

# Example of report on impact of climate change on developing countries

[Environment](#), [Climate Change](#)



## **The Philippines**

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## **Impact of Climate Change to Developing Countries: The Philippines**

### - Introduction

The Philippines, like many nations, is concerned with the threats posed by climate change due to the various natural calamities that devastates the archipelago. Death tolls, citizen displacement and infrastructure damages are common each time a natural calamity hits the archipelago. The government continues to try its best to prevent further loss of life or displacement each time these calamities occur, however, its efforts are undermined due to climate change. The impact of climate change in the Philippines high anomalies on temperature, rainfall patterns, and high occurrences of tropical storms to enter the country; resulting to the displacement and high vulnerability of people, erratic production patterns, and the loss of life and property to the otherwise rich and beautiful archipelago.

### - Background Information

#### - Geography

The Philippines is an archipelago of 7, 107 islands located north of Indonesia, across the South China Sea. The archipelago stretches 1, 854 kilometers from north to south, while its widest is 1, 104 kilometers. The total land area is 300, 780 square kilometers and only 10% of these islands are inhabited. Two of the largest islands are known as Luzon (105, 708 sq km), and Mindanao (92, 586 sq km) and both islands sustain the 60% of the entire population. Visayas, the third major island of the country, is situated between Luzon (north) and Mindanao (south). The highest points of the

country is Mount Apo with 2,954 meters above sea level. The country also is included in the countries located in the Pacific Ring of Fire and has twenty-one active and two hundred dormant volcanoes located throughout the archipelago.

Figure 1: Map of the Philippines

Source: National Geographic. Philippines Guide. National Geographic Travel, n. d. Web.

As an archipelago, the Philippines has territorial waters spanning 600,000 square miles or 1.5 million sq. km; making fishing a rich industry for many Filipinos. There are at least fifty-nine lakes and 132 major rivers in the country to sustain its freshwater needs, supporting 260,000 cubic meters of ground water reserves .

- People and Society

The Philippines currently has a population of over 105,720,644 people from different ethnic groups scattered in the archipelago. In the 2000 census, 28.1% of the population are Tagalog, 25.3% are minorities, while the remainder are Cebuanos, Ilocanos, Bisaya, and Waray. With regards to life expectancy, 72.71 years is reported to most Filipinos (69 years old for males, 75 years old for females). Mortality rate mothers reach up to 99 deaths per 100,000 live births since 2010, while infant mortality reaches up to 18.19 births per 1,000 live births. The country has the record of 95.4% in terms of literacy rate for ages 5 and up; most completing up to 11 to 12 years in school.

- Government

The Philippines utilizes a republic government with its capital based in Manila. It has 80 provinces and 39 chartered cities, declaring its

independence on June 12, 1898 from Spain and July 4, 1946 from the US. The executive branch of the government is led by the President (currently Benigno Aquino III as of June 30, 2010) as the chief of state and head of the government; and the Vice President (currently Jejomar Binay as of June 30, 2010) for six terms. The legislative branch that handles lawmaking is divided between the House of Representatives/Congress and the Senate for three terms per member. The judicial branch rests on the Supreme Court, consisting a chief justice and 14 associate justices.

#### - Economy

Each year, the country's GDP reaches up to 6.6% or over \$431.3 billion each year, mostly coming from the services sector (57.1%), industry (31.1%) and agriculture (11.8%). The exports from the country have reached up to \$46.28 billion since 2012; while its imports amount to \$61.49 billion. Despite the country's competitive capability in the world market, there is still 26.5% of the population living below the poverty line.

#### - Technology

Experts argue that the Philippines has huge gaps in terms of its research and development capability that affects its technological capability. The country only has 152 scientists and engineers to sustain the population, which is far lower than the standard 6,736 scientists and engineer ratio as prescribed in the international standard. Its agriculture sector remains traditional and underfunded for research and modernization. For the manufacturing sector, it is observed that aside from the problems on organization and policies, most small and medium enterprises lack knowledge of alternative technologies or skills to utilize these modern technologies for their sector.

- Philippine Environment and Climate Change
- Environment of the Philippines

The Philippines, as part of the Pacific Ring of Fire, is a tropical archipelago. The temperatures in the country can reach up to 27°C. The country also has two seasons – wet and dry – affected by the Southwest Monsoon (habagat) from June to October (rainy season) and the Northeast Monsoon (amihan). The average rainfall of the country is 80 inches annually, except for coastal plains that receive higher amounts of rainfall. With the country located in an active typhoon belt, the records up to 20 typhoons annually that can have winds of over 200 kilometers per hour. The country is also at threat of earthquakes due to being a part of the Pacific Ring of Fire, experiencing earthquakes up to 7.9 magnitude. As the result of storms and earthquakes, the country also records instances of landslides, tsunamis and storm surges that devastates several parts of the region. Volcano eruptions are also reported in the country, with some of its active volcanoes like Taal and Mayon showing several volcanic activity throughout the years. The country is also rich in mineral and natural resources, being the sixth largest producer of gold and chromite. In terms of natural resources, the Philippines boasts quality timber or hard woods, but is now currently regulated due to the threat of deforestation. Flora is also one of the Philippines' greatest treasures with almost eight hundred species of orchids and new species of plants discovered. For fauna, five hundred varieties of wildlife are recorded with some only indigenous to the Philippines.

