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Regional Resource Centre for Asia and the Pacific

Climate Factsheet
Philippines (PHL)

People and Geography

» PHL is an archipelago; a string of over 7,100 islands.[1]

» It is located in southeastern Asia, between the Philippine Sea and the south China Sea, east of Vietnam.[2]

» PHL's latitude and longitude is 13° 00 N and 122° 00 E, respectively.[3]

One of the countries along the Ring of Fire

It is one of the countries along the Ring of Fire, a belt of active volcanoes and earthquake epicenters bordering the Pacific Ocean; up to 90% of the world's earthquakes and some 75% of the world's volcanoes occur within the Ring of Fire.[2]

» PHL has a total land area of 298,170 sq km while the area of water is 1,830 sq km.[2]

» PHL has three major island groups: Luzon, with an area of 104,687.8 square kilometers; Visayas, 57,201.9 square kilometers; and Mindanao, 94,630.1 square kilometers.[20]

» The country is divided into 17 regions and 79 provinces. There are a total of 116 cities and 1,500 municipalities within these provinces.[20]

» Approximately one third of the total islands are inhabited.[1]

» The country's topography is steep, with the highest peaks reaching nearly 3,000 m above sea level, located at less than 30 km from the sea.[4]

» The topography of Luzon and Mindanao is characterized by alluvial plains, narrow valleys, rolling hills and high mountains while smaller islands have a mountainous territory surrounded by narrow strips of discontinuous flat lowlands on the coastal rims.[20]

» PHL is considered as one of the most biologically rich and diverse countries in the world, and it also has one of the world's longest coastlines.[4]

» It has more than 900 species of orchids representing 100 genera. The country also includes some highly endangered species, like the Philippine eagle, the tarsier, and the mouse deer.[20]

» The country's mineral, oil, gas, and geothermal potential are also significant.[4]

» Its marine and coastal resources yield US$ 3.5 billion annually in goods and services.[4]

The total population in the philippines was estimeated

109.581 million

The UN World Population Prospects estimates the total population in the Philippines was estimated at 109.581 million people in 2019.

» Population is concentrated in regions of good farmlands ; highest concentrations of people are in northwest and south-central Luzon, the southeastern extension of Luzon, and the islands of the Visayan Sea, particularly Cebu and Negros.[2]

» Manila, which is the capital city, is home to one-eighth of the entire national population.[2]

» The Gross Domestic Product (GDP) of the country is 376.8 billion (current (2019) US$) with a growth rate of 6% in 2019.[21]

» The GDP per capita of the country is 3485.84 (current (2019) US$) with a growth rate of 4.6% in 2019.[21]

The % of people employed in 2020[22]

Service sector — 57.6%

Agriculture — 22.5%

Industries — 19.8%

Poverty line

According to the data of 2015, the percentage of **the population living below the poverty line was 21.6.**[23]

» The major crops grown in Philippines under the category of cereals are palay and corn, under fruits are banana, calamansi, mango and pineapple, under non-food and industrial crops are abaca, coconut, coffee, rubber, sugarcane, and tobacco, and under vegetables and root crops are cabbage, cassava, eggplant, garlic, mung bean, onion, peanut, sweet potato, and tomato.[24]

» Oil is the major source of energy accounting for 35.9% followed by geothermal energy (21%) and coal (17.3%) according to 2010 data.[20]

» In 2010, the Philippines imported 42.5% of its energy and the country had the self-sufficiency (indigenous energy) of 57.5%.[20]

» In 2010, hydropower contributed 8.3% of the total indigenous energy supply in 2010.[20]

» Transport remains the biggest energy consuming sector in 2010 demanding 36.8% of the energy.[20]

The forest cover in Philippines

57% → 23%

In 1934, forests comprised more than half (57%) of the country's total land area. In 2010, the forest cover declined by 23% to 6.8 million hectares in 2010.[25]

» The Philippine coral reef area is the second largest in southeast Asia; estimated at 26,000 sq. km. and holds 2,177 species of fish.[20]

» The prevailing government is a presidential republic in PHL.[2]

» Filipinos are predominantly of Malay descent, frequently with Chinese and sometimes American or Spanish ancestry.[1]

