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The Philippines Readiness in Addressing Food Security by Minimising the impact of Climate Change

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The United Nations has declared that Climate Change is a long-term shift in weather pattern, that could be natural such as variations in the solar cycles. The 1987 Philippine Constitution states that The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature." In 2020, the Paris Agreement , which is the pinnacle of international law on climate change, orchestrated global climate action over the coming decades. Countries agreed to limit global warming to well below 2ºC above preindustrial times, closer to 1.5ºC. In 2023, at the World Economic Forum, Climate Change has been one of the biggest economic factors playing a vital role globally. This means that aside from the global terrorist threat, Climate Change is now a global threat that raises a global concern that needs an urgent attention. In the Metaphysics perspective, this year will bring out more issues on climate change affecting the productivity of farmers specially in Q3 and Q4. Climate change affects the productivity of the people, as well as the food production which is a matter of concern for every world leader.

Keywords: *Climate Change; Food Security; Metaphysics; Paris Agreement; Protection.*

Introduction

Food, Clothing, and Shelter are said to be the basic needs of mankind. This basic principle will make someone understand how mankind is motivated to achieve their goals. The bottom line of everything and anything in this planet is all about achieving the basic needs of man. Of all these basic needs of man, the greatest of them is food. Food is defined as a substance that provides nourishment to our body. Food can either be in solid or in liquid form. Given this definition, we can consider that water or potable water to be specific is an essential need when the term food is being talked about. Food is not limited only to the solid ones like meat, vegetables, bread, dessert or a like. It also includes potable water as nourishment. According to health experts, man can live without solid food for days but not without water. But it takes no expert to tell we cannot live without this planet.

A regular Papal general audience held at the St. Peter's square in Vatican City

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was transferred to a covered venue during winter or other seasons aside from summer time.

From this scenario, it is obvious that Climate or Weather impact the activity of man and other living things on earth. In Metaphysics, climate is governed by the Heaven Luck. Something that only the universe has the call or say as regards to what will be the outcome or happening. Weather describes short term natural events - such as fog, rain, snow, blizzards, wind and thunder storms, tropical cyclones - in a specific place and time.[1] Weather affects people's decision making, it affects political relationships, political decisions, and even daily life decisions. Weather impacts or affects likewise food production, as it is true that weather impacts the activity and life of every living creature on earth, then it follows that during harsh weather conditions even animals and plants in their capacity to produce is affected by weather.

Climate characterises the average weather conditions for a particular location over a long period of time.[2] For instance, there could be rainy, sunny, foggy, snowy weather and thunderstorms in Finland, but in general the Climate there is cold. When Climate Change gets into the picture or takes place; the rainy, sunny, foggy, snowy weather and thunderstorms in Finland will still happen but it will now alter the climate there in which from cold it will be warm. One of the harsh effects of climate change in the Artic like Finland, Sweden and Norway is the Aurora Borealis.

If your children watched the movie Rio[3], it was about a little blue Macaw. The real one was declared extinct back in 2018[94]. Nobody knew that bird will be gone when the movie came out in 2011. This extinction was caused by natural habitat destruction and illegal trapping. If you look now in the present, we're not birds but this planet we're living in being ruined by climate change caused by a plethora of aspects that humans contribute to.

Even if assuming that continuously the supply of these food is sufficient, the scarcity of workers who processed them is another story. People due sudden and harsh weather conditions gets sick and sickness impacts productivity. Climate Change refers to long-term shifts in temperatures and weather patterns.[5]

The World Trade Organization estimates that if total calories from all the food produced were divided among all the people on earth, there would be 2,750 calories per person per day. Since the recommended daily minimum per person is 2,100 calories a day, there are enough calories to feed everyone in the world. But not everyone is getting the fully needed calories and food because it is "not evenly

[1]Douris (2021). WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019) - 14th meeting of the Executive Committee of the Warsaw International Mechanism for Loss and Damage (WIM) https://unfccc.int/sites/default/files/resource/2021.09.20%20-%20WMO%20Atlas%201970 2019.pdf

[2]Global-trends-in-climate-change-legislation-and-litigation-WEB

[3]Rio – Movie Review https://raisingchildren.net.au/guides/movie-reviews/rio

[4]https://edition.cnn.com/2018/09/09/americas/rio-spix-blue-macaw-extinct-brazil/index.html

[5]Impact of climate change on agriculture https://www.futurelearn.com/info/courses/climate-smart-agriculture/0/steps/26565

distributed across the landscape of the world"[6]. Factors that has affected these include climate change and poverty. In the not so advanced countries where poverty is very high, people do not have the means to buy food or have an access to clean and potable water which is the basic necessity of man. They dwell on the streets that make them vulnerable to all kind of common bacterial and viral infections that brings their immune system down and will result to a dreaded disease or even death. In Metaphysics this is called Bazi or the Earth Luck.