- Changes Brought by Climate Change

In the report of the International Panel on Climate Change, Southeast Asia is

now showing extreme weather patterns such as El Niño and its frequent occurrences for the past 20 years. Longer heat waves in the summer region are recorded in many countries including the Philippines alongside heavy rainfall, which causes floods, landslides and mudflows. The IPCC had also identified that the frequency of tropical cyclones entering the Philippines is becoming more severe as compared to the 1970s, damaging several areas of the country . In terms of the sea levels, the IPCC projects a rise of 0. 18 meters to 0. 59 meters by 2090, not including the possible increase of 2 to 4 meters to the melting of the Greenland and Antarctica Ice Sheets. For the Philippines, it is already projected that a one meter rise on sea levels would affect almost 64 provinces and 703 municipalities, spanning to 138 sq. meters .

In the report of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), it also reflects the IPCC projections. In their analysis, the country is now recording a mean temperature increase of 0. 648° C increase yearly. As far as the tropical cyclone occurrences are concerned, almost an average of 20 tropical cyclones enter the Philippine Area of Responsibility, however, while this frequency is not changing, there is a high increase of typhoons with winds greater than 150 kilometers per hour that devastates the region. The high temperatures of the country is also contributing to the hot-days and cold days index of the country, increasing the number of hot days especially in the higher northern region. Finally, there is also a recorded increase of rainfall events in the country, concentrating mostly in the southern part of Luzon and in Visayas .

- Problems caused by Climate Change

With the international and local experts showing the changes brought by climate change to the country, the consequences or problems it could bring are also severe. Water resources would be mostly at risk to many regions in the country, especially for those depending on dams and waterways for irrigation and water supply. The large decreases in rainfall would affect watersheds and dams, enticing limited production and access to clean water. On rainy season, the country may experience heavy flooding, especially in areas which are classified geologically weak. Flooding would also affect the country's infrastructure such as classrooms, hospitals and evacuation centers. Crops have been reported to show decreases in growth and sterility, especially in rice. It is also observed that the high temperatures and limited rainfall would trigger outbreak of pests and diseases for both plant life and livestock. The coastal resources of the country would also be affected by climate change as sea level rise would cause low-lying islands to become submerged. Finally, climate change may trigger health impacts as the high temperatures and rainfall would trigger the outbreak of water-based and vector-borne diseases to the public .

#### - Recent Natural Disasters

The country had already received its fair share of severe natural disasters that have been fueled by climate change. The most recent natural disaster the country has faced is Super Typhoon Haiyan or Typhoon Yolanda on November 8, 2013. The typhoon had been considered one of the most powerful storms in history, as well as one of the strongest typhoons to hit the Visayas region. The country had been devastated by the Category 5 typhoon for 16 hours, sweeping six provinces with almost 105 million people. The



speeds of Haiyan are record breaking as it had reached up to 235 mph.

Almost immediately, the destruction caused by the typhoon had displaced hundred thousand people and destroying 90% of the region's infrastructure.

Looting had been prominent in the area, especially in Tacloban, Leyte due to the two story high storm surge. Death toll of the typhoon is yet to be estimated, however, the damages it had took is now amounting to \$15 billion

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- Actions Against Climate Change

- Adaptation and Mitigation Measures

The country has formulated several actions to implement adaptation and mitigation measures to limit is greenhouse gas emissions for the energy, transport and agriculture sectors. In the energy sector, the Philippine Department of Energy has applied the New and Renewable Energy program to promote the use of renewable energy systems. The transport sector is also applying the Philippine Road Improvement Agenda that would ensure the maintenance of the country's roads to ensure that vehicles would have easy travel and introduce alternative transportation systems to reduce emissions. Finally, for the agriculture sector, the country is applying the Medium Term Agricultural Development Plan which would create a framework to reduce pesticides in crop lands and implement a Balanced Fertilization Program that would enable distribution of fertilizers and crops .

- Policies against Climate Change

Aside from the measures imposed by the government to alleviate climate change, the government has also created laws to reduce the impact of climate change. The Philippine government had already enacted Republic

Act 9729 or the Climate Change Law, which stresses the utilization education to understand climate change and create synergy between disaster risk reduction and adaptation plans for the country. The National Framework Strategy on Climate Change 2010-2022 is also created in 2010, highlighting the creation of an ecosystem-based management system that would create a sustainable environment for the Filipinos until 2022 . The Philippines is a signatory to the United Nations Framework Convention on Climate Change on August 2, 1994 and the Kyoto Protocol ratified on November 20, 2003 as a means to combat climate change in the country, especially in rural areas. The Kyoto Protocol enables the Philippines to pass national measures to reduce greenhouse gas emissions. The Inter-Agency Committee on Climate Change is also established in 1991 through the ratification of the UNFCCC as a monitoring body for programs related to climate change .

#### - Conclusion

Climate change is here to stay and countries such as the Philippines would need to utilize not just policies to combat climate change, but also active mitigation and disaster preparedness strategies to reduce the impact of climate change in the country. Education must also be enforced for all Filipinos as it would enable the public to be informed of the possible dangers caused by natural disasters fueled by climate change, preventing the loss of life. The Philippines is a very beautiful archipelago threatened by climate change, which is why it is crucial for all to work with government initiative to preserve the country as climate change, as seen in Typhoon Haiyan, can result in immense loss of life and disrupt sustainable development for the future generation.

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