



CLIMATE CHANGE AND THE PARIS AGREEMENT

EXECUTIVE BRIEF

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CLIMATE CHANGE: A GLOBAL AND LOCAL THREAT

Climate change is the long-termⁱ change in climate (i.e. temperature, precipitation, extreme weather, etc.) caused by increase in the greenhouse effect. Greenhouse effect is the process wherein greenhouse gases (such as water vapor, CO₂, methane, etc.) in the atmosphere absorb and re-emit heat being radiated from the earth, trapping warmth. This change results in rising sea levels and extreme weather events such as super typhoons, more heavy rains, more intense heat and heatwaves, and prolonged severe droughts, and consequently enormous losses in lives, livelihoods, properties, and the environment. Vulnerable countries bear the brunt of the impact of climate change.

The world will experience irreversible changes if the global temperature rises beyond 2°C by the end of the 21st century. The United Nations Intergovernmental Panel on Climate Change (IPCC) reported in 2013 that climate change is “unequivocal” and that even if the world begins to moderate greenhouse gas emissions, warming is likely to cross the critical threshold of 2°C by the end of this century, possibly rising by up to 4.8°C.

The IPCC warned that the world cannot afford to keep emitting carbon dioxide as it has been doing in recent years. To avoid dangerous levels of climate change beyond 2°C, the world can only emit a total of between 800 and 880 gigatonnes of carbon. Of this, about 530 gigatonnes had already been emitted by 2011.

According to the World Bank, without effective mitigation measures, climate change could put more than 100 million people into poverty by 2030.

Key findings of the IPCC Fifth Assessment Report (AR5):



Each of the last three decades has been successively warmer than any preceding decade since 1850. In the northern hemisphere, 1983-2012 was likely the warmest 30-year period of the last 1,400 years.



Atmospheric concentrations of carbon dioxide, methane, and nitrous oxide are now at levels “unprecedented in at least the last 800,000 years.”



Global temperatures are likely to rise by 0.3°C to 4.8°C by the end of the century depending on how much governments control carbon emissions.



Sea levels are expected to rise a further 26-82 centimeters by 2100. The wide variation in part reflects the difficulty scientists still have in predicting sea level rises.



The oceans have acidified, having absorbed about a third of the carbon dioxide emitted.

BUSINESS AS USUAL IS NOT ACCEPTABLE. CHANGE IS A MUST.

Current policies do not match the climate ambitions reflected in countries’ climate pledges with the submitted intended nationally determined contributions or INDCs. These would result in warming of between 3.3°C and 3.9°C above pre-industrial levels. The consequences on this path toward 4°C of global warming are potentially devastating.

- ▶ All studies on projected warming from the current INDCs show that by 2100 the temperature rise will far exceed 2°C and result in at least 2.7°C-3°C warming above pre-industrial levels.ⁱⁱ Thus, current climate pledges are collectively wanting of ambition and action to achieve the 1.5°C temperature goal.
- ▶ The half-degree difference between 2°C and 1.5°C warming above pre-industrial levels may not sound like much but can make a big impact on agricultural production, water resources, human health, coral reefs survival, heatwaves, sea level rise, and coastal flooding.

If present collective ambition on GHG emission reductions is not increased, the benefits of keeping below 1.5°C will not be realized. Consequently, impacts will be unnecessarily severe, damages will be unnecessarily large, and the costs of adaptation will be unnecessarily high.

- ▶ The longer significant reduction in emissions is delayed, the more difficult and costly it will be to reach the long-term temperature goal of the Paris Agreement.
- ▶ The recent United Nations Environment Programme (UNEP) Adaptation Gap Reportⁱⁱⁱ showed that costs of adaptation increase rapidly with higher emission scenarios, and this is the case when looking at specific sectors and countries, as well as at the global level. Both from a mitigation as well as adaptation perspective of cost, early action makes economic sense.