Given all these premises what is the real cause of climate change? Then the answer is *human activity*. Primarily on activity like burning fossil fuels like coals, oil, and gas.[7]

Where does each of these natural resources are primary used, why are they needed to be regulated and why will the continuous use of these resources will eventually lead to food security issues in the future. It is therefore the premise of this study as to assess *the Philippines Readiness in Addressing Food Security by Minimizing the impact of Climate Change*.

The use of Coals, Oil, and Gas

Coals

Coals are natural resources that are primarily used by different industries. For instance, coals are used to power up turbines that generate and distribute electricity. Powerplants uses coals to generate electricity and serve its consumers. No doubt that electricity is much needed. According to a study conducted by Schneider Electric conducted in 2010, the demand for electricity would increase triple by the year 2020. In today's advancement of technology, electricity is a partner to achieve these advancements. Computers will not power up without electricity and likewise the internet which is a part of human existence today, will not work without power or electricity. Today, computers without internet are considered useless. Mobile phones which are now mostly smartphones acts and works like computers, and with this principle they likewise need an internet connection for them to be appreciated, thus the role of electricity will be in picture of this to be appreciated. In 2020 when COVID-19 pandemic hitted the world, most industries shifted to online solutions that obviously increased the demand for electricity and energy. During the pandemic a stable internet connection and electricity became the requirement in order for someone to thrive.

In the metal industry, coal is used to produce heat. Coal is coked to produce steel that is used to build bridges, buildings, and use in cars.[8] Every country has infrastructure projects as these infrastructure-like roads, bridges and buildings are signs of progress. They also help to alleviate poverty since in a highly develop city or country many investors would strategically build their business.

[6]Tan, J. Global Food Scarcity: Definition, Distribution, Roadblocks, University of Nebraska Lincoln. https://sdn.unl.edu/global-food-scarcity
[7]Idem.
[8]United Nations Climate Action. https://www.un.org/en/climatechange/what-is-climate-change

Oils

Petroleum Products are results of other liquids and crude oil from burned fossil fuels.[9] These products are used for gasoline and diesel production. Through the years the production of vehicles and demand for petroleum products increased. This includes the aviation industry which primarily use and take advantage of this product. As infrastructures develop, it gives way and access to modes of transportation like trucks, buses, and trains. As years go by man's desire to own their vehicle became a part of custom and even signs of being wealthy, this is why countries like Singapore impose too much tax on vehicles so that its citizens will shift to rely on public transportation instead of using private owned cars.

As exportation is also a means for a country to increase their GDP, its effect will translate into more cargos and shipments that will be shipped by couriers and of course cargo planes, thus it will increase the use of Jet A1 fuel used by airplanes. In some countries like Canada, living in the Northern provinces such as Norman Wells those who resides there need to have their own vehicles even for going to nearby grocery shop.

Gas

Among the three (3) fossil fuels, gas is the most and widely used natural resource. Various sectors benefit from using it. The basic households use gas to cook their food, dry clothes, and to heat up buildings.[10] For the commercial sector, it is use for cooking food, heat up the buildings, alternative power source (generator), and to provide lighting. For the industrial sector it is used to process fertiliser and the transportation sector use natural gas as fuel to create liquified petroleum gas (LPG) that enabled some vehicles to move. Perhaps gas is the most used and most in demand fossil fuel among the 3.

Now that each fossil fuel has been carefully identified on how human activity caused Climate Change, then awareness gets in as to how daily human activity slowly or aggressively aggravates Climate Change, however even this is the case, human still desires to have more and improve. When scenario becomes like this, then regulation or law needs to be in place in order for proper consumption and future generations still take part in the natural resources that this planet has and that the infrastructures that the government has prepared will be beneficial to next generation.

The Libertarians, Progressives, and Efficiency Theory states that if a certain resource is scarce then there should be a rule that should regulate the scarce resource. In the absence of the law or rule that will regulate then this will result in a chaotic society. This chaos will and may potentially lead to Food Security issues and this why regulation (law) and the enforcing body (law enforcement) must be

[9]United Nations, 1267_Atlas_of_Mortality_en https://etrp.wmo.int/mod/resource/view.php?id=16635&lang=ru1267 Atlas of Mortality en-final - 26.07.2021.

[10]United Nations, UNU-EHS_Interconnected_Disaster_Risks_Report_2022_LowREs_FINAL https://s3.eu-central-1.amazonaws.com/interconnectedrisks/reports/2022/UNU-EHS_Interconnected_Disaster_Risks_Report_2022_LowREs_FINAL.pdf

prepared in order to minimise the impact of Food Shortage in the future, thus creating Food Security for the nation.

Global Climate Change Impact

Weather Related Disasters

Climate Change resulted to numerous disasters happening globally. Some countries are severely damaged, while others were spared or at least sustained a minimal impact. It is like your immune system. If the immune system is strong or well-nourished then it is easier for the body to cope from diseases or the body will not be prone to sickness. This is the same situation in terms of climate change impact caused by weather related disasters. Countries that are prepared and have a healthy ecosystem sustained lesser impacts of these climate change weather related disasters.

