Committee: Environmental Commission

Issue: Tackling the loss of biodiversity

Student Officer: Emmanouil Kalathakis

Position: Deputy President

PERSONAL INTRODUCTION

Dear Delegates,

My name is Manos Kalathakis, I am 15 years old, and I am currently attending the 10th Grade at The American College of Greece. I am greatly honored to serve as one of the Deputy Presidents of the Environmental Commission in the upcoming ACGMUN 2022 Conference. I have been involved in MUN conferences as a delegate actively for the past year, and this will be my first-time chairing.

MUN gives everyone a valuable opportunity to get informed about political actions, to address and possibly solve important current issues, to meet people with similar interests, and generally to create unforgettable experiences and memories.

The environmental issues that the world is currently facing, are more than concerning and feasible solutions need to be found to achieve the ultimate goal of environmental sustainability. The issue of biodiversity is no different, as it has escalated in recent years and the consequences of it have now started to affect the global community.

This Study Guide will provide you with principal information, aiding you in your understanding of this vital issue. However, the Study Guide should just be the basis of your preparation and I strongly encourage you all to conduct further research independently, as well as to be fully aware of your country's policy on this issue.

If you have any questions, do not hesitate to contact me at any time through my email, which you can see below. I wish you all the best with your preparation and your research. My excitement for this conference cannot be described, as I am confident that it will be a remarkable experience.

I look forward to meeting you all!

Best regards,

Manos Kalathakis

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TOPIC INTRODUCTION

Many people don't understand the importance of the ''biodiversity loss'' problem. But the truth is that biodiversity decline is as big of an issue, if not even bigger, as the climate change crisis. Approximately 1 million species are almost facing complete extinction, based on the research of the United Nation's Intergovernmental Science-Policy Platform on Biodiversity and Ecosystems Services (IPBES), published on May 6 2019. This study clearly demonstrates that many organisms in nature are reducing at an unprecedented level. There have been five mass extinctions in the history of the universe. But unfortunately, we are the one's leading ourselves to the 6th and the most detrimental extinction, because this extinction is being caused by humans.

There is a number of human activities, that are directly or indirectly, the causes of this problem with the most important ones being: habitat loss, overexploitation of natural resources and the transport of invasive species across distant regions. All these activities are happening on an unmatched, worldwide scale.

In recent years the United Nations (UN) has led many efforts to work towards decreasing the harmful effects of human activities in order to tackle the biodiversity crisis. Not only that, but the issue of biodiversity is closely related to a number of the 17 Sustainable Development Goals (SDGs) from the 2030 Agenda set by the United Nations in 2015. In particular, this phenomenon is connected with SDGs: 14 (Life below water) and 15 (Life on land).

To tackle the loss of biodiversity, countries and organizations need to bear in mind that continuous support and cooperation, as well as the requisite funding, are essential, because no one has the power or the resources to make this issue vanish.

The importance of biodiversity to the world is undeniable. Humans can survive from adverse conditions strictly because of the biodiversity existing and if it wasn't for it, then it's more than likely that they would gradually perish. After all, the biological diversity of the planet is a demonstration of the endless fauna and flora of the world, as well as the plethora of the unique ecosystems, without which, there would be no human-life continuation.

DEFINITION OF KEY TERMS

Air pollution

"Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Pollutants of major public health concern include particulate matter, carbon monoxide, ozone, nitrogen dioxide and sulfur dioxide. Outdoor and indoor air pollution cause respiratory and other diseases and is an important source of morbidity and mortality.''[1]

Biodiversity

"Biodiversity is a term used to describe the enormous variety of life on Earth. It can be used more specifically to refer to all of the species in one region or ecosystem. Biodiversity refers to every living thing, including plants, bacteria, animals, and humans.''[2]

Biodiversity loss

"Biodiversity loss, also called loss of biodiversity is a term used to describe a decrease in biodiversity within species, an ecosystem, a given geographic area, or Earth as a whole. This loss in the variety of life can lead to a breakdown in the functioning of the ecosystem where decline has happened.''[3]

Climate Change

[1] "Air Pollution." WHO | World Health Organization, 30 July 2019, www.who.int/health-topics/air-pollution#tab=tab_1

[2] National Geographic Society. "Biodiversity." National Geographic Society, 5 June 2019, www.nationalgeographic.org/encyclopedia/biodiversity/.

[3] Biodiversity Loss | Causes, Effects, & Facts." Encyclopedia Britannica, www.britannica.com/science/biodiversity-loss.

"Climate Change is the defining issue from shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding. The impacts of climate change are global in scope and unprecedented in scale." [4]

Gross Domestic Product

"Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period."[5]

Habitat destruction

"Habitat destruction is the process in which natural habitat is rendered functionally unable to support the species present. In this process, the organisms that previously used the site are displaced or destroyed, reducing biodiversity.''[6]

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

"The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body established by States to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. It was established in Panama City, on 21 April 2012 by 94 Governments.''[7]

[4] United Nations. "404." United Nations, www.un.org/en/sections/issues-depth/climate-change/.
[5] ''Gross Domestic Product (GDP)." Investopedia, www.investopedia.com/terms/g/gdp.asp.
[6] "What Does Habitat Destruction Mean?" Definitions.net, www.definitions.net/definition/habitat+destruction.
[7] "About." IPBES Secretariat, 6 2021, www.ipbes.net/about.

Invasive species

"An invasive species is an organism that is not indigenous, or native, to a particular area. Invasive species can cause great economic and environmental harm to the new area.''[8]

Less Economically Developed Countries (LEDCs)

"LEDCs are countries with a low standard of living and a much lover GDP. Most of the southern hemisphere is less developed, while countries in the northern hemisphere are more developed."[9]

More Economically Developed Countries (MEDCs)

"MEDCs are countries which have a high standard of living and a large GDP. Most of the southern hemisphere is less developed, while countries in the northern hemisphere are more developed."[10]

Noise pollution

"Noise pollution is generally defined as regular exposure to elevated sound levels that may lead to adverse effects in humans or other living organisms.''[11]

Soil pollution

"Soil pollution is defined as the presence of toxic chemicals (pollutants or contaminants) in soil, in high enough concentrations to pose a risk to human health and/or the ecosystem. In the case of contaminants which occur naturally in soil, even when their levels are not high enough to pose a risk, soil pollution is still said to occur if the levels of the contaminants in soil exceed the levels that should naturally be present.''[12]

Sustainable Development

[8] "Invasive Species." National Geographic Society, 9 Oct. 2012, www.nationalgeographic.org/encyclopedia/invasive-species/.
[9] "Development Indicators - Contrasts in Development - GCSE Geography Revision - BBC Bitesize." BBC Bitesize, www.bbc.co.uk/bitesize/guides/zs7wrdm/revision/2.
[10] "Development Indicators - Contrasts in Development - GCSE Geography Revision - BBC Bitesize." BBC Bitesize, www.bbc.co.uk/bitesize/guides/zs7wrdm/revision/2.
[11] "Noise Pollution." Pollution Guide | Environmental Pollution Centers, www.environmentalpollutioncenters.org/noise-pollution/.
[12] "What Is Soil Pollution." Pollution Guide | Environmental Pollution Centers, www.environmentalpollutioncenters.org/soil/.

"Sustainable development is mainlining a delicate balance between the human need to improve lifestyles and feelings of wellbeing on one hand and preserving and enhancing natural resources and ecosystem on the other"[13]

Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) is an agenda that includes 17 goals set by the United Nations (UN), to achieve and promote sustainable development, by 2030.

BACKGROUND INFORMATION

Causes

Invasive species

Invasive species have enormous consequences on biodiversity loss and have seriously harmed multiple ecosystems globally. Human interventions allow invasive species to get into their new habitat either on purpose or accidentally. It's more than likely that multiple countries will face economic difficulties, as a result of the unexpected invasions made by living organisms. The ecosystem's services are also alternated causing the restriction of its goods and this happens once again due to the deterioration of the environment. Invasive species are causing mainly ecological and socioeconomic problems, but they can simultaneously have a negative influence on human health. As the ecosystem's utilization changes, invasive species have resulted in detrimental effects in humanity with some of them being: decreased resource availability and unregulated spread of human illnesses. Some major diseases examples, that alien organisms have caused are: ''human immunodeficiency virus'' (HIV) and ''severe acute respiratory syndrome''(SARS).

Habitat loss

Habitat loss constitutes one of the biggest dangers to the biodiversity of this unique planet. Urbanization and the harvest of the natural resources for the innovative products of the businesses and the industry in general, are the main purposes for the habitat destruction happening by human actions.

[13] The Number One Resource for Sustainability in UK Tertiary Education | Sustainability Exchange, 2019, www.sustainabilityexchange.ac.uk/files/definitions_of_sustainable_development.pdf. Accessed 9 Feb. 2022.

There is a strong connection between the fauna and the habitats that exist in our planet. The fauna of the world should not be disregarded, in order for the ecosystem's proper functioning to gain benefits on which the survival of all human-beings is relied upon. There are three categories of habitat loss: The ''degradation'', the ''fragmentation'' and the ''destruction''. Habitat destruction directly or indirectly causes the extinction of the species, or in other words the biodiversity decline. Some prime examples of habitat destruction are deforestation and the ''harvest of fossil fuels''.