Climate change mitigation makes economic sense and is essential for sustainable development. In order to meet the 1.5°C limit, there is a need for economy-wide decarbonization that, if implemented wisely, can come with huge co-benefits in energy security, economic growth, health, and the environment.

- ▶ Renewable energy reduces the vulnerability of the economy to the fluctuations of global market prices of fossil fuels. Instead, it offers reliable and local sources of power, and increases energy independence and security. Investing and harnessing the potential of renewable energy promotes green jobs, and more higher-quality jobs in the energy sector.^{iv}
- ▶ Cleaner air through reduced air pollution lowers the risk of mortality from air pollution-related illnesses, such as heart disease, chronic obstructive pulmonary disease, lung cancer, etc. that would otherwise impose significant economic impacts on national health care systems and economies. Economic losses associated with outdoor air pollution could total to 1% of global GDP or 2.6 trillion US dollars annually by 2060.^v

The country's socio-economic gains could be sustained with the prospects of growth and progress pursued with a low carbon development pathway. The Philippines shall face the climate resilience challenge squarely: the challenge to transform the economy towards green growth, moving away from fossil fuels to a future of green jobs, renewable energy, sustainable transport, protected forests, and enhanced biodiversity. Taking this development path will deliver a wide-range of benefits to the country: health, social, economic, environmental, and disaster resilience benefits to the Filipino people who deserve a better life.

GHG EMISSIONS OF THE PHILIPPINES IN 2014

CO ² EMISSIONS	GLOBAL RANK
99 MtCO ²	41 st
0.17kg CO ² /GDP	102 nd
1t CO ² /person	153 rd

Although the Philippines is not a major emitter of GHG, its economy does not necessarily have to grow through the ways that caused today's climate crisis and increased disaster risk. The country could pursue economic growth the clean and healthy way by well ensuring the protection of the environment and the promotion of sustainable management of renewable energy resources.

reducing disaster risks and achieving the sustainable development goals. The following are examples of climate change impact on our country:



Super typhoons and heavy rains. The IPCC projects more intense rains, more intense tropical cyclones up to 20%, and higher storm surges on top of the sea level rise, resulting in greater risk of coastal disasters.



Intense drought. A study from PAGASA reveals that water collection in the Angat Dam has decreased by 500 million cubic meters for the last 50 years.



Public health emergencies. Higher temperatures also trigger the surge of diseases such as dengue, malaria, cholera, and typhoid. In 1998, when the Philippines experienced the strongest El Niño phenomenon to-date, almost 40,000 dengue cases, 1,200 cholera cases, and nearly 1,000 typhoid fever cases, were recorded nationwide.



Food security threat. For every 1°C rise in minimum temperature, rice plants have been shown to drop yield by as much as 10%. In the past, farmers in the Philippines had to stop growing rice completely during 'El Niño' droughts. An Asian Development Bank report in April 2009 warns that rice production in the Philippines could drop by 50-70% as early as 2020. More than 60% of the Asia-Pacific region's population work in agriculture, fisheries, and forestry - the sectors most at risk from climate change. Climate change will cut agricultural crop yields and hike food prices; every 10% rise will push another 64 million Asians into poverty.



Rising sea levels. Observed sea level rise is remarkably highest (60 cms) in the Philippines, about three times that of the global average (19 cms)^{vi}. Given this, about 70% of the 1,500 municipalities located along the coast are vulnerable to sea level rise. An Oxfam study found that sea level rise, floods that damage fish farms, and the increased acidification of the oceans could reduce farmed fish yield by as much as 90% by 2050.



Negative effects on forests and biodiversity. Philippine forests, host to a large variety of plant and animal species, have been declared as one of the world's biodiversity hotspots. The IPCC predicts that with a 1.5°C to 2.5°C in temperature in a span of 50-100 years, 30% of species would be at risk of extinction.