A comprehensive report of mortality and economic losses from weather and dangerous climate conditions was prepared by World Meteorological Organization.

Global Impact

Table 1a. *Deaths caused by Weather Related Disaster*

(a)	Disaster type	Year	Country	Deaths
1	Drought	1983	Ethiopia	300 000
2	Storm (*Bhola*)	1970	Bangladesh	300 000
3	Drought	1983	Sudan	150 000
4	Storm (*Gorky*)	1991	Bangladesh	138 866
5	Storm (*Nargis*)	2008	Myanmar	138 366
6	Drought	1973	Ethiopia	100 000
7	Drought	1981	Mozambique	100 000
8	Extreme temperature	2010	Russian Federation	55 736
9	Flood	1999	Bolivarian Republic of Venezuela	30 000
10	Flood	1974	Bangladesh	28 700

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019)

Table 1a shows that deaths increase from the 1974 to 2010. From just 28,000 to 300,000 deaths in 1983. This data proves that while weather is a short-term natural event, the intensity or the impact of weather disturbance is also getting worst. Thus, the flood that took place in 1974 in Bangladesh that claimed 28,700 casualties, intensified further in 1999 in Venezuela causing it to claim 30,000 casualties. It can be factored as well the readiness of Venezuela in terms of flood that resulted in more lives claimed in Venezuela than in Bangladesh.

Africa

Table 2a. *Deaths caused by Weather Related Disaster in Africa*

(a)	Disaster type	Year	Country	Deaths
1	Drought	1983	Ethiopia	300 000
2	Drought	1983	Sudan	150 000
3	Drought	1973	Ethiopia	100 000
4	Drought	1981	Mozambique	100 000
5	Drought	2010	Somalia	20 000
6	Drought	1973	Somalia	19 000
7	Drought	1980	Chad	3 000
8	Flood	1997	Somalia	2 311
9	Landslide	2017	Sierra Leone	1 102
10	Flood	2001	Algeria	921

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019)

Table 2a data shows which regions in Africa still need intervention in order to prevent drought. Take the case of Somalia, in 1973 there were only 19,000 deaths from drought and in 2010 - instead of decreasing, there were thousand more cases, leaving them a total of 20,000 cases of deaths in 2010. A similar case we find in Ethiopia - in 1973 there were 100,000 deaths from drought, but 10 years later, in 1983 the number of death cases rose to 200%, which was a total of 300,000. This means that despite the drought was worsened, no intervention was done by the government to reduce the number of possible deaths.

Asia

Table 3a. *Deaths caused by Weather Related Disaster in Asia*

(a)	Disaster type	Year	Country	Deaths
1	Storm (*Bhola*)	1970	Bangladesh	300 000
2	Storm (*Gorky*)	1991	Bangladesh	138 866
3	Storm (*Nargis*)	2008	Myanmar	138 366
4	Flood	1974	Bangladesh	28 700
5	Flood	1975	China	20 000
6	Storm (TC)	1985	Bangladesh	15 000
7	Storm (TC)	1977	India	14 204
8	Storm (05B)	1999	India	9 843
9	Storm (TC)	1971	India	9 658
10	Flood	1980	China	6 200

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019).

Table 3a shows that in Asia, there were intervention done by countries here in order to reduce the number of deaths or casualties. Bangladesh, for instance, had 300,000 deaths in 1970, but in 1991 the death cases was reduced to 138,866. As the projection for climate change, its worsening up to the present, following this theory the data will speak that in Asia, countries are doing counter measures that aims to reduce death and the impact of climate change.

South America

Table 4a. *Deaths caused by Weather Related Disaster in South America*

(a)	Disaster type	Year	Country	Deaths
1	Flood	1999	Bolivarian Republic of Venezuela	30 000
2	Flood	2011	Brazil	900
3	Landslide	1987	Colombia	640
4	Landslide	1971	Peru	600
5	Storm	1997	Peru	518
6	Extreme temperature	2014	Peru	505
7	Landslide	1973	Peru	500
8	Flood	2010	Colombia	418
9	Extreme temperature	2010	Peru	409
10	Landslide	1983	Peru	364

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019)

Table 4a shows that climate change impact has worsen on some parts of South America. Take the case of Peru under Extreme Temperature. The death rate from 2010 of 409 casualties went up to 505 in 2014. From this data, we can conclude that there are some interventions done by Peru to reduce the impact of climate change. Data shows they have relocated those who stay in landslide prone areas, and this is why their death rate from landslide in 1971 which has 600 casualties significantly went down to 364 in 1983 showing that the government of Peru is working to relocate those who reside in the landslide prone areas to a safer location.

North America and The Caribbean

Table 5a. *Deaths caused by Weather Related Disaster in North America and The Caribbean*

(a)	Disaster type	Year	Country	Deaths
1	Storm (*Mitch*)	1998	Honduras	14 600
2	Storm (*Fifi*)	1974	Honduras	8 000
3	Storm (*Mitch*)	1998	Nicaragua	3 332
4	Landslide	1973	Honduras	2 800
5	Storm (*Jeanne*)	2004	Haiti	2 754
6	Flood	2004	Haiti	2 665
7	Storm (*Katrina*)	2005	United States	1 833
8	Storm (*Stan*)	2005	Guatemala	1 513
9	Storm	1979	Dominican Republic	1 400
10	Extreme temperature	1980	United States	1 260

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019).

Table 5a shows that in North America and the Caribbean there were many weather-related disasters that claimed lives of many. Take the case of Honduras, from 8,000 deaths in storm in 1974 to 14,000 deaths in 1998. The data shows that a stronger storm has landed or devasted Honduras that resulted to that number or figures.

West Pacific

Table 6a. *Deaths caused by Weather Related Disaster in the West Pacific Region*

(a)	Disaster type	Year	Country	Deaths
1	Storm (*Haiyan*)	2013	Philippines	7 354
2	Storm (*Thelma*)	1991	Philippines	5 956
3	Storm (*Bopha*)	2012	Philippines	1 901
4	Storm	1973	Indonesia	1 650
5	Storm (*Winnie*)	2004	Philippines	1 619
6	Storm (*Joan & Kate*)	1970	Philippines	1 551
7	Storm (*Washi*)	2011	Philippines	1 439
8	Storm (*Ike*)	1984	Philippines	1 399
9	Storm (*Durian*)	2006	Philippines	1 399
10	Landslide	2006	Philippines	1 126

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019).

Table 6a data shows that the Philippines is a typhoon capital often visited by strong typhoons and storms. In 2011 there were 1,439 casualties, and in 2012 it

went up to 1,901 and in 2013 with Typhoon Yolanda or Hainan a total of 5,956 casualties. The Philippine government has not much disaster preparation in place except for the upgrade in the Weather radar in its National Weather Bureau (PAG ASA). Data shows that Philippines has a lot to improve in its disaster preparation especially in terms of Food Security in combating the effects of Climate Change. Between 1970-2019, Philippines had an economic loss of $10.4.

Europe

Table 7a. *Disaster and Deaths caused by Weather Related Disaster in Europe*

(a)	Disaster type	Year	Country	Deaths
1	Extreme temperature	2010	Russian Federation	55 736
2	Extreme temperature	2003	Italy	20 089
3	Extreme temperature	2003	France	19 490
4	Extreme temperature	2003	Spain	15 090
5	Extreme temperature	2003	Germany	9 355
6	Extreme temperature	2015	France	3 275
7	Extreme temperature	2003	Portugal	2 696
8	Extreme temperature	2006	France	1 388
9	Extreme temperature	2003	Belgium	1 175
10	Extreme temperature	2003	Switzerland	1 039

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019)

Table 7a data shows that in 2003 a number of countries in Europe were affected by Extreme Temperatures. This extreme temperature is experiencing a colder temperature than usual. At this point the other parts of the world are experiencing rising temperature causing the Artic to melt glaciers.

Table 8. *Number of Disasters reported per Country/territory by WMO Region for the Period of 1970–2019*

Region V (South-West Pacific)			
State/territory	No. of disasters	State/territory	No. of disasters
American Samoa (United States)	4	Niue	2
Australia	226	Northern Mariana Islands	4
Brunei Darussalam	1	Palau	2
Cook Islands	7	Papua New Guinea	38
Fiji	49	Philippines	514
French Polynesia (France)	7	Samoa	11
Guam (United States)	8	Solomon Islands	22
Indonesia	292	Timor-Leste	8
Kiribati	5	Tokelau (New Zealand)	3
Malaysia	65	Tonga	17
Marshall Islands	6	Tuvalu	7
Micronesia, Federated States of	10	Hawaii (United States)	5
New Caledonia (France)	9	Vanuatu	28
New Zealand	55	Wallis and Futuna Islands (France)	2

Source: WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019)