Climate change

Climate change and biodiversity are causally connected. The species ability to adapt to the sudden and multiple climate alterations are disrupted when the rate of the climate change increases, and thus the biodiversity of the world decreases. For example, the increase in the intensity and frequency of fires, storms or periods of drought, all pose a huge threat to the biodiversity of the planet as the habitats of all species are destroyed. Even though at the beginning of the biodiversity loss problem, climate change wasn't a huge issue, nowadays analysts and experts predict that it might actually be the biggest threat to biodiversity for the upcoming years.

Pollution

It's very surprising that many living creatures have managed to survive for a very long period on an infected planet. However, the planet instead of being less polluted is becoming more polluted and every form of pollution negatively affects the biodiversity of the world. There are multiple forms of pollution, with the most harmful ones being: air pollution, water pollution, soil pollution and noise pollution, all having adverse effects on the diversity of life on Earth. First and foremost, air pollution negatively alternates the environmental characteristics to an enormous extent and an example that is noticeable in everyone's daily life is motor vehicles. Secondly, water pollution is the pollution of the water, most of the time by some sort of human activity that ends up making the water not usable and simultaneously, it destroys all ecosystems located in areas that the water is infected. A huge amount of the seas that are contaminated are because of oil spillage incidents, frequently caused by huge ships. Thirdly, soil pollution is basically the contamination of small or huge areas in the ground. An example of soil infection is the recent testing of atomic bombs that contaminate the ground. Finally, noise pollution is the vulnerability of an organism in very high sound volume. A daily basic

example is the sounds and noise coming from cars on the streets of large cities.

Overexploitation

The wealth that nature provides us with, is constantly overexploited and this overwhelming exploitation, has detrimental impacts on biodiversity. Humans are overexploiting nature in many different ways, but the most harmful to the biological diversity of the planet are non-sustainable forest management, intensive agriculture and overfishing. People, in particular, are overfishing at an unprecedented level and recent statistics and studies demonstrate that overfishing at such record-breaking rates, will not allow some species to recover, thus putting them at risk of extinction. Ultimately, any form of overexploitation puts a plethora of endangered species at risk of extinction. There are a good number of reasons on why overexploitation hasn't stopped yet. The main reason is the fact that governments haven't been fully committed on addressing this issue. In particular, there hasn't been the right implementation of new measures to solve this problem. Also, until recent years reusable products weren't promoted enough and that led to people using mainly single use products that are way more harmful to the environment.

Change in land use

The alteration in land use has proved to be the leading direct source of biodiversity decline in the world, having the greatest impact globally. The leading direct source of biodiversity decline has proved to be the alteration in land use. Plant and animal species variety has been severely reduced, as a result of land-use change, which includes the removal of natural vegetation. The original species are going extinct and instead less diversified species, that are lenient to constant land cultivation alteration, take their place, with that having detrimental consequences on the biodiversity of the planet.

Consequences

Biodiversity loss poses a severe challenge to the structure and the proper functioning of the ecosystem. Even though all of the ecological systems have the unique ability to overcome the obstacles directly connected with reductions in biodiversity to some extent, the loss of biodiversity decreases the complexity of an ecosystem, because the roles that were used to be played by a variety of species in the ecosystem are now played by way less.

The effects are usually noticed on basic human requirements such as: fresh air, clean water and food production. According to recent research, biologically diverse ecosystems are far more productive. As a result, there is a huge possibility that the very high rates of the recent species extinctions will make nature unable of providing the necessary goods like proper food, pure water and a steady climate.

The loss of biodiversity has severe food consequences as well. Due to the overhunting issue, the food chain is disrupted, and this indirectly causes the extinction of more animal species, as they can't find the necessary food, or they are killed by other bigger, stronger and more wild animals.

Also, the overexploitation of animals can indirectly harm the food system in the long-term. Because, less and less unique species are alive, the food availability is decreased and if this crisis continues, then we could notice serious restrictions in our eating choices. The COVID-19 Pandemic makes the situation even more difficult, especially in LEDC'S, where the price of the meat, as well as the price of any kind of product that comes from an animal has seen significant increase. So, biodiversity simultaneously affects the economy. The overexploitation of animal life combined with the economic issues of the Pandemic have led more than 100 million of people that live in LEDCs, to poverty.[14]

Due to the loss of biodiversity, diseases are much more difficult to be cured. Chemicals located in basic or uncommon plants and harmful experiments to animals produce frequently the most effective therapies. So, less species have as an aftermath, lost potential to heal and cure.

Also, diseases can more easily be spread, due to biological invasions that result in biodiversity loss. The ''monkey pox'' virus, as well as the immunodeficiency virus (HIV) are diseases that have spread all around the world exactly for this reason. However, it is undeniable that the most famous, recent and catastrophic disease globally spread, due to biological invasions, is the ''severe acute respiratory syndrome'' (SARS). All in all, the invasion of species in areas that aren't their birthplace, has resulted in the spread of multiple human diseases that continuously plague humanity.