Adverse effects on economic growth. Based on a study by the Asian Development Bank on the economics of climate change, the country stands to lose 6% of its GDP annually by 2100 if it disregards climate change risks. This same study found that if the Philippines invests 0.5% of its GDP by 2020 in climate change adaptation, it can avert losses of up to 4% of its GDP by 2100 -- clearly a short-term investment with a long-term

IMPACTS OF CLIMATE CHANGE ON THE PHILIPPINES

The Philippines is the number one nation most affected by climate change. The Philippines tops the 2015 Global Climate Risk Index, which lists the Philippines as the number one country most affected by climate change. We were likewise ranked third on a list of countries most exposed to impacts of natural hazards from 1970-2014.

Over the last 10 years, the country has experienced extreme weather events that resulted in severe damage and losses — a phenomenon that scientists trace to global warming. These extremes include severe floods (e.g. Typhoon Ondoy, 2009); devastating storm surges (e.g. Typhoon Yolanda, 2013); deadly landslides (e.g. St. Bernard Southern Leyte, 2006); and extreme droughts (e.g. El Niño, 1997-1998). Typhoons Ondoy, Pepeng, Sendong, Pablo, and Yolanda altogether have claimed the lives of at least 10,000 people, and caused economic damage and losses amounting to almost 900 billion pesos. These have also severely affected areas in Mindanao historically not hit by strong typhoons.

Climate change is a phenomenon that affects the entire Philippine population. We will be hard-pressed to address poverty, hunger and food sufficiency, health and safety, and many other societal and economic concerns, if we treat climate change with a "business as usual" attitude. Scientists all over the world agree that it is imperative to limit the rise in global temperatures to below 1.5°C if climate vulnerable countries are to survive and thrive. Doing so is crucial in





eight-fold gain. A 2004 World Bank study, on the other hand, revealed that the annual economic losses of the Philippines from disasters total to 500 million US dollars or about 4% of GDP.

THE PARIS AGREEMENT AND ITS BENEFITS

The Paris Agreement is a revolutionary framework that aims to stop global warming at 1.5°C - the level scientists consider the threshold for developing countries and climate vulnerable communities to survive and thrive.^{vii} The Philippines signed it together with 175 countries on Earth Day, April 22, 2016. However, it needs Presidential ratification and Senate concurrence on the ratification in order for the Philippines to be considered to have joined it. The Agreement establishes a global warming goal of well below 2°C on pre-industrial averages while pursuing efforts to achieve a goal of 1.5°C.^{viii}

Our country's pledge to reduce greenhouse gas emissions is voluntary and conditional on financial and technical assistance from developed countries. The Philippines submitted to UNFCCC on October 01, 2015 its pledge in an Intended Nationally Determined Contribution or INDC of 70% reduction in greenhouse gas emissions from its 2000 levels by 2030 entirely conditional on external support.^{ix} The Paris Agreement does not dictate a specific emission reduction target upon any country. Instead, it asks upon ratification for a definite voluntary pledge on emission reduction as its Nationally Determined Contribution or NDC in pursuit of the overall global warming goal of 1.5°C. If external support is absent, our country is not obliged to deliver on its target, even if the government has ratified the Paris Agreement.

The Paris Agreement can help the Philippines obtain climate justice. It requires developed countries that are responsible for the bulk of carbon emissions to do more to help developing countries greatly affected by climate change, e.g., the Philippines.^x It is also the first international agreement that requires developed countries to take actions on climate change-affected nations for loss and damages.

The Paris Agreement provides financial support for climate change mitigation and adaptation efforts, among other benefits. This is a huge opportunity for the Philippines to tap the 100 billion US Dollars yearly being mobilized for climate finance. These funds will come in the form of grants, not loans. They can be used for the following: 1) early warning systems, 2) emergency preparedness, 3) research and developments on slow onset events; and, events that may involve irreversible and permanent loss and damage, 4) comprehensive risk assessment and managements, 5) risk insurance facilities, climate risk pooling and other insurance solutions, 6) prevention of non-economic losses, and 7) support to resilience of communities, livelihoods, and ecosystems.