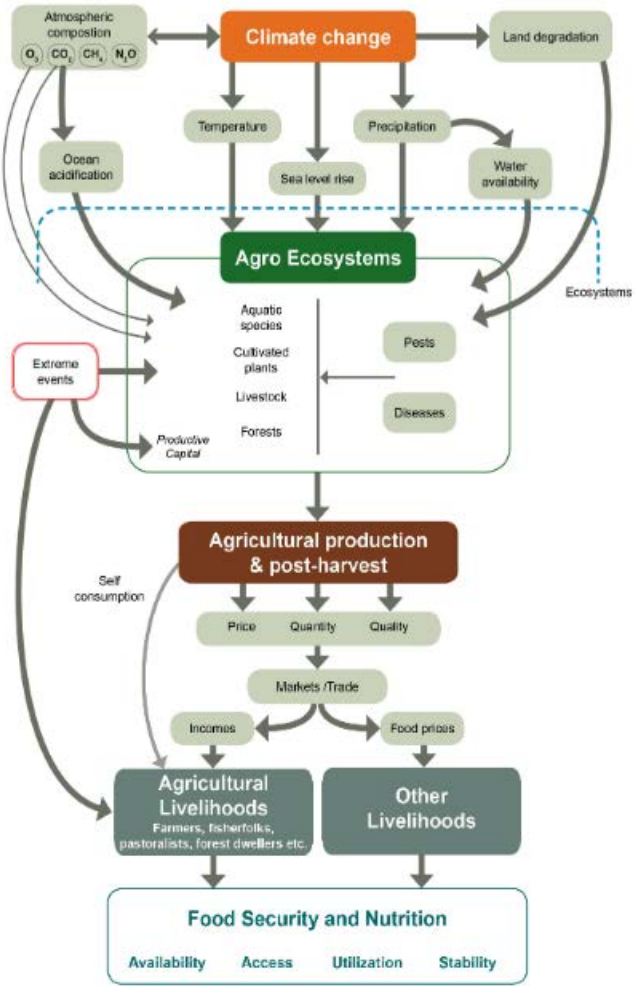
Table 8 shows that Philippines had 514 total disasters reported. With this number of disasters, it is in this premise of this study to assess The Philippines Readiness in Addressing Food Security by Minimizing the impact of Climate Change.

Climate Change Impact on Food Security

"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Food Summit, 1996). The second aspect that this research aims to present is the aspect of Climate Change Impact on Food Security. There are many factors that affects the Food Security and one of which is the aspect of imbalance food distribution. If the food produced cannot reached its target consumer the tendency for the food commodity is to rot or excessive lowering of prices just to sell it. During the peak of COVID-19 pandemic in 2020-2021, lockdown is a common scenario all over the world. Just in the Philippines alone vegetables produced from the provinces cannot reached the city resulting to rotting of goods and eventually the farmers who harvested the goods also starve as they don't have an income from the vegetables. Agriculture covers both plants and animals therefore when we say impact of Climate Change in Agriculture, it covers both plants and animals. Some animals may die due to change in climate either too much heat or cold. Fishes in the ocean tends to surface out of the ocean as if there is an abundant harvest but in reality, under the sea, there is too much heat that disturbed their habitat.

Figure 1. The illustration shows the impact of the ecosystem and agro-ecosystem on agriculture production. The relationship of pricing, quality and quantity in its impact to income of each household that defines their buying capability. More than we can ever imagine, climate change has social impact as well. If we look at the example of unsold vegetables from the farm, that will eventually make the farmer sell their carabaos or cattle to shoulder the impact of loss brought by the incident of unsold vegetables. This will eventually affect the morale and the confidence of the farmer including his family as they don't now own anything. Most farmers treasure are their cattle or carabaos.

Figure 1. *Illustration Effects of Climate Change*



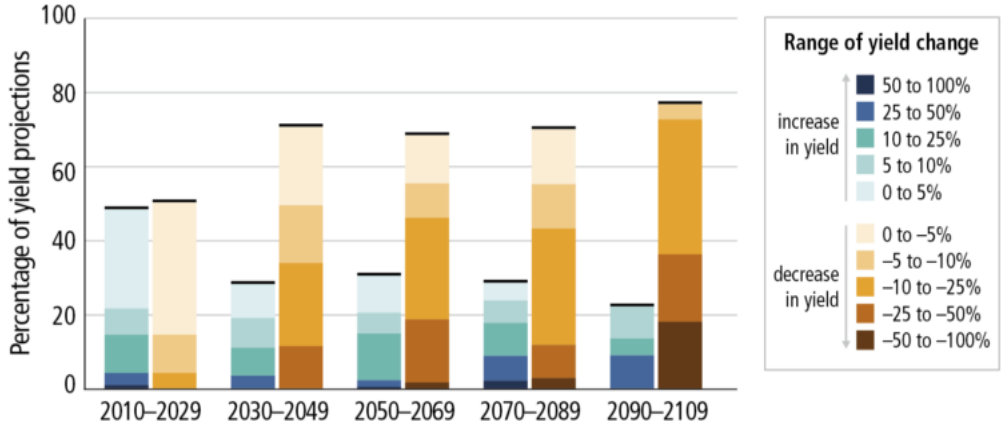
Source: Food and Agriculture Organization of the United Nations

Food scarcity may exist at an individual level, a city level, state level, nation level, continent level, or even a global level,

A shortage of food may happen when not enough food is produced, such as when crops fail due to drought, pests, or too much moisture. But the problem can also result from the uneven distribution of natural resource endowment for a country, and by human institutions, such as government and public policy. [4]

Climate change is among the greatest threats of our generation—and of generations to come—to public health, ecosystems, and the economy. The projected impacts of climate change, many of which are already occurring, like more frequent and intense hurricanes, floods, heat waves, and other extreme weather events Increased heat-related deaths.

Figure 2. *Summary of projected changes in crop yields, due to climate change over the 21st century. The figure includes projections for different emission scenarios, for tropical and temperate regions, and for adaptation and no-adaptation cases combined. Relatively few studies have considered impacts on cropping systems for scenarios where global mean temperatures increase by 4°C or more. For five timeframes in the near term and long term, data (n=1090) are plotted in the 20-year period on the horizontal axis that includes the midpoint of each future projection period. Changes in crop yields are relative to late-20th-century levels. Data for each timeframe sum to 100%*



Source: Impact of Climate Change on Agriculture by Future Learn
https://www.futurelearn.com/info/courses/climate-smart-agriculture/0/steps/26565

Global Responses, Readiness and Intervention

European Union's Response to Climate Change

In 2021, European Law Makers approved the first EU Climate Law 2021. This law contains the so-called "Fit for 55 packages" as regards to its commitment and objective to reduce emission by 55% compared with 1990 levels by the year 2030. This package includes revisions and variety of potential solutions that may potentially be an answer to address the existing issues in Climate Change in the European Union. Among the new regulations are European Union Emissions Trading Systems (EU ETS) and the Effort Sharing Regulation. These covers the topic on renewable energy, transport and land use. The package also aims to address other reforms in legislative rules including climate risk that Climate Change may bring in the European Union.

Middle East and North Africa Regions' Response to Climate Change

In a study prepared by University of Gothenburg School of Business, Economics and Law, the research has emphasised on the Climate Change Policy of Middle East and North Africa (MENA). The region is being concerned with the future impact of Climate Change being located on coastal that could potentially be hit by rising sea levels. On the other hand, since North Africa and the Palestinian Region are mostly desert, they are vulnerable to potential future potable water scarcity. These threats have significant impact on their food production and economic growth. It has been a well-known principle that climate affects poverty. The forecast that MENA had was seen to have a higher temperature in MENA than in any part of the world which means that the potential and threats to drought is very high. In the region it has been noticed the rise of consequential effects of climate change due to air, water and soil pollution. This has resulted to other diseases that lead to unemployment, health insurance cost. With the scarcity of resources, it is no doubt that there is a high tendency for tension between countries will rise because of conflicts and notwithstanding political unrest.

ASEAN's Response to Climate Change

In ASEAN's Final Joint Statement on Climate Change in 2021, ASEAN members recognised that climate change has potential negative impact to basic needs for human life such as food, water, energy, clean and green environment, and health including the supporting ecosystem, and that vulnerable groups, including women, children, older people, people with disabilities and low-income people are disproportionately affected by the adverse impacts of climate change. ASEAN leaders has also called upon the Parties to the UNFCCC to consider how to better understand the impact of climate change on oceans, including through the best available science, while respecting the mandate and competencies of other international legal frameworks and processes such as the United Nations Convention for the Law of the Sea (UNCLOS).

Philippines's Response to Climate Change

In the Philippines, RA 9729 was enacted in 2009 to address the issues of the country's vulnerability to Climate Change. This act has adopted the United Nations Framework Convention on Climate Change (UNFCC) which its ultimate objective is the stabilisation of greenhouse gas concentrations in the atmosphere at a level. The greenhouse effect will prevent dangerous anthropogenic interference with the climate system which should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change. This approach will ensure that food production is not threatened and will enable economic development to proceed in a sustainable manner. The Philippine archipelago and its local communities, particularly those living in poverty will be impacted the most. These effects will create social issues from diseases, food supply, crime and vulnerability of children's future. These children's lives have not reached its peak yet but they

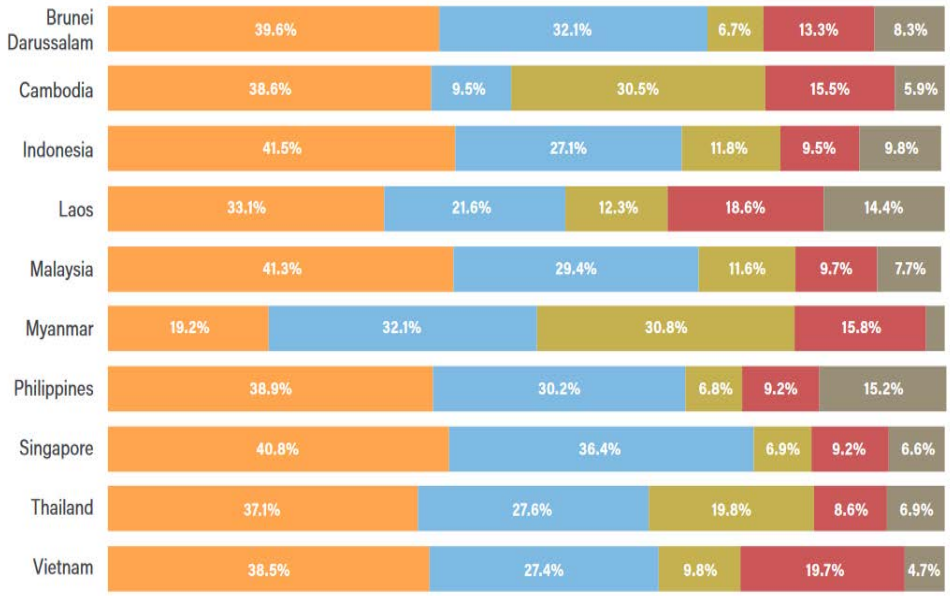
are already forced to live the life WE have given them. A life that will lead to falter if we do not change. Climate Change effects such as rising seas, changing landscapes, increasing frequency and/or severity of droughts, fires, floods and storms, climate-related illnesses and diseases, damage to ecosystems, biodiversity loss that affect the country's environment, culture, and economy. The law provides that the State shall cooperate with the global community in the resolution of climate change. These laws will not patch up the ozone layers. They will not undo the damage that's already done to the environment. But it will drive all of us to have a collective effort in saving this planet for out next generations to come.