» Many Filipinos have Spanish names because of a 19th-century Spanish decree that required them to use Spanish surnames, or last names.[1]

» Elementary education in the Philippines starts at age seven and lasts for six years. Secondary education begins at age 13 and lasts for four years; undergraduate college instruction typically is four years.[1]

Climate

» PHL has a humid equatorial climate characterized by high temperatures and heavy rainfall.[4]

Rainfall

Average annual rainfall is approximately 2,348 mm, but this varies geographically, from 960 mm in southeast Mindanao to over 4,050 mm in central Luzon.[4]

» PHL's climate is tropical and monsoonal and is highly influenced by the El Nino, which is the most important source of rainfall variability from year to year.

» Temperatures average between 24–27 °C annually. Temperature is highest in May and lowest in January.[5]

» Humidity levels are high, averaging around 82% due to the warm moist trade winds that flow through the archipelago, as well as sea surface temperatures, a rich and vibrant vegetative cover and abundant rainfall.[4]

» Most parts of the country experience a dry season from December–May and a cyclonic rainy season from June–November that starts with the arrival of the southwest monsoon. A second rainy season occurs from December–February on the eastern and northern coasts with the arrival of the northeast monsoon. El Niño events, which occur irregularly every 2–7 years, reduce rainfall and weaken cyclone activity. La Niña events, which occur less frequently, increase heavy rainfall and cyclone activity.[5]

» PHL is highly vulnerable to the impacts of climate change, such as sea level rise, increased frequency of extreme weather events, rising temperatures and extreme rainfall.[5]

» PHL sits astride the Pacific typhoon belt and an average of 9 typhoons make landfall on the islands each year - with about 5 of these being destructive; the country is the most exposed in the world to tropical storms.[2]

» Between 1970-2011, 20 most disastrous cyclones have occurred in the country, of which 18 of them occurred in the last two decades (1990-2011).[20]

In 2011 top 10 destructive cyclones caused PhP26.5 billion worth of damage to property.[20]

Vulnerability is due to its high exposure to natural hazards such as

Cyclones
Landslides
Floods
Droughts

The country is also dependent on climate-sensitive natural resources and has vast coastlines where all cities and the majority of the population reside.[5]

» Sea level in the Philippines are rising faster than the global average, increasing the hazard posed by storm surges and threatening permanent inundation of low-lying areas.[5]

» In the Global Climate Risk Index of German watch, the Philippines ranked fifth with respect to the long-term Climate Risk Index (CRI) for the period of 1994 to 2014. In terms of the 2013 CRI, the Philippines was identified as the most affected country (ranked 1st).[19]

Global Climate Change

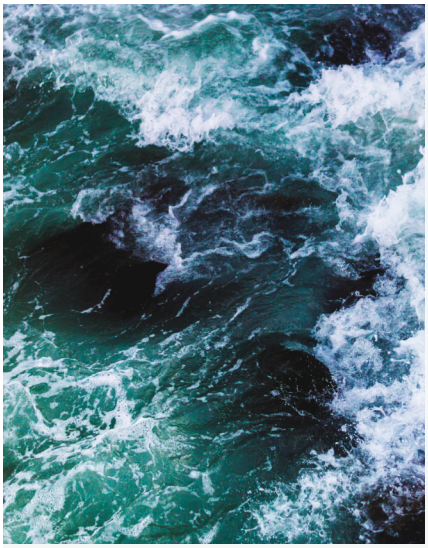
Temperature

» The global mean temperature for 2019 was around 1.1 ± 0.1 °C above the 1850–1900 baseline, used as an approximation of pre industrial levels.[13]

» The Intergovernmental Panel on Climate Change (IPCC) Special Report: Global Warming of 1.5 °C (IPCC SR15) concluded that “Human induced warming reached approximately 1 °C (likely between 0.8 °C and 1.2 °C) above pre-industrial levels in 2017, increasing at 0.2 °C (likely between 0.1 °C and 0.3 °C) per decade (high confidence).[13]

