LEGAL FRAMEWORKS AND SOCIOECONOMIC PERSPECTIVES: CONSERVING BIODIVERSITY BEYOND NATIONAL JURISDICTION

Dr. Kapil Bhimrao Chaurpagar, Assistant Professor, Shri Omkarnath Malpani Law College, Sangamner, Dist. Ahmednagar, Affiliated to Savitribai Phule Pune University, Pune (Maharashtra)

ABSTRACT:

The Ocean is one of the main repositories of the world's biodiversity. It constitutes over 90 per cent of the habitable space on the planet. Today's biodiversity is the result of billions of years of evolution, natural processes. Marine biodiversity refers to the variety of life in our ocean. It includes all animals, plants and microorganisms living in our ocean, from barnacles to whales to coral reefs. Anthropogenic activities are responsible for a number of unprecedented challenges to our ocean, including overfishing, plastic pollution, and the effects of climate change. The BBNJ Agreement (Biodiversity Beyond National Jurisdiction), on 'High Seas Treaty' is an international treaty under the United Nations Conventions on the Law of the Seas. Which aims to preserve and sustainably exploit marine biodiversity in regions outside of state borders. It ensures that benefits from the marine recourses are shared fairly and equitably among all the countries. Several biologists consider that we are in the middle of a mass extinction because the rate of species loss is higher now than ever before. This extinction also affects marine biodiversity. The marine ecosystem plays a significant role in regulating greenhouse gases. Due to climate change Sea levels are rising and extreme weather events are occurring more frequently and with greater intensity. Ocean warming, marine pollution, excessive exploitation of resources, mining activity poses threat to the marine environment. At the moment, the high seas are incredibly under protected. Through the BBNJ agreement, this might be extended.

Keywords: Marine biodiversity, The BBNJ Agreement, Marine Biodiversity Protection Challenges, Ocean Warming, Marine Pollution

Introduction

Planet Earth is also known as Blue planet because from outer space it looks blue due to presence of Oceans which consist of 71% of water. [1]It is believed that origin of life on Earth is mainly due to presence of liquid water.[2] Speaking about the human evolution human settlements have developed near the coast. 38 per cent of the world's population lives within 100 km of the coast, 44 per cent within 150 km, 50 per cent within 200 km, and 67 per cent within 400 km.[3] The Ocean is one of the main repositories of the world's biodiversity. It constitutes over 90 per cent of the habitable space on the planet and contains some 250,000 known species, with many more remaining to be discovered at least two thirds of the world's marine species are still unidentified.[4]The oceans and the life therein, are critical to the healthy functioning of the planet, supplying half of the oxygen we breathe.[5]Thus oceans have great impact on every living orgasm on Earth. Therefore it is important to study and analyze the legal aspects of the marine biodiversity.

What is Biological Diversity or Biodiversity?

Biodiversity or biological diversity is defined by the United Nations Convention on Biological Diversity as:

The variability among living organisms from all sources, including, inter alia [among other things], 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.

Today's biodiversity is the result of billions of years of evolution, natural processes, and in more recent years, human activity. Before the advent of *Homo sapiens*, the Earth's biodiversity was much greater than it is today. Human activity has had a tremendous impact on biodiversity due to use of Earth's resources and exponential population growth.[6]

[1]https://www.usbr.gov/mp/arwec/water-facts-ww-water-sup.html (Accessed on 9/11/2024)
[2]https://cneos.jpl.nasa.gov/about/life_on_earth.html(Last accessed on 9/11/2024)
[3] Christopher Small and Joel E. Cohen, Continental physiography, climate, and the global distribution of Human Population", Current Anthropology Vol. 45, No. 2 (April 2004), 269-277 (272).(Accessed on 10/11/2024)
[4]https://www.un.org/en/chronicle/article/marine-biodiversity-and-ecosystems-underpin-healthy-planet-and-social-well-being, see the Census of Marine life website: http://coml.org.(Accessed on 10/11/2024)
[5]The First Global Integrated Marine Assessment (World Ocean Assessment I) (United Nations, 2016). Available from http://www.un.org/depts/los/global_reporting/WOA_RegProcess.htm(Accessed on 10/11/2024)
[6]https://www.marinebio.org/conservation/marine-conservation-biology/biodiversity (Accessed on 12/11/2024)

What is Marine Biodiversity?

Marine biodiversity refers to the variety of life in our ocean. It includes all animals, plants and microorganisms living in our ocean, from barnacles to whales to coral reefs. The term is also used to describe the abundance of species living in an area.Some places have such a large variety of different and rare species that they are referred to as biological "hotspots". These areas of high biodiversity generally support important biological processes such as spawning, nurseries, or feeding areas. Some also have species not found anywhere else in the world.

Examples of marine biodiversity hotspots include the Benguela Current Large Marine Ecosystem off the coast of Namibia and the Central Indo-Pacific region, which includes the coral reefs of Southeast Asia and Australia and contains the most species of any ocean area.[7]

The Importance of Marine Biodiversity

The richness and enrichment of the ocean's marine life and ecosystems are inextricably intertwined. The ocean and coastal regions are therefore particularly susceptible to a range of natural and man-made events. Anthropogenic activities are responsible for a number of unprecedented challenges to our ocean, including overfishing, plastic pollution, and the effects of climate change.

Our ocean's marine biodiversity makes it possible for it to remain robust, productive, and sensitive to changes in its surroundings. Wider detrimental effects on a marine environment can be avoided when a species becomes extinct thanks to marine biodiversity.

If an ecological system continues to operate even when a species' population decreases or goes extinct, it is said to be resilient. When an ecosystem is functional, all of natures processes including those that give people products and services like carbon storage and water filtration are operating efficiently.

Every species in the ocean has a specific function, such as sharks managing prey populations or marine worms turning organic matter into carbon dioxide for marine plants to

[7]https://www.msc.org (Accessed on 12/11/2024)

use in photosynthesis. If one species goes extinct, another will be able to provide the same function or "service" since some species have similar tasks in an ecosystem.[8]

The BBNJ Agreement:

The BBNJ Agreement (Biodiversity Beyond National Jurisdiction), on 'High Seas Treaty' is an international treaty under the United Nations Conventions on the Law of the Seas (UNCLOS). UNCLOS was adopted in the year 1982. Some guidelines for managing the use of oceans and their resources are outlined in this convention. UNCLOS, the primary international agreement controlling human activities at sea and sometimes referred to as the "constitution of the ocean," served as the context for the development of this new accord.[9]

The United Nations sponsored Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction ratified the BBNJ Agreement on June 19, 2023, after it was finalized in March 2023. In September 2023, the BBNJ Agreement became the third implementing agreement for the United Nations Convention on the Law of the Sea and was made available for signature by a number of nations. For it to become enforceable, at least 60 nations must ratify it. After the 60 nations ratify, it will take 120 days for it to take effect. The agreement has been signed by 91 nations and approved by 8 countries as of June 2024.[10]This Treaty's approval is a historic accomplishment that successfully concludes almost ten years of multinational efforts.[11]

The Prime Minister led Union Cabinet gave its approval for India to sign the "Biodiversity Beyond National Jurisdiction" (BBNJ) Agreement on July 2, 2024. The United Nations Convention on the Law of the Sea (UNCLOS) governs this international agreement, which aims to preserve and sustainably exploit marine biodiversity in regions outside of state borders. Areas outside national borders that are available to everyone for globally permissible uses like over flight, navigation, laying underwater cables and pipelines, etc. are frequently referred to as the "High Seas."[12]

[8] Ibid
[9] https://oceans-and-fisheries.ec.europa.eu/ocean/international-ocean-governance/protecting-ocean-time-action_en(Accessed on 12/11/2024)
[10]https://www.un.org/bbnjagreement/en (Accessed on 12/11/2024)
[11]https://oceans-and-fisheries.ec.europa.eu/news/historic-achievement-treaty-high-seas-adopted-2023-06-19 (Accessed on 15/11/2024)
[12]https://pib.gov.in/PressRelease (Accessed on 15/11/2024)

In addition to being active and dedicated to the global goal of marine environment conservation and sustainable development, India is also dedicated to advancing governance, accountability, transparency, and the rule of law, as well as to bolstering scientific advancement and international collaboration in this area. Analyzing all facets of marine biodiversity protection and advocating its sustainable usage is therefore essential.

What are the objectives of the BBNJ?