[14] "Devex.com." Devex.com, www.devex.com/news/low-income-countries-hit-hardest-by-spike-in-global-food-prices-100119.

Levels of biodiversity

Genetic diversity

Genetic diversity refers to the number of genes existing. Each species is made up of living organisms with their own unique genetic make-up. So, it's possible that in a species, there are multiple different populations, all of which have a unique genetic makeup. Different populations of a species must be protected in order to preserve genetic diversity. Genes are accountable of the resemblances and dissimilarities that exist between the species. Humans affect genetic diversity. Adaptation and biological growth are provided through genetic diversity that assists in the species' development. There are two forces that have an influence on the diversity of the genes. ''Genetic drift'', which decreases genetic variation and ''gene flow'', which contributes to the reduction of the differences between the species.

Species diversity

Species diversity is the variety of living organisms located in a habitat or an area, without that having to do with whether the ecosystem that they can be found is huge, such as a rainforest or really small, such as dirty creeks. The loss of biodiversity has drastically affected the diversity of the species, as multiple living organisms have become extinct and this means that many habitats are left with no sustainable form of life.

Ecosystem diversity

All of the different habitats that contain a form of life and the biological communities are widely referred to as: ''Ecosystem Diversity''. All organisms that live together in their natural environment create an ecosystem community. The size of an ecosystem is rarely the same with the others. A common example of an ecosystem that shelters a huge natural area is the one that is located in a really big tropical forest. On the other hand, an ecosystem that covers a small-scale region, is the ecosystem located in a pond.

Megadiverse countries

Megadiverse countries are the countries that after statistical research have the wealthiest biodiversity. All countries that have this rich biodiversity were recognized

as megadiverse countries in 1998 by ''Conservation International''. There are currently 17 megadiverse countries, with them being: United States of America, Colombia, Peru, Malaysia, India, Brazil, Venezuela, Democratic Republic of Congo, Mexico, Ecuador, Papua New Guinea, Australia, Indonesia, South Africa, China, Madagascar and the Philippines. The fact that these countries have the biggest biological diversity doesn't necessarily mean that these are also some of the countries with the biggest biodiversity loss in the world. Even though the combined areas of all these countries make up only for 10% of the world's surface, they accommodate more than 70% of all organisms that live in the ground. There has been some collaboration between all these countries with a recent one being the cooperation between Colombia, Mexico and Germany (which is not one of the megadiverse countries), that happened for a two-year span, from 2013-2015. Basically, the target of this cooperation was to supervise the alteration in the utilization of land and to recognize and tackle the consequences that climate change has on biodiversity. However, there hasn't been collaboration between all megadiverse countries yet and in order to tackle the loss of biodiversity, a cooperation like that needs to happen.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

Indonesia

Researchers conducted a study on the 25th of October, in the year 2017, and found out that Indonesia has by far ''the highest number of declining species'', accounting for almost 21 per cent of the total global drop over the period.[15] This mainly occurs because of the unexpected loss of Indonesia's rainforests. The unique and the common species that are contained in-what was previously considered as-Indonesia's wealthy rainforests have now been led to a massive extinction. Indonesia's rainforests are being destroyed to make products used in people's daily life, such as paper and palm oil.

Australia

The research that was previously mentioned, also mentions that Australia is standing on place number 2, when speaking about which countries are accountable for the loss of biodiversity. Australia represents between 5 and 10 percent of the total

[15] "Australia World's Second-worst Offender for Biodiversity Loss." ABC (Australian Broadcasting Corporation), 26 Oct. 2017, www.abc.net.au/news/science/2017-10-26/australia-biodiversity-loss-conservation/8987696.

global decline.[16] However, the Australian government recently acknowledged the significance of the protection of biodiversity and, in cooperation with states and territories, has established a national framework, called: ''Australia's Strategy for Nature 2019-2030'' that directs everyone on how to strive for biodiversity maintenance. The Australian government has published 3 goals that it desires to achieve with the implementation of this strategy. Goal no.1 is to: ''Connect all Australians with nature'', goal no.2 is to: ''Care for nature in all its diversity'' and goal no.3 is to: "Share and build knowledge".

United Kingdom

The United Kingdom has lost almost 50 percent of the country's biodiversity since the Industrial Revolution. The United Kingdom is rated in the bottom 10 percent of the world regarding the countries with the biggest biological diversity decline and it's ranked as the worst economically developed country globally to experience such a high amount of biodiversity loss. [17]The most recent effort made by the UK in order to combat the problem of biodiversity loss is the ''Nature Positive 2030" report that was created by the five environmental agencies of the country to contribute in the increase of biodiversity by presenting innovative ideas to achieve that. In this report ideas were mentioned to cover multiple aspects of the issue, with the first one being that: All preserved regions both on land and at sea have to be protected even more carefully and that the government needs to make sure that species living in the wild will be sustained.

Afghanistan

Years of war battles have worsened Afghanistan's ecosystems, and this combined with overexploiting and illegal activities have resulted in the serious national threat of more than 150 unique living organisms being at danger of vanishing. The country still faces huge obstacles in bringing back its landscape and preventing the remaining living organisms from facing complete and sudden elimination, however it has taken important actions towards it. The National Biodiversity Strategy and Action Plan

[16] "Australia World's Second-worst Offender for Biodiversity Loss." ABC (Australian Broadcasting Corporation), 26 Oct. 2017, www.abc.net.au/news/science/2017-10-26/australia-biodiversity-loss-conservation/8987696.

[17] "UK Biodiversity Loss Nearly at 50%, At Risk of "Ecological Meltdown"." Earth.Org - Past | Present | Future, 27 Jan. 2022, www.earth.org/uk-biodiversity-loss/.

contains a supervising strategy that aims to protect the country's animals and plants and expanding, as well as upgrading its protected areas from 2014 to 2017.[18]

Brazil

Brazil will play a significant role if the biodiversity crisis is tackled at the end. Brazil contains between 15 and 20 percent of the total global diversity, which makes the country the most biodiversity-rich country in the universe and that's mainly due to the existence of the enormous Amazon Rainforest. The existence of this forest gives Brazil the potential to make the socioeconomic growth and development of the country much quicker, however it's safe to say that the Brazilian government has neglected this national treasure causing multiple issues to the people. In the past decade, there has been a notable increase in the deforestation rate of the rainforest. The natives believe that the government is the one to be held accountable, as there hasn't been any improvement in the weak legislation specifically regarding the rainforest and the penalties of some laws that are neither fully-clarified nor obeyed. However, during the latest Conference of the Parties (COP), Brazil agreed to innovative legislative actions and plans that will eliminate deforestation by 2030 and protect the environment of the country.[19]

Finland

Finland's efforts to preserve the national biodiversity goes back to 1923, when the first ''Nature Conservation Act'' was adopted. Amendments were made in order to make this Act more efficient. The Act in particular strived for the protection of the biological diversity, the encouragement from the government to the citizens for the appropriate utilization of the country's natural resources, it aimed to raise awareness generally regarding the preservation of nature and it targeted the scientific development that is relevant with the environment. With the ultimate goal to protect living organisms, this innovative law established the basis for posterior measures that actually ended up lengthening the size of Finland's protected regions to 9 percent of the nation's district.[20] The Act was successful, as even though at the time of its establishment there weren't any national parks or protected areas, now

[18] Mosteller, Don, et al. "Which Countries Are the Best and Worst Stewards of the Planet?" Scientific American Blog Network, 4 Mar. 2016, www.blogs.scientificamerican.com/guest-blog/which-countries-are-the-best-and-worst-stewards-of-the-planet/.
[19] "Megadiverse Brazil: Giving Biodiversity an Online Boost." UNEP, 8 Mar. 2019, www.unep.org/news-and-stories/story/megadiverse-brazil-giving-biodiversity-online-boost.
[20] ---. "Which Countries Are the Best and Worst Stewards of the Planet?" Scientific American Blog Network, 4 Mar. 2016, www.blogs.scientificamerican.com/guest-blog/which-countries-are-the-best-and-worst-stewards-of-the-planet/.

there are 41 national parks, 19 areas created mainly for scientific growth, as well as a plethora of protected regions.[21]

China

China is one of the 17 megadiverse countries in the world, as it hosts almost 10 percent of the global plant species existing and nearly 14 percent of the world's animal life. The Chinese government on October in the year of 2021, guaranteed the funding of 230 million dollars to assist the developing countries that are trying to protect their biodiversity. Domestically, the country recently set up multiple national parks that can keep safe almost 30 percent of China's ''terrestrial wildlife''.[22]

United States of America

The US is usually very active when it comes to environmental topics. However, the country after many years still hasn't ratified the most crucial universal agreement to protect the world's biological diversity, which is no other than the Convention on Biological Diversity (CBD). Since the draft of this Convention, over 25 years ago, the Republicans have rejected the ratification, as they believe that CBD would reduce the American sovereignty, risk the trading interests profit and generally just be a financial obstacle that the country wouldn't overcome.[23] This is very concerning considering that the country is one of the few megadiverse countries in the world. In the US, more than 500 species have already ''gone extinct or they are missing''.[24]

European Union (EU)

The European Union has continuously tried to maintain biodiversity around the world. Their latest effort is the new ''2030 Biodiversity Strategy''. With this long-term strategy, the EU wants to safeguard the environment and counteract ecological decline of every ecological system. This approach identifies new techniques for the

[21] "The Evolution of Protected Areas in Finland." Metsähallitus, www.metsa.fi/en/lands-and-waters/protected-areas/protected-area-history/.