» As of 2019, the same year 2019 was the second warmest year in the 140-year record, with a global land and ocean surface temperature departure from average of +0.95°C (+1.71°F).[7]

» The year 2019 marks the 43rd consecutive year (since 1977) with global land and ocean temperatures, at least nominally, above the 20th century average.[16]



Sea Level Rise

» In 2018, global sea level was 3.2 inches (81 mm) above the 1993 average—the highest annual average in the satellite record (1993-present).[8]

» The rate of sea level rise is accelerating, it has more than doubled from 0.06 inches (1.4 millimeters) per year throughout most of the twentieth century to 0.14 inches (3.6 millimeters) per year from 2006–2015.[8]

» In many areas along the U.S. coastline, high-tide flooding is now 300% to more than 900% more frequent than it was 50 years ago.[8]

» Even if the world follows a low greenhouse gas pathway, global sea level will likely rise at least 12 inches (0.3 meters) above 2000 levels by 2100.[8]

» If we follow a pathway with high emissions, a worst-case scenario of as much as 8.2 feet (2.5 meters) above 2000 levels by 2100t.[8]

» Global mean sea level has risen about 21–24 centimeters (8–9 inches) since 1880, with about a third of that coming in just the last two and a half decades.[17]

» The rising water level is mostly due to a combination of meltwater from glaciers and ice sheets and thermal expansion of seawater as a result of global warming.[17]

» In 2019, global mean sea level was 87.61 mm (3.4 inches) above the 1993 average—the highest annual average in the satellite record (1993-present).[17]

» From 2018 to 2019, global sea level rose 6.1 millimeters (0.24 inches).[17]

» The rate of sea level rise has doubled since 1993 compared to the 20th century average.[17]

Ocean Acidification and Temperature

» The global annual mean atmospheric CO2 concentration exceeded 400 ppm in 2016, which is more than 40 % above the pre-industrial level (280 ppm).[9]

» Over the same period, ocean pH reduced from 8.11 to below 8.06, which corresponds to an approximately 30 % increase in ocean acidity.[9]

» Average surface open ocean pH is projected to decline further with 0.04 to 0.29 pH units by 2081-2100 relative to 2006-2015, depending on future CO2 emissions.[9]

» Ocean heat content has increased at all depths since the 1960s and surface waters have warmed by about 1.3° ± 0.1°F (0.7° ± 0.08°C) per century globally since 1900 to 2016.[3]

» Increasing sea surface temperatures, rising sea levels, changing patterns of precipitation and winds, and ocean circulation are contributing to overall decline in oxygen concentrations in the oceans.[3]

» Ocean oxygen levels are projected to decrease by as much as 3.5% under the higher scenario (RCP8.5) by 2100 relative to preindustrial values (high confidence).[3]

Regional Climate Change

Temperature

- Average temperatures in southeast Asia have risen every decade since 1960.[11]
- As of 2019, Asia had its third warmest year on record, with a temperature of 1.68°C (3.02°F) above the 1910–2000 average.[18]
- Across southeast Asia, temperature has been increasing at a rate of 0.14°C to 0.20°C per decade since the 1960s, coupled with a rising number of hot days, and a decline in cooler weather.[14]
- Vietnam, Myanmar, the Philippines, and Thailand are among 10 countries in the world most affected by climate change in the past 20 years.[11]
- The Asian Development Bank (ADB) estimates Southeast Asia could suffer bigger losses than most other regions in the world. Unchecked, climate change could shave 11 % off the region's GDP by the end of the century as it takes a toll on key sectors, such as agriculture, tourism, and fishing—along with human health and labor productivity.[11]
- The region could shift to a "new climate regime" by the end of the century when the coolest summer months would be warmer than the hottest summer months in the period from 1951 to 1980.[11]
- In the absence of technical breakthroughs, rice yields in Indonesia, the Philippines, Thailand, and Vietnam could drop by as much as 50 percent by 2100 from 1990 levels. Hotter weather is also pushing tropical diseases such as malaria and dengue fever northward to countries like Lao PDR, where they were formerly less prevalent.[11]
- Based on the Green House Gases (GHGs) inventory conducted in 2000, the Philippines emitted a total of 21,767 Gg of CO2e of GHGs. Non-Land Use Change and Forestry (LUCF) sectors- energy contributed 55%, agriculture contributed 29%, waste 9% and industrial processes 7% to the 2000 GHG emissions.[20]

Precipitation

- In southeast Asia, annual total wet-day rainfall has increased by 22 mm per decade, while rainfall from extreme rain days has increased by 10mm per decade.[14]
- Similarly, in southeast Asia, between 1955 and 2005 the ratio of rainfall in the wet to the dry seasons has increased.[14]
- Future increases in precipitation extremes related to the monsoon are very likely in east, south, and southeast Asia.[14]

Sea Level Rise

- The ocean in subtropical and tropical regions will warm in all RCP scenarios and will show the strongest warming signal at the surface.[14]
- In Asia, coastal and marine systems are under increasing stress from both climatic and non-climatic drivers.[14]
- The mean sea level rise will contribute to upward trends in extreme coastal high water levels.[14]
- In the Asian Arctic, rising sea levels are expected to interact with projected changes in permafrost and the length of the ice-free season to cause increased rates of coastal erosion.[14]

Extreme Weather Events

» Some areas, in southeast Asia, could enter into entirely new climate regimes due to frequent occurrence of unprecedented heat extremes.[15]

» Due to projected sea level rise, a million or so people along the coasts of south and southeast Asia will likely be at risk from flooding.[14]

» Higher ocean surface temperatures will increase the intensity of typhoons in the Asia and the Pacific region.[15]

» In November 2013, the PHL was hit by typhoon Haiyan, the strongest storm ever recorded to strike land with 1-minute sustained wind gusts of 315 kilometers per hour.[15]

» It has been shown that a concurrence of high sea surface temperatures, above normal ocean heat content, and elevated sea level considerably exacerbated the strength of the associated devastating storm surge in the PHL.[15]

Future Climate Projections

Temperature

It is projected that the temperatures will increase from **1.8–2.2 °C** by 2050.[5]

» The model, Providing Regional Climates for Impacts Studies (PRECIS) Regional Climate Modelling System, result indicated that significant warming would occur in the middle of the 21st century with extreme warming occurring in June, July, and August and March, April, and May over Mindanao.[20]

» In terms of rainfall, there will be a reduction in average rainfall between March and May by 2050.[5]

» The model (PRECIS) projected a change in annual precipitation from -7.5% to 23% in 2020 and -9.5% to 27.8% in 2050.[20]

» Extreme rainfall is expected in Luzon and Visayas during the southwest monsoon, making the wet season wetter, but decreasing rainfall trends for most of Mindanao.[5]

» An increase in the frequency of extreme weather events is projected for 2050, including days exceeding 35°C, days with less than 2.5 mm of rain, and days exceeding 300 mm of rain.[5]

Sea level of RMI

The sea levels are projected to rise by **0.48–0.65 meters** by 2100.[5]

» The Long-Range Energy Alternatives Planning System (LEAP) analysis estimates that emissions from the energy sector will increase to 100,402 Gg $CO2_{eq}$ under a business-as-usual scenario with an annual growth rate of 3%. By 2020. If certain mitigation options are implemented, it is estimated that there will be a 30% emission reduction which would lower emissions to 70,416 Gg CO2eq by 2020.[20]

Impacts of Climate Change

» Changing climate negatively affects the staple crops such as rice and corn, and cash crops (e.g., coconut).[5]

» Rice, wheat, and corn yields will likely decline by 10 percent for every 1°C increase over 30°C.[5]

» According to the world bank and the National Disaster Coordinating Council (NDCC), over the past 36 years, disasters in the Philippines have caused the damage of about PhP15 billion a year on average. Typhoons alone cost an average of 5% of the GDP.[20]

The Philippines was struck by 75 disasters in 2006–2013

Cyclones

Tropical storms

Floods

that caused $3.8 billion in accumulated damage and losses to the agriculture sector.[5]

An estimated annual **GDP loss of up to 2.2 percent** is projected by 2100 due to **climate impacts on agriculture.**[5]

» Droughts are linked to increased pest infestations, especially during El Niño years. Cyclones and heavy rains bring severe flooding and increase runoff and soil erosion, reducing soil fertility, damaging crops, and altering productivity, especially during La Niña years.[5]

» Climate variability is leading to water stress by reducing the quality and quantity of available water supplies. Droughts reduce water inflows to watersheds and create shortages for agricultural, industrial, and municipal users who account for 82%, 10% and 8% of water withdrawals, respectively.[5]

» Saltwater intrusion of coastal aquifers affects water quality in about 25% of coastal municipalities in Luzon, Visayas and Mindanao; this is expected to increase with sea level rise.[5]

» Climate change threatens the country's valuable coastal ecosystems and fisheries. Increased salinity and sea levels can damage Mangroves while ocean acidification and rising seas and sea surface temperatures can destroy fish and marine habitats, particularly through coral bleaching (around 95% of corals along the coasts of PHL suffered bleaching during the 2009–10 El Niño).[5]

» The rise in ocean temperature has also affected blue whale shark sightings in Donsol.[20]

» More than 60% of the coastal population's livelihoods depend on marine resources, and coral reefs and mangroves are valued at $2 billion and $83 million per year, respectively, for their contributions to fishing, tourism, and storm protection.[5]

Mitigation and Adaptation to Climate Change

Adaptation

» In 1989, the Philippines, through the adoption of the framework of the Philippine Strategy for Sustainable Development (PSSD), formally took on sustainable development as a guiding principle in its development efforts. PSSD identified 10 strategies for sustainable development, which were elaborated into the Philippines Agenda 21 after the Rio Earth Summit in 1992.[20]

» Prior to the signing of the United Nation Framework Convention on Climate Change (UNFCCC) in 1992 then Philippine President created the Inter- Agency Committee on Climate Change (IACCC) in 1991 through Presidential order. The IACCC coordinates, develops, and monitors activities related to climate change in the country and formulates policy actions and recommendations, which shape the Philippines' positions in international negotiations on climate change.[20]

» In 1992, the Philippines signed the UNFCCC and agreed to the mandate of protecting the climate system which was adopted in 1994.[20]

» The Climate Change Act was enacted in 2009, reiterating the urgency of addressing the climate problem concertedly at the local, national, and global levels which resulted in the creation of the Climate Change Commission (CCC).[20]

» The Philippines established a Climate Change Commission to facilitate coordination across relevant agencies and institutions. The Commission has identified, as a priority, the need to make key sectors climate-resilient, and to work with local governments to address adaptation and disaster risk reduction needs.[4]

» The Cabinet Cluster on Climate Change Adaptation and Mitigation (CCAM) was created to increase coordination among different government agencies with key roles on adaptation and mitigation.[19]

» The National Disaster Risk Reduction and Management Law (2010) serves as a guide to mitigate impacts of disasters and increase resilience to natural disasters.[19]

» Ongoing programs for Disaster Risk Management (DRM) include hazard mapping, establishing early warning systems, exploring risk sharing mechanisms such as crop insurance, community-based DRM, and capacity building. These are currently the purview of several government agencies, such as National Economic and Development Authority (NEDA), National Disaster Coordinating Council (NDCC), and Department of the Interior and Local Government (DILG).[4]

» Adoption of the National Framework Strategy on Climate Change (NFSCC) in 2010 also laid the foundation and roadmap for addressing climate change.[19]

The National Climate Change Action Plan (NCCAP) in 2011 guides the Government to implement short-term, medium-term, and long-term actions in seven thematic areas of[19]
Food security
Water security
Ecological and environmental stability
Human security
Climate smart industries and services
Sustainable energy
Knowledge and capacity development

» The National Framework Strategy on Climate Change (NFSCC) and the National Climate Change Action Plan 2011-2028 were also crafted to ensure long term plan for climate change adaptation and climate change.[20]

» Promulgation of complementary sectoral laws (eg. Ecological Solid Waste Management Act of 2000, Biofuels Act of 2006, and the Renewable Energy Act of 2008) that led to the increase in the utilization of renewable energy sources, reinforcing and institutionalizing climate change mitigation actions, as well as, creating opportunities for synergy and collaboration for an efficient utilization of limited resources.[19]

Agriculture 2020 (PA 2020) envisions a holistic view of agriculture. PA 2020 will use three strategies:[20]
Public sector technology development
Promotion and investments
Governance reforms

» For the energy sector, the National Energy Efficiency and Conservation Program (NEECP) is an ongoing program of the Department of Energy (DOE) targets the transport sector, industrial and commercial sectors, and the general public, to practice energy efficiency and conservation.[20]

» The Philippines has introduced many policies and programmes focusing on the water resource, forestry, and biodiversity sector. These include the Integrated Social Forestry Program (ISFP), Community-Based Forest Management (CBFM) Program, Ancestral Domains Program (ADP), Coastal Environment Program (CEP), Forest Land Management Program (FLMP), Community Forestry Program (CFP), and the Socialized Industrial Forest Management Program (SIFMP).[20]

» CBFM was adopted as the national strategy for sustainable forest management and social justice.[20]

» Internationally funded adaptation efforts have partnered with local institutions to promote integrated coastal resource management principles, biodiversity conservation, and sustainable agricultural practices.[4]

» Government-initiated adaptation measures to address the impacts of climate change for the agricultural sector are:[20]

- Review of programs implemented vis-a-vis climate change risks (medium term)
- Mainstreaming climate change in plans and programmes
- Review of subsidies for fertilizers, seeds etc and modify, if necessary, and provide support services to influence farm level practices
- Establishment of risk transfer mechanism
- Fund research and develop technologies
- Establishment and enhancement of post-harvest facilities
- Enhancement of the implementation of the agrarian reform programme for marginalized farmers

Government-initiated technologies to address the impacts of climate change for agricultural sector are:[20]
Development of crop varieties that increase tolerance and suitability
Geographic Information System (GIS)-based mapping of climate, soil, and water resources for crop/variety matching
Water management innovations, including efficient and effective irrigation technologies
Decision support tools such as weather/climate forecast/information
Farmers' field schools/demonstration farms

» Government-initiated farm production and management practices to address the impacts of climate change for agricultural sector are:[20]

- Crop diversification
- Adoption of organic farming
- Community based seed production
- Sustainable rice intensification
- Rain-water collection for irrigation
- Change in agricultural calendar to fit observed climatic changes
- Implementation of selective irrigation practices

Private – led interventions to address the impact of climate change on agricultural sector are:[20]
Behavioral change
Change in consumption pattern
Farm financial management
Diversification of livelihoods to augment family income
Establishment of cooperatives to lower costs of production inputs and develop marketing strategies
Empowerment of women in farm management

» Through the Local Government Code, the Local Government Units (LGUs) are mandated to implement reforestation and related forestry projects in partnership with the Department of Environment and Natural Resource (DENR) and local communities. Among the most successful LGU reforestation initiatives are those conducted by the provinces of Nueva Vizcaya, Bukidnon and Bohol.[20]

» Institutional efforts to adapt to climate-related impacts in both agriculture and water requirements of the sectors include:[20]

- Establishment of small impounding systems such as Small Water Impounding Project (SWIP) diversion dams, shallow tube well small farm (Bureau of Soila and Water Management (BSWM), 2000)
- Promotion of soil and water conservation (BSWM, 2000)
- Inclusion in the Philippine Medium-Term Philippine Development Plan of a directional plan to guide all levels of governance in the implementation of integrated water resource management (IWRM) at all levels of the government (National Water Resource Board (NWRB), 2008)

» Adaptation measures for coastal sectors includes:[20]

- Modification of setback policies to address climate change/sea level rise
- Conduct of research studies on salt-water intrusion, fisheries, and aquaculture
- Strengthening of the disaster management program
- Improved typhoon warning system
- Flood prevention/protection
- Shoreline stabilization/ preparation of hazard and vulnerability maps to floods and to probable sea level rise
- Stopping further conversion of Mangroves into fishponds
- Putting in place the Integrated Coastal Management (ICM) program and expanding the Coastal Environment Program (CEP)
- Massive upland and coastal reforestation, including the expansion of community-based Mangrove reforestation program
- Information, Education, and Communication (IEC) and awareness-raising program
- Monitoring sea level rise and climatological data: Tidal gauge stations (costly) vs. indigenous methods (staff gauges)
- Installation of the Geographical Information System (GIS)

» For the observation and forecasting of weather and other climatological conditions of the Philippine, Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) has been established.[20]

» PAGASA has developed national and provincial climate scenarios for 2020 and 2050 which are used as basis for the review and climate-proofing of all national, regional and local land use and development plans. Similarly, a risk assessment methodology integrating disaster risk reduction and climate change adaptation is used in the vulnerability and adaptation assessment for all the country's 81 provinces.[20]

» The Oceanography Division of the Coast and Geodetic Survey Department (CGSD) of the National Mapping and Resources Inventory Authority (NAMRIA) is the responsible unit for the collection of physical oceanographic data such as tides, currents, temperature, salinity, and depth.[20]

» Primary tide stations, for continuous tidal observations, are in strategic coastal areas within the different seaports of industrial and economic convergence centers such as Manila, Cebu, Davao, and Legaspi.[20]

» The Department of Science and Technology launched the Nationwide Operational Assessment of Hazards (NOAH) for early warning to vulnerable communities against floods, to undertake disaster science research and development using modern technologies and recommend innovative information services in government's disaster prevention and mitigation efforts.[20]

» There are four Philippine tide stations in Manila, Cebu, Legaspi, and Davao that are registered in the network of tide stations under the Intergovernmental Oceanographic Commission's (IOC) Global Sea Level Observing System (GLOSS) for worldwide tidal scientific studies.[20]

» A number of climate change projects, analyses and programs are underway in the Philippines. These aim to improve understanding of the potential impacts of climate change in key sectors, reduce vulnerability to current climate variability and future climate change, and seek to gain insights and experience on a range of potential adaptation strategies.[4]

» The ongoing efforts for climate change adaptation can be summarized as follows:[4]

- Climate Change in Coastal Areas (World Bank)
- Philippines: Climate Change Adaptation Program (World Bank)
- Climate Forecast Applications (CFA) for Disaster Mitigation in Indonesia and the Philippines (ADPC, IRI)
- Cities and Climate Change Initiative (UN-Habitat)
- Coral Triangle and Climate Change: Ecosystems, People, and Societies at Risk (WWF)
- Strengthening Capacities for Climate Risk Management and Disaster Preparedness in Selected Provinces of the Philippines (FAO)

Mitigation

» The Philippines' conditional Paris Agreement 2030 Nationally Determined Contribution (NDC) target is rated "2°C compatible" and the Government planned to submit its revised NDC in 2020[12]

» Current policies are not yet on track to meet the NDC target, with one of the key issues being the projected growth of coal.[12]

» In 2015, the Philippines had around 12 GW of coal-fired power capacity under construction or in the pipeline. Since then, it has built around 3.2 GW, with another 14.6 GW on the way, triggering concerns over the potential creation of stranded coal assets worth billions.[12]

» In 2019 several regulations that support further uptake of renewables are under discussion or have been approved.[12]

» Improvements in the Green Energy Option Programme, that allows for the users to choose renewable energy suppliers, and the Net-Metering Programme are underway in the PHIL.[12]

» Green Energy Option Programmes aim to add clarity for end-users, Renewable Energy (RE) suppliers, and network service providers facilitating renewable energy choices and to encourage active participation of consumers in power generation.[12]

References

[1]National Geographic. Available at: https://kids.nationalgeographic.com/explore/countries/philippines/. (Accessed: 2nd June 2020)

[2]The world Fact Book. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/rp.html. (Accessed: 2nd June 2020)

[3]Maps of the World. Available at: https://www.mapsofworld.com/lat_long/philippines-lat-long.html. (Accessed: 2nd June 2020)

[4]The world Bank. (2011). Vulnerability, Risk Reduction, and Adaptation to Climate Change: Philippines.

[5]USAID. (2017). Climate Change Risk Profile: Philippines.

[6]NOAA National Centers for Environmental Information. (2020). Assessing the Global Climate in May 2020. Available at: https://www.ncei.noaa.gov/news/global-climate-202005 (Accessed: 5th June 2020)

[7]NOAA National Centers for Environmental Information. (2020). Global Climate Report - Annual 2019. Available at: https://www.ncdc.noaa.gov/sotc/global/201913 (Accessed: 5th June 2020)

[8]Lindsey, R. (2020). Climate Change: Global Sea Level. NOAA, Climate Watch Magazine (2019). Available at: https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level (Accessed: 6th June 2020)

[9]European Environment Agency. (2020). Ocean acidification. Available at: https://www.eea.europa.eu/data-and-maps/indicators/ocean-acidification-2/assessment (Accessed: 6th June 2020)

[10]Jewett, L., & Romanou, A. (2017). Ocean Acidification and Other Ocean Changes. In D.J. Wuebbles, D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock. (Eds.). Climate Science Special Report: Fourth National Climate Assessment, Volume I. U.S. Global Change Research Program, pp. 364-392, doi:10.7930/J0QV3JQB.

[11]IMF. (2018). Boiling Point. Available at: https://www.imf.org/external/pubs/ft/fandd/2018/09/southeast-asia-climate-change-and-greenhouse-gas-emissions-prakash.htm#:~:text=Average%20temperatures%20in%20Southeast%20Asia,by%20Germanwatch%2C%20an%20environmental%20group. (Accessed: 7th June 2020)

[12]Climate Action Tracker. (2020). Country summary: Philippines. Available at: https://climateactiontracker.org/countries/philippines/ (Accessed: 7th June 2020).

[13]World Meteorological Organization. (2020) WMO Statement on the State of the Global Climate in 2019. Available at: https://library.wmo.int/index.php?lvl=notice_display&id=21700#.XxEDuGrivIU (Accessed: 12th June 2020).

[14]Hijioka, Y., Lin, E., Pereira, J.J., Corlett, R.T., Cui, X., Insarov, G.E., Lasco, R.D., Lindgren, E., & Surjan, A. (2014). Asia. In V.R. Barros, C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (Eds.). Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate ChangeCambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1327-1370. Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap24_FINAL.pdf (Accessed: 30th July 2020).

[15]ADB. (2017). A Region at Risk the Human Dimensions of Climate Change in Asia And the Pacific.

[16]NOAA. National Centers for Environmental Information. (2020). State of the Climate: Regional Analysis for Annual 2019. Available at: https://www.ncdc.noaa.gov/sotc/global-regions/201913. (Accessed: 20th May 2020)

[17]Lindsey, R. (2020). Climate Change: Global Sea Level. National Oceanic and Atmospheric Administration: https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level.

[18]NOAA National Centers for Environmental Information, State of the Climate: Global Climate Report for Annual 2019, published online January 2020. Available at: https://www.ncdc.noaa.gov/sotc/global/201913. (Accessed: 7th January 2021)

[19]Republic of the Philippines. (2015). Intended Nationally Determined Contributions Communicated to the UNFCCC. Available at: https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Philippines/1/Philippines%20-%20Final%20INDC%20submission.pdf (Accessed: 7th January 2021).

[20]Republic of the Philippines. (2014). Second National Communication to the United Nation Convention on Climate Change (UNFCCC). Available at: https://unfccc.int/resource/docs/natc/phlnc2.pdf (Accessed: 7th January 2021).

[21]World Bank Data. Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=PH. (Accessed: 8th January 2021).

[22]World Bank Data. Available at: https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=PH. (Accessed: 8th January 2021).

[23]World Bank Data. Available at: https://data.worldbank.org/country/PH. (Accessed: 8th January 2021).

[24]Philippines Statistics Authority. (2020). 2015-2019 Crop Statistics of the Philippines. Available at: https://psa.gov.ph/sites/default/files/Crops%20Statistics%20of%20the%20Philippines%2C%202015-2019.pdf (Accessed: 8th January 2021).

[25]Senate of the Forest. (2015). Philippines Forest at a glance. Available at: http://legacy.senate.gov.ph/publications/SEPO/AAG%20on%20Philippine%20Forest_Final.pdf

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