
Philippine's Convention on Biodiversity Strategy Plan and Management

World. Disasters. Calamity. Scarcity. Hunger. Crisis. Extinction. Earth. Humanity. Survival. Keywords in understanding the flow of life in the world. These are concept designated in the minds of people that creates a dilemma of worry and fear for a dangerous world we live in and so these terms mentioned can further our own understanding of worldly-mundane things. Humanity's survival is dependent to its surroundings as we are part of a global scale ecological system that is composed of other organisms and ecological resources that drives the world's natural processes and humanity's own survival. With that being said, we can clearly say that we people rely on our surroundings in order for us to survive.

We are dependent on our environment and so a world without these things would be detrimental to humanity, leaving us lifeless and meaningless without any function. It is already given that 71% of the vast world that we live in is water and the remaining 29% is land. Each of these spheres is fundamental to every living spec of life in the world and so every creature is dependent on everything else. This links all of us through the satisfaction of our needs and wants to be met with worldly things found around us and so the state of the things in this world will have compromise the survival of the human race. This is how Biodiversity had defined its significance and relevance to the world through time.

According to the Convention on Biological Diversity, Biological Diversity is the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems. (Convention on Biological Diversity, 1992) Biodiversity can be defined simply as the variety of all forms of life. This includes the variation of genes, species as well as animal habitats and ecological systems that can be found in the world. The world has nations that contributes largely on its biodiversity which are identified as The 17 Megadiversed Nations. These are the Nations defined by Conservation International, an american non-profit environmental organization, that are considered as rich in terms of biodiversity with a huge number of endemic organisms. Endemic organisms are organisms that are native to that particular country. An example of this is: (1) The Philippine Freshwater Crocodile which is endemic in the Mindoro Area; (2) Tamaraw which is native in Mindoro Island; and (3) The Philippine Eagle which is endemic in Southern Philippines among many others. These 17 Megadiversed Nations includes United States of America, Mexico, Colombia, Ecuador, Peru, Venezuela, Brazil, Democratic Republic of Congo, South Africa, Madagascar, India, Malaysia, Indonesia, Philippines, Papua New Guinea, China, and Australia. They are considered Megadiversed Nations under the consideration, according to Conservation International, to have: (1) at least 5000 of the world's plants as endemics: and (2) marine ecosystems within its borders which follows the pricipile of endemism. Other consideration includes such as animal and invertebrate endemism, species diversity, higher-level diversity, ecosystem diversity and presence of tropical rainforest ecosystems.

Considering this, these Nations with their vast biodiversity composes 70% of the world's Biodiversity. The Philippines is considered as one of the world's 17 Megadiversed Nations as the country is considered a pool of natural wonders ranging from flourishing lands with fertile

soil, bodies of water, land forms etc. As the Philippines is geographically located in the tropics and is part of the Coral Triangle, which is a term referring to a marine area in Southeast Asia, there is no doubt that the Philippines can boast various organisms native to its own lands. 85.4% of Amphibians, 67.5% of Reptiles, 65.8% of Plants, 61.1% of Mammals, 34.8% of Birds and 23% of Freshwater Fishes is endemic. Because of the large percent mainly focusing on Amphibians and Reptiles native to the Philippines, the Philippines is considered as an important place for Reptile-Amphibian diversity on Southeast Asia as stated by Conservation International and Biodiversity Management Bureau of DENR. With that being said, the Philippines also houses ecological systems that have the country's diversity. This includes forests, wetlands, and coastal/marine ecosystems. From 29,987,008 hectares of the Philippines, 6,839,717 hectares is covered purely of forests as of 2010.

According to the data released by the Food and Agriculture Organization in 2011, this 6,839,717 hectares brought up about USD 528.7 million to the economy in 2011 which is 0.2% of the GDP of the country through the forestry sector. 49% of the Filipino population is directly employed by the Forest Sector. Wetlands and Inland waters in the Philippines varied with various types under it. The types of marsh, peat swamp and water that are included are: (1) inland wetlands which includes springs, creeks, rivers, streams, waterfalls, swamps, marshes, ponds, wet caves and lakes; (2) coastal wetland which includes bays, straits, seagrass beds, coral reefs, sand bars, mud, sand or salt flats, mangrove, swamps, estuaries, marine shores and saline lagoons; and (3) human-made wetland which includes fish and shrimp ponds, farm ponds, salt pans, dams, small water impounding areas, reservoirs, irrigated agricultural lands and canals. 60% of the country's population lives in coastal areas and so many Filipinos, especially those small-scale artisanal and commercial fishers depend on coastal and marine ecosystems like mangroves, and coral reefs, as a source of food and livelihood. This is because, as the Philippines Biodiversity Conservation Priorities or PBCP, identified that there are 216 lakes, 421 principal rivers and 22 marshes, swamps and lakes all over the country.

The Biodiversity Management Bureau or BMB has identified 756 inland wetlands with 651 or 86% being river systems, 83 or 11% being lakes, 16 or 2% being water storage/reservoirs, four or 1% being ponds and two marshes/pools (Unpublished report on the Inventory of Inland Wetlands in Luzon, Philippines, 2014) Because of the expansive Inland Water, it houses 316 fish species wherein 121 or 38% of this number is native only to the Philippines while the 76 or 24% are species threatened of extinction. The Philippines is also endowed with Cave Biodiversity with more than 1,500 caves recorded nationwide with a number of caves that are not yet fully evaluated, studied, analyzed and assessed with depth. With an extensive coastline of 36,289 km, there is no doubt over the huge Coastal and Marine Ecosystems that the Philippines have. As mentioned as being in the middle of the Coral Triangle, the marine ecosystems rich ecological network generates a variety of underwater products such as fish, mussels, crustaceans, sea cucumbers, and seaweeds while many commercially important marine species, like salmon, grouper, snapper, striped bass, and invertebrates (such as shrimp, lobster, crabs, oysters, clams, mussels). All these marine life organisms depend on the coastal areas as their nursing grounds for the little fish hatchlings to grow.

According to the Philippine Milestones on Coastal and Marine Biodiversity, Coral Reefs amass a contribution of 70% to the total fisheries production. The Philippines houses over 468 species of scleractinian corals and more than 50 species of soft corals with 2.5 Million Hectares of coral reefs in the country. These reefs are home to a large number of marine life including 1,755 reef-associated fish species, 1,062 species of seaweeds, 820 species of algae

and 648 species of mollusks. As of 2009, The Philippines has the second highest seagrass diversity in the world with a distributed area of about 2.73 Million hectares. The Philippines has its god-given gifts, endowing a vast space of natural wonders and resources for human use but pressures for Biodiversity Loss arise with humanity's main focus for survival. These pressures includes Habitat Loss and Degradation, Overexploitation, Pollution, Climate Change and Invasive Alien Species. Of the various processes leading to biodiversity loss, the most notorious is habitat destruction (Pimm and Raven, 2000) To put it simple, Habitat destruction is the process of rendering an ecological area unsuitable to support life. These destruction of ecological systems includes deforestation, mining and the degradation of Marine Ecosystems.

In the Philippines, Deforestation is widespread with Logging, kaingin or slash-and-burn cultivation, forest fire and other natural phenomena such as pests and diseases and natural calamities. These has negatively affected the country since the country is surrounded by a huge body of water namely, the Pacific Ocean, which produces 60% of the world's Typhoons which passes through the country. The forests are the natural sponges of the lands to prevent soil erosion and the like and so the forests have a fundamental role in our safety from these natural disasters and yet illegal logging and slash-and-burn cultivation is rampant in areas of Biodiversity Importance which raises concern. Comparing the Total forest cover from 2003 which 7,168,400 hectares lowered to 6,839,717 hectares in 2010 with a difference of 328,683 hectares. A seemingly small number compared to millions and yet it is a different matter if this number of decrease stayed constant and sustained itself will show concerns. This will have an effect as forest ecosystems provide livelihood and fundamental goods and services that is needed by people. Mining is another cause of Habitat Destruction as it is the extraction of minerals and other earthly substances needed for production and industrialization.

The Philippines is said to host one of the world's biggest deposits of undiscovered minerals, especially of gold and copper (Herrera, 2012) with mineral reserves are estimated at about 7.1 billion tonnes of 13 known metallic and 51 billion tonnes of 29 non-metallic minerals (Alyansa Tigil Mina [ATM], 2011). Mining is needed for the Philippines is dependent on Geothermal, Coal, and Oil as its energy source. Between the time period of 2004 and 2010, many of the mining companies' application for explorations and permits were filed and with these many laws were issued as mitigating measures to prevent any environmental implication at most however this didn't stop the Mining Sector in destroying biodiversity with mining causing habitat degradation and both physical displacement and cultural dislocation of Indigenous People in the country.

According to the Indigenous People's Pact, Environmental investigations such as Environmental Investigative Missions have revealed that, inter alia, heavy metal content and other toxic substances were elevated in the soil and waters, causing the deterioration of aquatic life and loss of flora and fauna. The loss of aquatic life is a major change in the life support system of the communities that rely on the river for daily sustenance. Not only are livelihood sources affected, the general biodiversity is also damaged (Asia Indigenous People's Pact, 2012). Because of the Degradation of Marine Ecosystems, this poses a huge threat marine life as to 30-50 percent of Philippine seagrass beds have been lost due to industrial development, ports, and recreation in the last 50 years. The coastal waters of the Philippines is still terrorized by illegal fishers as Poor coral covers are in 40% of the country's reefs as of 2004. The rise of coastal population also contributed to the degradation as the people solely depends on the waters on their shores and so these waters are the lifeline of coastal populations.

Overexploitations also posed major problems in Biodiversity as it exhausted major sources of

natural resources to compensate with the growing population and so raise to the use of environmentally destructing methods such as Illegal Fishing and Illegal Wildlife Trading which attributes Philippine losses in 2008 in the amount of US\$598 million to poaching by foreign vessels and blast and cyanide-fishing (BFAR, 2008 in Torell et al., 2010) and comprised of 1,162 heads of reptiles (42%), birds (39%), mammals (4%) and arachnids (16%) and by products and derivatives from wildlife (Biodiversity Management Bureau, 2009-2013) Pollution destroyed majority of the country's nature with corresponding to the land forms, water bodies and the atmosphere. Climate Change also gave a concerning contribution to the destruction biodiversity and Human Life through Ocean acidification, sea level rise, extreme weather conditions, elevated sea surface temperature are going to affect not only the biodiversity of our marine resources but also coastal livelihoods, infrastructure, and the achievement of poverty and hunger. Last, but not the least, the entrance of invasive Alien species poses as a threat as these organisms destroys the balance in the ecosystem hasten the extinction of threatened species and reduce the diversity of indigenous and endemic species through predation, competition, parasitism, diseases, hybridization, and species displacement caused by environmental and habitat change. Alien species, as defined during the CBD, include any species that are introduced into new habitats by human intervention; usually they are invasive or aggressive.

A total of 70 IAS under 40 families were classified in a profiling done in 16 PAs in the Philippines (ERDB, 2013). The loss of Biodiversity isn't bounded only in the Philippines but rather of global concern. As stated by Globalissues.org, The International Union for Conservation of Nature (IUCN) notes in a video that many species are threatened with extinction. In addition, At threat of extinction are 1 out of 8 birds 1 out of 4 mammals 1 out of 4 conifers 1 out of 3 amphibians 6 out of 7 marine turtles 75% of genetic diversity of agricultural crops has been lost 75% of the world's fisheries are fully or over exploited Up to 70% of the world's known species risk extinction if the global temperatures rise by more than 3.5°C 1/3rd of reef-building corals around the world are threatened with extinction Over 350 million people suffer from severe water scarcity Because of our richness in natural wonders in both land and water aspects, the forestry of our country serves as a vital asset in our economic and well-being. It gives jobs to people who needs money and raw-materials to business men and citizens who needs the resources for their everyday life. The Philippines government as well international entities has its own shared responsibilities in conserving and maintaining Biodiversity in the World.

The Philippine Government in the side of Judicial Process, has its own sets of laws, regulations and rulings in regards to the environment and violations that are equipped with penalties in preventing and avoiding further destruction of nature through human-made problems and inappropriate methods. The Philippines is also entitled to International Commitments to the Conservation of Biodiversity through signatory Multilateral Environmental Agreements between nations for furthering the protection of the world environment. These includes the first Convention on Biological Diversity (CBD), Framework Convention on Climate Change (FCCC) and the Convention to Combat Desertification (CCD).

Aside from this, the Philippines also has its own Philippine Biodiversity Strategy and Action Plan 2015-2028 with the theme of Bringing Resilience to Filipino Communities. The action plan formulated by the Philippine government has its vision of: By 2028, biodiversity is restored and rehabilitated, valued, effectively managed and secured, maintaining ecosystem services to sustain healthy, resilient Filipino communities and delivering benefits to all. The direct program

interventions are: a) restoration of ecosystem functions; b) promotion of biodiversityfriendly livelihoods; and c) strengthening law enforcement (Philippine Biodiversity Strategy and Action Plan, 2014) Aside from a National Action plan, the International entities such as UN promotes the Millennial Development Goals (MDGs) and the Sustainable Development Goals (SDGs) with regards to creating a future without poverty and hunger, and safe from the worst effects of climate change, meeting the needs of the present without compromising the ability of future generations to meet their own needs. In this perspective with the cooperation of the global community and the efforts executed, it is really evident that the world is finding every way it can to fix the problems that it brought to itself.

Unfortunately, maintaining our natural wonders is not that easy. To this effect, instead of what is supposed to be an advantage for our country in terms of economic and human welfare, our natural gifts became a liability to us Filipinos. Many does not realize how important our natural resources and wonders are. If given enough focus/emphasis and funds, it will give us the fruit of economic growth and a better lifestyle for Filipinos. But even though there are so many ways the government tried, why are we still failing? Why are we still in that point where the situation of the world is still at its worst? Where does the real change start? The Change starts first within the people. Many times have we denied of our obligations to this world and yet we still failed on obliging with it. But with a little bit of effort, one person after another can change the course of the world as we know it. It just starts with a trash going to the proper bin that can save a whole forest of organisms threatened of extinction. And so with that being said, let's first save ourselves and let's save the world together. What we are doing to the forests of the world is but a reflection of what we are doing to ourselves and to one another. (Mahatma Ghandi)