[22] "China Makes Big Move for Biodiversity." Conservation International, 13 Oct. 2021, www.conservation.org/blog/china-makes-big-move-for-biodiversity.

[23] Jones, Benji. "Why the US Won't Join the Single Most Important Treaty to Protect Nature." Vox, 20 May 2021, www.vox.com/22434172/us-cbd-treaty-biological-diversity-nature-conservation.

[24] "Precious Heritage: The Status of Biodiversity in the United States." NatureServe | Unlocking the Power of Science to Guide Biodiversity Conservation, www.natureserve.org/publications/precious-heritage-status-biodiversity-united-states.

better and the more effective implementation of the already existing legislation, as well as effective measures and goals and governmental actions and initiatives. [25]

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) [26]

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was founded in 2012 with the goal of enhancing the already existing connection between science and policy regarding biodiversity and its decline and the functionality of the ecosystems. The United Nations Environment Program, the United Nations Development Program, and the Food and Agriculture Organization are the founding members of this organization.

International Union for Conservation of Nature (IUCN) [27]

On October the 5th in 1948, in the French city of Fontainebleau, the ''International Union for Conservation of Nature (IUCN)'' was formed. It was the first universal environmental organization and it tried to unite governments in order to tackle the ongoing environmental issues and to safeguard nature. The IUCN created the ''IUCN Red List'', which gradually became the most credible source globally for the collection of relevant knowledge regarding the vulnerable species. The IUCN Red List is a simple approach for categorizing species at high risk of vanishing. It divides all living organisms into nine categories, classifying them in ascending order.

The Biodiversity Finance Initiative (BIOFIN)

The Biodiversity Finance Initiative (BIOFIN) is a worldwide cooperation. This initiative was created with the specific target to assist all nations that are willing to reinforce and upgrade their financial management regarding the maintenance of as many ecosystems as possible and indirectly protect their countries biodiversity. At the moment, it collaborates with 40 counties, but it is expected that more countries will desire to take part in this initiative.[28]

[25] " "Biodiversity Strategy for 2030." Environment, www.ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en.
[26] "About." IPBES Secretariat, 6 2021, www.ipbes.net/about
[27] "A Brief History." IUCN, 19 Feb. 2020, www.iucn.org/about/iucn-a-brief-history.
[28] Homepage | BIOFIN, www.biofin.org/.

TIMELINE OF EVENTS

Date	Description of event
October 5, 1948	The International Union for Conservation of Nature (IUCN) was established.
1964	The establishment of the ''IUCN Red List'', a critical indicator of the world's biodiversity.
March 3, 1973	The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed.
November 6, 1979	The Convention on the Conservation of Migratory Species of Wild Animals (CMS) was signed.
June 5, 1992	The Convention on Biological Diversity (CBD) was signed.
1998	17 countries were recognized as megadiverse countries by Conservation International.
January 29, 2000	The Cartagena Protocol was adopted to reinforce the CBD.
April 21, 2012	The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was established.
October 2012	The Biodiversity Finance Initiative (BIOFIN) was established by the United Nations Development Programme (UNDP).
October 12, 2014	The Nagoya Protocol was ratified to reinforce CBD.
May 6, 2019	IPBES released a major report indicating the fact that nature is declining globally at unprecedented rates.

May 20, 2020	The European Union implemented the ''European's Union Biodiversity Strategy for 2030''.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

Convention on Biological Diversity (CBD) [29]

The Convention on Biological Diversity (CBD) was signed on June 5th, 1992 at the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro and was ratified in 1993. The Convention was signed by 150 governmental leaders around the world at the 1992 Rio Earth Summit. The CBD requires countries to create national or international strategies in order to constantly protect the biological diversity of the planet and provides them with a means for an open-international dialogue on issues regarding the biodiversity of the world. Each year there is a conference that takes place between the members that have signed this agreement, called ''Conference Of the Party's'' (COP). Two protocols were adopted to reinforce this convention. The Cartagena Protocol and the Nagoya Protocol. The Cartagena Protocol, signed in January 2002, aims to constantly check the appropriate use of all living modified organisms, resulting from the improvement of biotechnology, that might have detrimental consequences on biological diversity. The Nagoya Protocol, which was agreed on the 29th of October, 2010, during the 10th Conference of the Parties to the CBD, intends to properly and equivalently share the advantages of genetic resource usage. From all the nations that are members in the UN, the United States of America is the only one that has continuously rejected the ratification of this major convention. Despite the wrong perception of many, the treaty has been somewhat effective, however not at the high-speed rates needed in order to reverse this global crisis, which is none other than the decrease of biological diversity.

Innovation on biodiversity and land degradation

The ''Innovation and land degradation'' treaty was adopted by the United Nations Environmental Assembly, in Nairobi on the 15th of March, in 2019. The treaty urged all member states to take initiatives that will combat the biodiversity issue that plagues the world. Due to the recency of this treaty, it's hard to tell if it will be

[29] "Convention on Biological Diversity (CBD) of 1992 (1992)." www.orcp.hustoj.com/convention-on-biological-diversity-1992/.

effective in the future. However, up until now, it seems like it generally recognizes the actions needed in order to tackle the loss of biodiversity.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

This convention, was adopted in 1975, in order to make sure that the international trades regarding wild animals and plants, don't jeopardize their long-term existence and is an international agreement between governments.[30] As of October 2016, this agreement has 183 parties, including 182 countries and the European Union. Most of the United Nations members have signed this Convention, but there are a few exceptions. From those exceptions, the one's that stand out are: the Democratic People's Republic of Korea and South Sudan. No one can deny the success that CITES has to the global community, as this agreement has made sure that all human needs regarding the everyday life of people keep up with the protection of wildlife.

Convention on the Conservation of Migratory Species of Wild Animals (CMS) [31]

The CMS, widely known as: ''the Bonn Convention'' is a convention regarding the natural world made by the UN. It is crucial to note that it is the only international treaty covering the protection of migratory animals and their habitats, and it provides a worldwide plan of action for the protection and the sustainable use of migratory animal species. This treaty was signed in 1979 in Bonn, West Germany, under the aegis of the United Nations Environment Program. The Convention came into effect in 1983. As of September 2020, there are 130 Member States and the European Union that have signed the Convention. Jamaica is the only Party that has signed, but not ratify this treaty. Although, some countries haven't signed this convention as a whole, they are parties to some specific agreements of it or/and some less formal legal instruments, called" Memoranda of Understanding" (MOUs). Two of such countries that stand out are: China and the USA.

Sustainable Development Goals[32]

There is a strong connection between the biological diversity of the planet and the sustainable development goals made by the United Nations within the Agenda 2030. Even though there are 17 goals, biodiversity is mostly associated with two, with them being: Goal 14 (Life Below Water) and Goal 15 (Life on Land). Goal no.14

[30] Convention on Biological Diversity, www.cbd.int/development/doc/unga-resolutions-commitments-biodiversity-en.pdf.
[31] CMS, www.cms.int/.
[32] "THE 17 GOALS." Sustainable Development, www.sdgs.un.org/goals.

regards the protection needed to the sea, as well as the appropriate utilization of the natural resources that the sea provides us with. The conservation of the sea is directly connected with the conservation of all organisms living below water. Goal no.15 has to do with the maintenance of all ecosystems located in the ground, as well as the sustainable use of them and the necessary fight against desertification and the decline of the biological diversity of the planet. This goal is the most direct solution to biodiversity loss in recent years and if it's effective, then humans will witness a positive natural transformation. Unfortunately, COVID-19 has slowed down any efforts made to carry out the aforementioned goals.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Governments and Non-Governmental organizations had been neglecting for a long time the arising issue of biodiversity, and this had, as a result, the worsening of sustaining the biological diversity needed. However, recently there were some effective measures taken in order to combat this problem.

Europeans Union's Biodiversity Strategy for 2030[33]

The EU's biodiversity strategy for 2030, signed in the 20th of May in 2020, has the long-term target to protect nature and to prevent other ecosystem damage. With this plan, the EU wants to assist the ecosystems to recuperate by the end of the year 2030 and that will equally benefit both the planet and the people. The EU plans on achieving the previously mentioned goal with some specific actions. First of all, by creating a '' larger EU-wide network of protected areas on land and at sea'', meaning that stricter preservation will be set in regions with very rich ecological diversity. Secondly, by the implementation of a refurbishment scheme. Finally, by establishing feasible legislative-measures that will be a positive step towards the ''transformative change'' the world desperately is in need of, and the combat of the biodiversity issue that plagues the planet on a worldwide scale. However, it is still too early to tell, if this strategy will be effective.

National Biodiversity Strategy & Action Plan (NBSAP) [34]

The National Biodiversity Strategy & Action Plan (NBSAP) is a national plan implemented by the government of Afghanistan for a three-year span, from 2014 to

[33] "Biodiversity Strategy for 2030." Environment, www.ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en Accessed 9 Feb. 2022.
[34] "FAO.org :." www.fao.org/faolex/results/details/en/c/LEX-FAOC150087/.

2017. This main goal of this strategy was to protect Afghanistan's current biodiversity, as well as to make sure that future resources, regarding biological diversity, will be appropriately used. The National Environmental Protection Agency of Afghanistan is mainly responsible for the supervision of this strategy and generally the protection of the country's biodiversity.

Nature Conservation Act (no.1096 of 1996)

The Nature Conservation Act, implemented by the government of Finland on a national level, was entered into force on the 1st of January in 1997. The main goal of this Act was to protect the biodiversity of the country. This mainly happened by making sure that natural habitats were maintained and the unique species located in the country, were preserved. This Act drastically expanded the measures that were available to be taken in order to conserve the biological diversity of the country and indirectly the nature of the country. Through this Act, the government tried to protect all regions that were under a serious threat and the endangered species, as well as valuable landscapes. It's no secret that this legislative action improved the sustainability of the ecosystems in Finland.

POSSIBLE SOLUTIONS

Extension of protected areas

In order to achieve any improvement towards the sustainability of biodiversity, it's important to increase the regions that are currently preserved. To be more specific, only a little bit more than 15% of global land area is protected. If this percent reached 50%, then a natural transformation would occur, as not only the biological diversity loss of the world would be decreased, but simultaneously CO2 emissions could be hammered from land transformation and reconstruction. [35] The classification of the protected areas should remain the same, since it is effective, as it divides the regions in multiple analyzed categories. There are 7 different categories, divided by the IUCN, regarding the protected areas. Some of them have to do with areas for scientific development, others for wildlife protection, etc. All this could be achieved only through cooperation between all governments, as well as the

[35] "Preventing Biodiversity Loss: Radical Solutions and New Targets." Earth.Org - Past | Present | Future, 26 Apr. 2021, www.earth.org/preventing-biodiversity-loss-solutions-and-new-targets/.

appropriate infrastructure, for example, the creation of national parks and the requisite funding that should be provided.

Implementation of legislative measures and plans

In order to reduce the issue of biodiversity loss, governments should proceed with the implementation of new, innovative, legislative measures and strategies on a national level, as well as on an international level, collaborating together. More often than not, the collaboration of the countries on environmental issues has proved to be way more efficient and effective. Governments should provide frameworks or improve some already existing ones.[36] Harsher penalties, such as the increase of fines, are a good way of addressing the illegal overexploitation issue, that has detrimental effects on the diversity of the ecosystems. To reduce the loss of biodiversity there might be a need for the creation of an international treaty on biodiversity, similar to what the ''Paris Agreement'' is on climate change.[37]

Raising awareness

Similar to most environmental issues, raising public awareness and educating the world is a necessity to ensure the maintenance of ecosystems diversity. The creation of raising-awareness programs, such as campaigns, seminars organized by experts on the issue, TV shows and the filming of documentaries and videos in general, will assist to the better understanding of people on the amount of a crisis the biodiversity issue is, and to inform them about the several ways they can contribute toward tackling this problem. The utilization of many means will be needed to promote these activities. Television, newspapers and the radio are just some examples of those. However, the main way of promoting these activities is the Internet, as most people nowadays are mainly searching for information there. In addition, schools have the biggest responsibility of all, as they have to inform students on the issue, because it is necessary that the new generation is sensitized in order not to repeat the mistakes of the past and actually improve the natural world even more.[38]

[36] "33 Causes, Effects & Solutions For Biodiversity Loss." E&C, 12 July 2021, www.environmental-conscience.com/causes-effects-solutions-for-biodiversity-loss/.
[37] "Preventing Biodiversity Loss: Radical Solutions and New Targets." Earth.Org - Past | Present | Future, 26 Apr. 2021, www.earth.org/preventing-biodiversity-loss-solutions-and-new-targets/.
[38]"Raising Biodiversity Awareness." Welcome | The Encyclopedia of World Problems, www.encyclopedia.uia.org/en/strategy/200542.

Funding

Repetitive discussions could happen for days regarding possible ways of conserving biodiversity, but only with the proper provision of the requisite funds, can biodiversity truly be protected. The CBD believes that the ''Global Biodiversity Framework'', which will be proposed will cost between $103 billion and $895 billion per year and this amount of money will need to be provided only to the countries that have the richest biodiversity. However, at the moment only $52 billion have been labelled as ''available'' from the countries each year. The countries would need to invest more on the biodiversity issue if they seek to protect all of the ecosystems existing for the near future.[39] Also, MEDCs would probably need to provide the necessary financial help to LEDCs, as every country's biodiversity needs to be protected. In particular, MEDCs should allocate funds to the countries that are unable to establish the required infrastructure, legislative measures and almost everything that has been aforementioned. Finally, Non-Governmental Organizations (NGOs) need to assist all countries regarding the combat of biodiversity decline. A direct way of doing so is by collaborating with the governments and more specifically by providing funds to the actions and the measures taken by them.

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