional Office for the MIMAROPA Region.

The study employed non-proportional stratified random sampling technique in the determination of the respondents. More than fifty percent (50%) of the school managers from the thirteen (13) HEIs in Oriental Mindoro were considered in this study.

Data collected from the respondents were treated using descriptive statistics such as mean and rank. To test the reliability of the instrument, the Pearson's  $r$  coefficient of correlation was used. To test the significance between the mean score of the respondents,  $t$ -test statistics was used.

## 4. RESULTS AND DISCUSSIONS

Discussion in this study is on the climate change awareness of school managers and the management preparedness of HEIs in Oriental Mindoro. The first part presents the results on the awareness of the school manager-respondents and the second is on management preparedness in handling climate change.

### **Awareness on Climate Change Crises Effects on Social System in terms of:**

#### ***Food Supply:***

The study revealed that school managers were aware of the effects of climate change on social systems in terms of food supply as reflected in the overall mean score of 4.16. School managers were fully aware that climate change caused varying monsoon and unpredictable weather patterns that affect the mass production of food and agricultural products, and it causes changes in agriculture and farming practices.

The findings imply that school managers were cognizant on the effects of climate change on social systems in terms of food supply. Apparently, they have acquired knowledge on the consequences of the changes of climatic condition such as rainfall, temperature, relative humidity, and day length and wind velocity in agriculture which greatly affects the production of food supply.

#### ***Health:***

The results revealed that the school managers were fully aware that climate change worsened highly climate sensitive diseases such as diarrhea, malaria, dengue and malnutrition and that it exposes lots of people to increasing health risks due to catastrophes such as forest fires, water impurities and too much solar radiation as reflected on the overall mean of 4.30.

This implies that school managers have obtained wide knowledge on the consequences of climate change on human health.

#### ***Water Resources:***

With regards to the climate change effects on water resources, the findings revealed that the school managers were fully aware that climate change causes rise in sea level and increase in extreme weather events that destroy homes, medical facilities and other essential services and that it also causes contamination of freshwater supplies as attested by the overall mean of 4.27. The full awareness of the school managers could be attributed to their exposure on the information, facts and the actual scenarios.

#### ***Mitigation:***

The school managers have shown social consciousness on the effects of climate change on social systems in terms of mitigation as reflected by overall mean score of 4.30. School managers were aware that the effects of climate change need to be lessened thru planting of more trees to absorb and hold water and also to lessen the air pollution due to lots of human activities. While, the mean score for the dredging of water resources and the need for the imposition of environmental friendly laws described them as aware. This connotes the high level of consciousness among the school managers in Higher Education Institutions (HEIs) in the Province of Oriental Mindoro.

The findings reveal that school managers are highly knowledgeable of mitigation measures to safeguard human physiological needs, which are at risks due to the recent phenomena brought by climate change. They are fully aware of what should be done to mitigate the climate change effects for their survival.

Moreover, the results concur with the advocacy of Senator Loren Legarda, the Regional Champion for Disaster Risk Reduction and Climate Change Adaptation for Asia and the Pacific, to act now for a better and safer community of tomorrow; plant a tree in rural and urban areas that will provide fresh air to breathe in and will help in lessening carbon dioxide emitted by vehicles and factories.

**TABLE 1.1. AWARENESS ON CLIMATE CHANGE CRISES EFFECTS ON SOCIAL SYSTEMS**

| <i>Effects of Climate Change on</i> | <i>School Managers</i> |             |
|-------------------------------------|------------------------|-------------|
| <b>Social System</b>                | Mean                   | Description |
| Food Supply                         | 4.16                   | fully aware |
| Health                              | 4.30                   | fully aware |
| Water Resources                     | 4.27                   | fully aware |
| Mitigation                          | 4.30                   | fully aware |
| <b>Mean</b>                         | 4.30                   |             |

#### **Level of Awareness of School Managers and Faculty Members on the Effects of Climate Change on Biological Systems:**

##### ***Terrestrial Ecosystem:***

School managers had shown full consciousness that climate change affects the stability of temperature resulting to extinction of some terrestrial species both plants and animals as reflected on the overall mean score of 4.10. They were also aware that climate change causes severe heat on terrestrial ecosystem which causes forest fires and death of wildlife.

It implies that respondents are cognizant that climate change threatens the biodiversity due to its different effects such as rising of temperature which eventually may lead to risk of extinction of species.

##### ***Marine Ecosystem:***

The overall mean of 4.04 manifested awareness that climate change caused decrease in water quality. They are aware that climate change results to increase in ocean temperatures, coral bleaching and death and decrease on quality of marine water leading to death of marine life, which will definitely affect the lives of so many people who merely depend on fishing and other means for their livelihood, which utilize marine ecosystem. On the other hand, for them climate change is not the cause of death of colorful algae that are necessary for the life of corals and that it does not cause distortion of the

general circulation of the atmosphere, global pattern of air movements and semi-tropical trade winds was also not so known among the respondents.

#### ***Freshwater:***

School managers were cognizant that climate change affects the biological system in terms of freshwater ecosystem with the overall mean of 4.17. They were aware that climate change causes death of freshwater life and it also leads to an imbalance freshwater ecosystem. Likewise, they were aware that climate change causes massive melting of ice in the North Pole.

**TABLE 1.2 AWARENESS ON CLIMATE CHANGE CRISES EFFECTS ON BIOLOGICAL SYSTEM**

| <i>Biological System</i> | <i>School Managers</i> |             |
|--------------------------|------------------------|-------------|
|                          | Mean                   | Description |
| Terrestrial Ecosystem    | 4.10                   | fully aware |
| Marine Ecosystem         | 4.04                   | fully aware |
| Freshwater Ecosystem     | 4.17                   | fully aware |
| <b>Mean</b>              | 4.10                   |             |

The known El Niño phenomenon which affected various parts of the country and other countries probably increased the awareness of the respondents on the effects of climate change on our freshwater ecosystem. In the recent years, Philippines experienced El Niño events which resulted to intense pressure of transforming rivers, lakes and wetlands into dry lands and the massive fish kills on lakes, rivers, and ponds. Not only fisher folks had been affected by such scenario but also the consumers all throughout the country.

#### **Level of Preparedness of School Managers on Climate Change Crisis Management:**

##### ***Leadership:***

School managers expressed that they were prepared in handling crisis as reflected in the overall mean score of 3.78. There is an open and consistent communication throughout the hierarchy. Leaders are capable of drawing necessary response mechanism and with existence of structural-functional system which addresses and handles intricacies of information and levels of command.

This implies that school managers and their respective institutions are prepared on climate change crisis management. They have acquired understanding of crisis management that enabled them to get a set of attitudes and concern for the organization and motivation as well as commitment to participate in organization maintenance and improvement. An open and consistent communication throughout the hierarchy will lead to handling conflicts more easily because this opens up the opportunity to the leaders and the members as well to be aware of the actual situation and problems. Thus, giving everyone sufficient time to be prepared for the possible consequences that the situation or problems may bring. Unison, trust, cooperation and good leadership within the institution prepare the school managers and faculty members to handle intricacies and crisis as attested by the result of the study.

**TABLE 2. LEVEL OF PREPAREDNESS ON CLIMATE CHANGE CRISIS MANAGEMENT**

| <i>Crisis Management</i> | <i>School Managers</i> |             |
|--------------------------|------------------------|-------------|
|                          | Mean                   | Description |
| Leadership               | 3.92                   | Prepared    |
| Response                 | 3.62                   | Prepared    |
| Funding Resources        | 3.81                   | Prepared    |
| <b>Mean</b>              | 3.78                   | Prepared    |

##### ***Response:***

School managers were prepared on crisis management as revealed by the overall mean of 3.62 as their organizations have a crisis management plan that provides the thought-to-be best response to a crisis. They had been prepared also by the existence of committee that was created to determine the type of crisis and appropriate crisis management strategy.

These findings complement the important roles of the school managers in planning and managing the institution.

#### **Funding Resources:**

Most of the institutions were prepared in handling crisis as reflected in the overall mean score for the school managers. This could be due to the existence of budget and institutional fund for delivering training programs in areas of crisis management, policy and planning, resource generation and change management. Crisis management teams are also present in most of the institutions that make up of people with a range of skills and attributes who can work for determining funding resources

### **5. CONCLUSION**

School managers in Higher Education Institutions in Oriental Mindoro concede that climate change has great impact on social systems in terms of food supply, freshwater, health and mitigation as well as on biological systems measured in terms of terrestrial ecosystem, marine ecosystem and freshwater ecosystem. Their awareness made them prepared on crisis management in terms of leadership, response and funding resources.

### **6. RECOMMENDATION**

Based on the results of the study, some suggestions were drawn to better prepare the people not only in the academic community but everyone to be well-equipped with the knowledge on what climate change is and how it could affect the humanity.

Limited awareness on what climate change is may be very risky especially for those people in the disaster-prone areas, hence, belonging in the academic community, HEIs should be the repository of knowledge in the community through conducting various seminars or information dissemination, so that the people, could prepare themselves to the possible scenarios during climate change related disasters. Likewise, holding and attending more conferences, film showings, panel discussions, seminars, symposia and the like, related to climate change should be facilitated and encouraged by HEIs in order to strengthen the level of awareness of the schools managers, faculty, students and the community on the effects of climate change to our environment and to humanity.

Higher Education Institutions should establish a closer partnership with different government and non-government sectors in order to increase their efficiency and effectiveness in reducing the people's vulnerability to climate related disasters.

Further HEIs should synchronize their crisis management programs and projects regarding climate change and its mitigation measures with that of the other HEIs in the province of Oriental Mindoro in order to create a greater impact on lessening the effects of climate change in educational institutions.

Similar studies should be conducted along this line to confirm the findings of the study on hand or a follow-up study so as to touch the other components which are not covered in this study.

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