The impact of climate change will indeed be felt in the Philippines being a country that produces crops and agriculture. To give an example on this, Palay (rice) and corn are the top produce of the Philippines, however in the data released by the Philippine Statistics Authority (PSA), In Q4 of 2021 and Q4 of 2022 a significance decrease in production has been noticed. For the Palay (rice) from 7,407.58 metric tons to 7,223.12 metric tons, while the corn from 2,125.85 metric tons to 1, 980.05.

Notably in the Climate Change Knowledge Portal prepared by the World Bank Group, it discusses and profile the countries in the world. They have created a Climate Risk Country Profile for policy makers to consider what needs to be done in their legislation that will help to ease out and reduce the risk that Climate Change has. It has been noted that an increase in temperature or heat index is common to all countries especially in the Tropic countries or in the East Asia and the Pacific. The forecast for severe drought is to be experienced from 2080 to 2099. In Section 18, RA 9729 or the Climate Change Law, it empowers the local government units to create initiatives about climate change impact. These initiatives are public awareness campaigns on the effects of climate change and energy-saving solutions to mitigate these effects, and initiatives, through educational and training programs and micro-credit schemes, especially for women in rural areas. As such, metaphysics forecasting using Qi Men Dun Jia will play a vital role as it will not only cover the educational side but including the effectiveness of the strategy to be deployed.

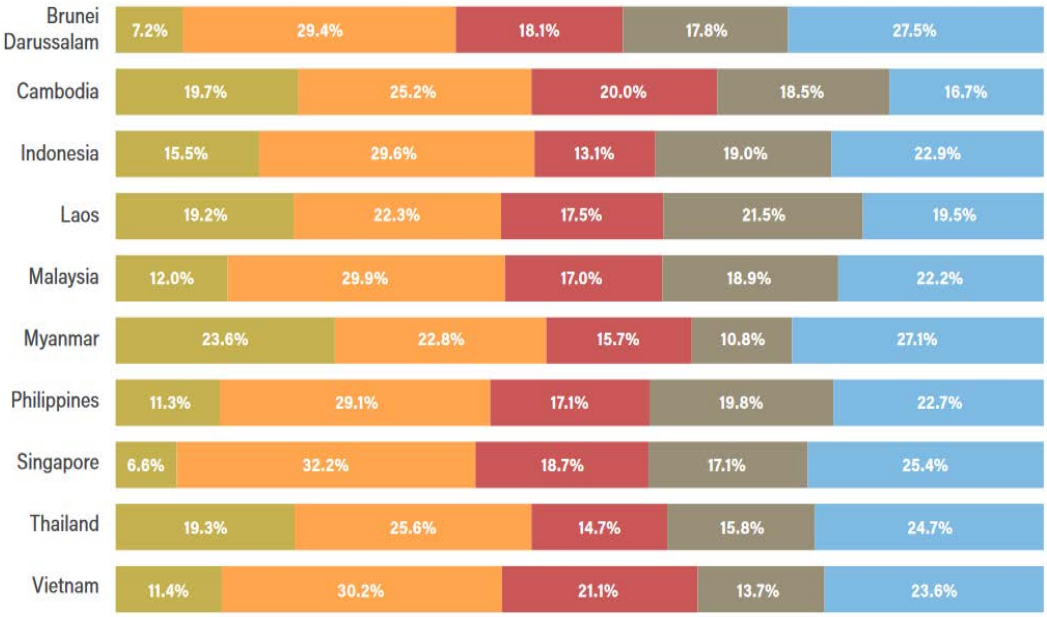
A.M. No. 09-6-8-SC (known as The Rules of Procedure for Environmental Cases) has been approved by the Supreme Court of the Philippines to upheld the Constitutional right of the people to a balance and healthy ecology or ecosystem. This law instructs the courts to ensure that the judgement that they imposed were being followed and implemented.

Figure 3. *ASEAN Survey showing the Filipinos believes that the Government should Shoulder the Cost in Climate Change Measure in the Country*



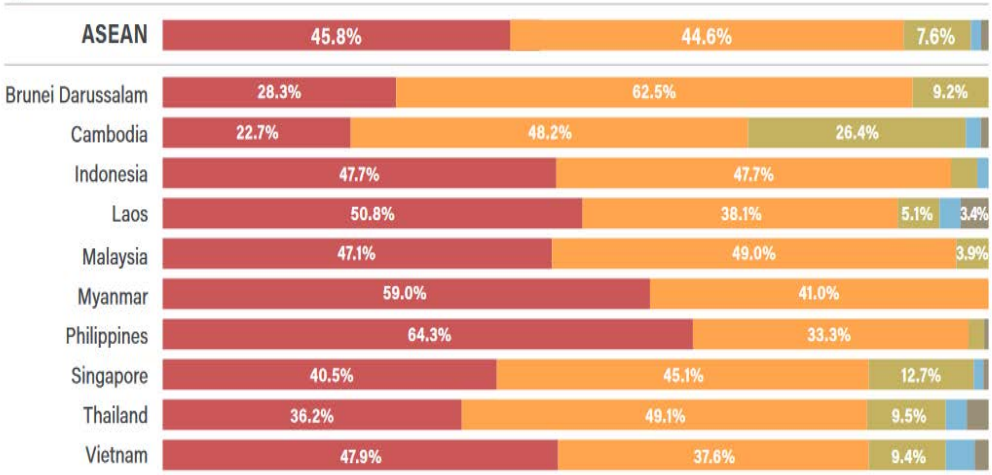
Source: Southeast Asia Climate Outlook 2022 Report by ISEAS Yusof Ishak Institute 2022-CCSEAP-Report-28-Oct, ASEAN Survey 2022 on Climate Change

Figure 4. *ASEAN Survey showing the Filipinos believes that the National Government should discuss to them about Climate Change*



Source: Southeast Asia Climate Outlook 2022 Report by ISEAS Yusof Ishak Institute 2022-CCSEAP-Report-28-Oct, ASEAN Survey 2022 on Climate Change

Figure 5. *ASEAN Survey showing the Filipinos has the Highest Sense of Urgency for Climate Change to be resolved and addressed the soonest*



Source: Southeast Asia Climate Outlook 2022 Report by ISEAS Yusof Ishak Institute 2022-CCSEAP-Report-28-Oct, ASEAN Survey 2022 on Climate Change

Findings

The based on this research the Philippines has a lot of room in making initiatives or projects as regards to its readiness in fighting food scarcity or addressing Food Security. In 2022, Singapore based ISEAS – Yusof Ishak Institute conducted a survey and the results shows that Filipinos are concerned about Climate Change and they want it to be addressed urgently. In their views, the Government should take the cost in making more measures in resolving the matter. Filipinos also believed based on the survey conducted that it is the National Government who should discuss the impact and effects of climate change. There are approximately more than 5 but less than 10 pending House Bills in the Philippine Congress that talks about Climate Change. The pending bills most aimed to either seek for funding to help farmers or to prepare the country further resiliency because of climate. There was no pending bill so far that encourages research and technology to be used as the quickest way to address the emerging threats caused by Climate Change.

Recommended Action

It is further recommended that the National Government of the Philippines through the Local Government Units (LGU) encourage and support researchers to present and fund their study about climate change. This action is aligned with Sec. 18, RA 9729 also known as Climate Change Act of 2009 which states, "*Funding Allocation for Climate Change. —All relevant government agencies and LGUs shall allocate from their annual appropriations' adequate funds for the formulation, development and implementation, including training, capacity*

building and direct intervention, of their respective climate change programs and plans. It shall also include public awareness campaigns on the effects of climate change and energy-saving solutions to mitigate these effects, and initiatives, through educational and training programs and micro-credit schemes, especially for women in rural areas. In subsequent budget proposals, the concerned offices and units shall appropriate funds for program/project development and implementation including continuing training and education in climate change." Funding research projects and presentation like this will encourage young minds to give an input based on the collaborative output together with other researchers across the globe. Research conferences like becomes a silent partner of the government in the implementation of laws. In section 272 of RA 9760 or The Local Government code, states that the additional 1% tax on real property tax may be used for research purposes through Special Education Funds or SEF. Under Sec. 17 (b)(4) of the same code RA 9760 known as the Basic Services provided by the local government units, a research and development must be available as one of the basic services. It is now the challenge of the researcher to the Local Government Unit in the City or Provinces to Support this Research Presentation by adopting the recommendations of this paper.

Conclusions

From all the facts laid out to everyone in the world, it does sound like to stop climate change it seems like you have to stop progress. You have to stop human activity, you have to stop a lot of things that are meant to be done in everyday life. But we can't do all that now can we? This is why the Philippine government will need to support young minds and research in security food supply and most importantly, discover clean and cost-effective energy. These activities of human life will never stop. Even if one country will stop using any carbon emitting device, it will not stop major contributing countries to stop using coal, fuel and other things that will harm the environment. At the very least, while that discovery for clean and cheap energy source is not yet made known to mankind, government laws should exercise regulating activities that will reduce industrial waste from causing harm to the environment and our food supply.

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Philippines Legislation

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