"Common but differentiated responsibilities and respective capabilities" is the core principle of the Paris Agreement. The Agreement recognizes the different capacities, circumstances, and responsibilities of countries.^{xi} This principle means that developed countries take the lead in mitigating climate change and support the climate actions taken by developing countries by providing them finance and capacity building, and supporting and facilitating technology development and transfer. Moreover, developing countries are given leeway in the implementation of their contributions and provided with the tools and means to do so.

The Paris Agreement clearly places the burden of bringing down GHG emissions on developed nations. Under the Paris Agreement, developed nations are tasked to undertake economy-wide absolute emission targets (commitments), while developing nations, which are more vulnerable to climate change, are tasked to enhance mitigation efforts (contributions).^{xii} Moreover, the Paris Agreement recognizes that developing countries will take longer time to peak their GHG emissions.

The Paris Agreement will enter into force when at least 55 Parties to the UNFCCC representing at least 55 percent of total global GHG emissions have ratified it. The Agreement will not be binding to any country until it enters into force; when it does enter into force, it will only be binding to those countries that have ratified it.

In the long-term, the Paris Agreement, if successful, will rein in global warming and reduce the exposure of the Philippines to extreme weather phenomena that adversely affect its national development efforts and food security. Likewise, billions of pesos in damage caused by super typhoons and other extreme weather events that divert limited government resources to disaster relief, recovery, reconstruction, and rehabilitation efforts could instead be used for government programs that enhance the delivery of basic services and benefits to the Filipino people.

“*Decades-long trends of climate change are reaching new climaxes, fuelled by the strong 2015-2016 El Niño. This underlines more starkly than ever the need to approve and implement the Paris Agreement on climate change, and to speed up the shift to low carbon economies and renewable energy.*”

Petteri Taalas
Secretary General,
World Meteorological Organization



ENDNOTES

- i Long term is ten years or greater. The year to year change is called climate variability.
- ii Gutschow et al. (2015). INDCs lower projected warming to 2.7°C: significant progress but still above 2°C. Climate Action Tracker Update. Retrieved July 7, 2016 from: http://climateactiontracker.org/assets/publications/CAT_global_temperature_update_October_2015.pdf
- iii UNEP 2016. The Adaptation Finance Gap Report 2016. United Nations Environment Programme (UNEP), Nairobi, Kenya
- iv The Global Commission on the Economy and Climate. (2016). Better Growth, Better Climate: The New Climate Economy Report. Retrieved July 20, 2016 from newclimateeconomy.report
- v OECD. (2016). The Economic consequences of Outdoor Air Pollution. Retrieved July 20, 2015 from: <http://www.oecd.org/environment/indicators-modelling-outlooks/Policy-Highlights-Economic-consequences-of-outdoor-air-pollution-web.pdf>
- vi Williams. (2014). 11th International Weather Climate Forum. World Meteorological Organization.
- vii **Art. 7.1.** Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.
Art. 8.1. Parties recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.
- viii **Art. 2.1.** This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
- ix **Art. 3.** As nationally determined contributions to the global response to climate change, all Parties are to undertake and communicate ambitious efforts as defined in Articles 4, 7, 9, 10, 11 and 13 with the view to achieving the purpose of this Agreement as set out in Article 2. The efforts of all Parties will represent a progression over time, while recognizing the need to support developing country Parties for the effective implementation of this Agreement.

Art. 4.3. Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

Art. 4.5. Support shall be provided to developing country Parties for the implementation of this Article, in accordance with Articles 9, 10 and 11, recognizing that enhanced support for developing country Parties will allow for higher ambition in their actions.

Art. 4.11. A Party may at any time adjust its existing nationally determined contribution with a view to enhancing its level of ambition, in accordance with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.

x **Art. 9.1.** Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.

Art. 9.3. As part of a global effort, developed country Parties should continue to take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds, through a variety of actions, including supporting country-driven strategies, and taking into account the needs and priorities of developing country Parties. Such mobilization of climate finance should represent a progression beyond previous efforts.

xi **Art. 2.** Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

xii **Art. 4.4.** Developed country Parties shall continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances

