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**CLIMATE CHANGE AWARENESS AND PRACTICES AMONG BARANGAY**

**OFFICIALS AND NON-OFFICIALS OF SELECTED**

**BARANGAYS IN ALAMINOS CITY, PANGASINAN, PHILIPPINES**

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**ABSTRACT**

Climate change is one of the most controversial environmental issues nowadays. This study reported the climate change awareness and practices in Pangasinan, Philippines. Eight (8) selected barangays in Alaminos City, Pangasinan with a total of 240 respondents (including 80 barangay officials and 150 non-officials) were interviewed. Most of the respondents were male officials (51 males, 29 females) and male non-officials (81 male, 79 females). All respondents were aware on climate change but male barangay officials were more aware than female officials. The level of education of the officials was a factor on the level of awareness. In non-officials, the level of awareness of singles was higher than the married ones and the younger respondents were more aware than those at the old age group. For the practices, it showed that the barangay officials are sometimes performing the different climate change practices while non-officials often do the different practices.

**Keywords: Climate change, barangay officials, respondents, awareness, practices**

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## INTRODUCTION

Climate is the average weather for a particular region for a long time (Small and Nicholis (2003). It describes average weather condition, regular season and special weather events like flood and tornadoes. The so-called climate patterns also play a fundamental role in shaping natural ecosystems and the human economic culture that depend on them. In the Philippines, climate zones can be of four types. First type is characterized by two pronounced seasons, the dry from November to April, and wet for the rest of the year. The second type is the, no dry season with a very pronounced rainfall from November to April and wet during rest of the year. Third seasons are not very pronounced, relatively dry from November to April wet during rest of the year and finally, the fourth is rainfall is more or less evenly distributed through the year [1].

According to Lewis[2], The United Nations Framework Convention on Climate Change (UNFCCC) have define climate change as directly or indirectly attributed by human activity which alter the composition of global atmosphere. Human activities which include pollution from industrial activities and greenhouse gases such as carbon dioxide have ability absorb the spectrum of infrared light and contribute to the warming of our atmosphere. Hence, once produced

this gases can remain trapped in the atmosphere for tens or hundreds of years and heat the planet. Based on report, the Philippines has the most vulnerable to the worst effects of climate change [3]. Among them were stronger rains, longer droughts and wide intervals in between. It was also mentioned that the 13 storms that hit the Philippines from June of 2013, a month after a harsh El Niño which cost the agriculture sector close to P 5 billion in damages [4]. Due to the casualties that occurred in the Philippines, different government and non-government units are working together for better understanding for climate change. Since the frequency and intensity of its effect is increasing, the so-called Disaster Risk Reduction and Management Council have been established in most cities and towns of the Philippines. From the national down to local government units and barangay information dissemination is also conducted through seminars and trainings.

Herein, I reported the level of climate change awareness and practices among barangay officials and non-officials of eight selected barangays in Alaminos City, Pangasinan, Philippines. A total of 240 respondents that includes barangay officials and non-officials were interviewed.

## MATERIALS AND METHODS

The study was carried out in eight (8) barangays of Alaminos City, Pangasinan, Philippines, namely; Barangay Sta Maria, TawinTawin, Dulacac, Bisocoland, Victoria, Telbang, Pangapisan, and Mona. The different barangays are shown in Figure 1. The study sites were identified based on the information taken from Alaminos City Disaster Risk Reduction Management Council (CDRRMC). Those who were available during the time of survey were chosen to be the respondents. A total of 80 barangay officials and 160 non-officials are included in this study. Prior to the survey proper, approval from the City Mayor was sought and eventually

endorsed to the officials of each barangay. The study utilized the descriptive comparative research design wherein questionnaires were formulated by the researcher and translated in Filipino. The instrument of this study contained sections of A and B. Section A contained the personal data of respondents while section B contained items on awareness and practices of respondents on climate change. For awareness, the instrument was developed in four (4) Likert Scale type of Fully Aware, Slightly Aware, Aware and Not Aware. In practices, scales were Always, Often, Seldom and Never.



Figure 1: The map of different barangays of Alaminos City, Pangasinan and the selected study areas.

**RESULTS AND DISCUSSION**

**Respondents profile**

A total of 240 respondents (80 barangay officials, 150 non-officials) were

interviewed in this study. The profile of respondents is presented in Table 1. Most of the respondents were male officials and non-officials. Majority of the officials were

married with a frequency of 77 so with the 127 married non-officials. Meanwhile, barangay officials are within the age group of 45-54 years old and a modal frequency of 33 for ages that ranges 25-34 and 55-64. Most of the interviewed officials in this survey were vocational graduates (23 officials) and 81 high school graduates among non-officials. Barangay officials respondents were Barangay Health Workers with a frequency of 28 and most respondents are engaged to farming with a frequency of 54.

### **Climate change awareness**

Climate change awareness of all respondents is shown in Table. 2. From the list of climate change awareness of barangay officials were fully aware on the following indicators having an average weighted mean (AWM) of 3.00, that “*Climate change can bring strong rains*”, “*Climate change causes warming of the oceans levels which can lead to stronger and frequent storms*”, “*Climate change may result to disease of animals*”, “*Climate change may cause ill-health*” and “*Climate change results to damage of vegetation*”. However, non-officials were also fully aware that “*Climate change can bring strong rains*” with AWM of 2.93, and “*Climate change brings drought*” (AWM 2.91), “*Climate change brings flood*” (AWM 2.89) and “*Climate change will*

*result to diseases of man*” (AWM 2.82) got the highest AWM among respondent. “*Methane is a greenhouse gas that contributes to global warming leading to climate change*” have an AWM of 2.21, both barangay officials and non-officials, which got a descriptive rating of *Slightly Aware* and that another indicator which states that “*Climate change causes warming of the oceans levels which can lead to stronger and frequent storms*” have a AWM of 2.25 and descriptive rating of *Slightly Aware*. These two indicators only shows, the barangay officials and non-officials have a lesser idea on the scientific descriptions of climate change.

### **Climate Change Practices**

The different climate change practices of the barangay officials are presented in Table 3. Apparently, officials of the barangay play an important role hence, the following indicators got the highest AWM; “*I/we use electric fan/s instead of air conditioner to conserve energy*” (AWM 4.59), “*I/we conserve water*” (AWM 4.49), “*I volunteer myself in the repackaging of reliefs in times of calamities*” (AWM 4.56). A descriptive rate indicating never has been noted on the indicator stating that “*I volunteer myself as a speaker in climate change seminar*”. This is true since, the usual speakers of the risk Reduction Management are the expert since they have

undergone a series of trainings and seminars. On the other hand, Table 4 enumerated the different climate change practices among non-officials having a descriptive rating of Always, these include, “I plant some vegetables which require less water”, “I conserve water by reusing water from laundry clothes”, “I stack batteries full charge power banks whenever I learn that a tropical cyclone or typhoon is coming”, “I remove the plug of appliances when we are not using it to save energy”, “I use electric fan instead of air conditioner to conserve energy”, “I plant vegetables on the old tires”, and “I recycle the plastic bottles by using them as pots in planting”. This means that most of the respondents are practicing important guidelines whenever climate change effect may suddenly occur. Hence, they respond to the call of the risk reduction management to be ready in times of calamity.

Furthermore, there is a significant difference between the level of awareness of male and female barangay officials. The mean difference of -0.10 implies greater level of awareness of male barangay officials on climate change compare to the level of awareness of female barangay officials. This is due to majority of the non-officials are males and connected with the barangay council. Under the variable age, 4 age groups of barangay officials were

observed. F-test was used to check if the levels of awareness on climate change of these 4 groups of barangay officials are significantly different. The significance value of 0.869 implies that the level of awareness on climate change of the 4 groups is the same. Under educational attainment, 5 classifications of barangay officials were observed. Using F-test, a significance value of 0.033 was observed, this means that at least 2 of the means are significantly different or the groups have significantly different level of awareness on climate change. The barangay official's level of educational attainment gets higher; the level of awareness on climate change also improves.

In the case of non-officials, significant difference was observed in their civil status. The level of awareness of singles has higher level of awareness compare to respondents who are married. There is a significant difference between the level of awareness of single and married residents. The mean difference of 0.38 implies that singles have higher level of awareness compare to married. Under the variable age, 6 age groups of residents were observed. Welch test was used to check if the levels of awareness on climate change of these 6 groups of residents are significantly different. The test shows that at least 2 of the groups are significantly

different. Non-officials belong to the age group 15 – 24 have significantly higher level of awareness on climate change compare to the older age groups while those belonging to the age groups 25 – 34

and 35 – 44 have also significantly higher level of awareness on climate change compare to residents belonging to the age group 65 and above.

**Table 1: Profile of the respondents from the eight selected barangays**

Barangay Officials			Non-officials		
Variable	Frequency	Percent	Variable	Frequency	Percent
<b>Sex</b>			<b>Sex</b>		
Male	51	63.75%	Male	81	50.6%
Female	29	36.25%	Female	79	49.4%
<b>Civil Status</b>			<b>Civil Status</b>		
Single	0		Single	33	20.6%
Married	77	96.25%	Married	127	79.4%
Separated	3	3.75%	Separated	0	
<b>Age</b>			<b>Age</b>		
25 – 34	3	3.75%	25 – 34	33	20.6%
35 – 44	21	26.25%	35 – 44	32	20.0%
45 – 54	34	42.5%	45 – 54	30	13.8 %
55 – 64	22	27.5%	55 – 64	33	20.6%
65 above	22	27.5%	65 above	10	6.3%
<b>Educational Attainment</b>			<b>Educational Attainment</b>		
High School Graduate	22	27.5%	Elementary Graduate	1	0.6%
Vocational Level	7	8.75%	High School Level	29	18.1%
Vocational Graduate	23	28.75%	High School Graduate	81	50.6%
College Level	22	27.5%	Vocational Level	14	8.8%
College Graduate	6	7.5%	Vocational Graduate	9	5.6%
			College Level	11	6.9%
			College Graduate	15	9.4 %
<b>Position</b>			<b>Occupation</b>		
Barangay Captain	5	6.25%	Housewife (Homemaker)	37	23.1%
Barangay Kagawad	22	27.5%	Farming	54	33.8%
Secretary	1	1.25%	Fishing	11	6.9%
Treasurer	4	5%	Skilled Worker	15	9.4%
Book-keeper	1	1.25%	Government employee	10	6.3%
CVO	11	13.75%	Private Employee	6	3.8%
BHW	28	35%			
BSPO	8	10%			

**Table 2: Climate change awareness of the respondents from the eight selected barangays**

Climate Change Awareness	Barangay Officials		Non-officials	
	AWM	Descriptive Rate	AWM	Descriptive Rate
1.Climate change bring strong rains.	3.00	FA	2.93	FA
2. Climate change brings flood.	2.94	FA	2.89	FA
3. Climate change brings drought.	2.98	FA	2.91	FA
4. Global warming , enhances climate change .	2.69	FA	2.44	FA
5.Burning of fossil fuels causes heat leading to climate change.	2.65	FA	2.43	FA
6. Methane is a green house gas that contributes to global warming leading to climate change.	2.39	FA	2.13	SA
7. Deforestation increases the concentration of carbon dioxide in the atmosphere at promotes climate change.	2.98	FA	2.60	FA
8.Climate change causes warming of the oceans levels which can lead to stronger and frequent storms.	3.00	FA	1.88	SA
9.Climate change may result to disease of animals.	3.00	FA	2.28	SA
10. Climate change can destroy human habitat.	2.59	FA	2.59	FA
11. Climate change lead to relocation of individuals.	2.68	FA	2.44	FA
12. Climate change will result to diseases of man.	2.71	FA	2.82	FA

13. Climate change may cause ill-health.	3.00	FA	2.14	SA
14. Climate change results to damage of vegetation.	3.00	FA	2.58	FA
15. Climate change may result to coral reefs damage.	2.88	FA	2.14	SA
Overall Average Weighted Mean	2.83	FA	2.48	FA

Table 3: Climate change practices among barangay officials respondents from eight selected barangays

Climate Change Practices	Barangay Officials	
	AWM	Descriptive Rate
1.I/weremove the plug of appliances when I/we are not using it.	2.15	Seldom
2. I/weuse electric fan instead of air conditioner to conserve energy.	4.59	Always
3. I/we recycle the bottles by planting some vegetables.	3.91	Often
4. I/we plants on the old tires.	3.21	Sometimes
5.I collect renewable garbage and do composting activities.	2.80	Sometimes
6.I/we conserve water.	4.49	Always
7. I/we refrain from burning Styrofoam.	3.18	Sometimes
8. I joined in the tree-planting activities to save the planet from climate change.	3.78	Often
9. I join in the climate change seminars organized by the government.	3.58	Often
10.I volunteer myself as a speaker in climate change seminar.	1.04	Never
11.I help the CDRRMC in giving information in times of calamities.	3.45	Often
12.I joined the Basic Life Support and First Aid Training conducted by the CDRRMC in times of calamities.	3.56	Often
13. I joined trainings on Water-search and Rescue Operations seminars conducted by CDRRMC in times of calamities.	3.24	Sometimes
14. I volunteer myself in the repackaging of reliefs in times of calamities.	4.56	Always
15. I act as a front liner volunteer of CDRRMC in times of calamities.	2.80	Sometimes
16. I prepare our barangay by conducting seminars for calamities.	2.25	Seldom
17.I prepare the evacuation area in our place in times of calamity.	3.58	Often
18. I prepare a calamity kit.	3.28	Sometimes
19.I help in the information dissemination in times of calamities.	3.48	Often
20. I make action plans for the activities in our barangay in times of calamities.	2.91	Seldom
Average weighted Mean	3.29	Sometimes

Table 4: Climate change practices among non-official respondents from eight selected barangays

Practices	Non-officials	
	AWM	Descriptive Rate
1. I remove the plug of appliances when we are not using it to save energy.	4.51	Always
2. I use electric fan instead of air conditioner to conserve energy.	4.48	Always
3. I recycle the plastic bottles by using them as pots in planting.	4.43	Always
4. I plant vegetables on the old tires.	4.46	Always
5. I plant other crops aside from rice after harvest.	3.99	Often
6. I plant some vegetables which require less water.	4.71	Always
7.I collect renewable garbage and do composting activities.	4.43	Always
8.I conserve water by reusing water from laundry clothes.	4.63	Always
9. I refrain from burning styrofoam	3.86	Often
10. I join in the tree-planting activities to save the planet from climate change.	3.62	Often
11. I join in the climate change seminars organized by the local government .	3.78	Often
12.I help our local barangay officials in giving information in times of calamities.	3.81	Often
13.Iprepare emergency kit for me and my family in times of calamity.	4.17	Often
14. I stack canned goods for me and my family in times of calamities.	4.26	Always
15. I prepare an improvised raft for my family in case of flood.	3.50	Often
16. I place old tires, big rocks and ropes on the roof of my house in times of upcoming typhoon.	3.73	Often
17. I prepare an improvised cage for my pet animals in times of flood.	3.63	Often
18. I stack water on drums in times of water shortage.	4.29	Always
19. I stack a lot of fire wood at home so that my family will have something to use in times of calamities.	4.04	Often
20. I stack batteries,, full charge power banks whenever I learn that a tropical cyclone or typhoon is coming.	4.68	Always
Average Weighted Mean	4.15	Often

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## CONCLUSION

In conclusion, barangay officials and non-officials are fully aware on climate change. Male barangay officials and those with higher level of education are more aware. In non-officials, the level of awareness of single and younger is higher than the married ones and old age group. Therefore, the government program on Climate Change Dissemination of information or the so-called “*I Am Ready*” slogan pertaining to climate change and disaster is very effective. For the practices, study showed that the barangay officials are sometimes performing the different climate change practices while non-officials often do the different practices. They are performing the enumerated climate change practices even without coming calamities and they do perform such practices without knowing that this is related to climate change. There is a need therefore, for the environmental and government agencies to further continue their information

dissemination campaign. This is to educate further the individuals that the catastrophes that we are experiencing are already effect of climate change.

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