By effectively implementing the pertinent UNCLOS provisions and fostering further international cooperation and coordination, the BBNJ Agreement's primary goal is the conservation and sustainable use of marine biological diversity in areas outside of national jurisdiction, for the present and in the long-term.[13]

The Treaty consists of the preamble, twelve parts, seventy-six articles, and two annexes. The 53 pages of text reflect more than 20 years of international cooperation amongst a variety of stakeholders, including academic institutions, research institutes, the commercial sector, civic society, Indigenous Peoples and local communities, and scientists from other countries.[14]

Key Features of the Agreement:

In the BBNJ Treaty, the Preamble provisions cover the following topics:

- Obligation to protect and preserve the marine environment
- Respecting the balance of rights, obligations and interests set out in United Nations Conventions on the Law of the Seas (UNCLOS)
- Climate change impacts
- Conservation and sustainable use of Areas Beyond National Jurisdiction (ABNJ)
- Contributing to the realization of a just and equitable international economic order
- Capacity building, development, and transfer of marine technology

[13]https://www.thegef.org/what-we-do/topics/biodiversity-beyond-national-jurisdiction(Accessed on 15/11/2024)
[14]https://bbnj-mgr.fas.harvard.edu/bbnj-treaty (Accessed on 18/11/2024)

- UN Declaration on the Rights of Indigenous Peoples
- Rights of Indigenous Peoples and local communities
- Transbounary impacts on the marine environment
- Desire to act as stewards of the ocean
- Digital sequence information
- Sovereignty, territorial integrity and political independence of all States
- Non-parties to UNCLOS
- Liability in accordance with international law on international obligations concerning the protection and preservation of the marine environment
- Commitment to achieving sustainable development
- Aspiration to achieve universal participation[15]

The agreement establishes a frame work for conservation and sustainable use of marine diversity in areas beyond national jurisdiction through international cooperation and coordination. It ensures that benefits from the marine recourses are shared fairly and equitably among all the countries (Article 14). Signatory countries cannot claim or exercise sovereign rights over the marine recourses in the high seas area (Article 11). The agreement promotes capacity building, access to scientific research, technological advancement, and exchange of knowledge and information (Article 41).

Also it follows an inclusive, integrated, eco system centered approached based on the precautionary principal and promotes the use traditional knowledge and the best available scientific knowledge. It will also help in achieving the Sustainable Development Goals (SDGs), especially SDG -14 which is related to Life below Water.

[15]https://bbnj-mgr.fas.harvard.edu/general-principles-and-approaches (Accessed on 18/11/2024)

Marine Genetic Resources (MGRs)

MGRs are biological materials derived from marine creatures that are very valuable for biotechnology, agriculture, and medicines. Benefits from MGRs, like patents or commercial goods, must be distributed fairly, especially to poor nations, according to the agreement. The agreement guarantees foundations for equitable and transparent access to and use of these resources.[16]

Marine Protected Areas (MPAs) & Environmental Impact Assessments (EIAs)

The agreement makes it possible to create MPAs in the high seas. EIAs are required for all activities that might affect BBNJ ecosystems. The agreement establishes clear standards for performing and evaluating EIAs through Standardized Procedures. Policymakers, indigenous communities, and scientists all contribute to the stakeholder engagement.[17]

Capacity-Building and Technology Transfer

It acknowledges that rich and developing nations have different access to resources and technology. Consequently, funding for educational and training initiatives was established. Additionally, exchanging data and technology for marine research.[18]

Decision-Making and Institutional Framework

The Conference of the Parties (COP) is established by the agreement. The governing body is responsible for overseeing and modifying policies. Additionally, it created Scientific and Technical Committees to offer recommendations based on observation and study.[19]

BBNJ Agreement and Concerns of Sustainability

Around 60% of the global ocean is beyond national jurisdiction. These waterways are among the least protected and least known places on the planet. They offer vital services to the

[16] Fran Humphries, Hiroko Muraki Gottlieb, Sarah Laird, Rachel Wynberg, Charles Lawson, Michelle Rourke, Morten WallÃ¸e Tvedt, Maria Julia Oliva, Marcel Jaspars, A tiered approach to the marine genetic resource governance framework under the proposed UNCLOS agreement for biodiversity beyond national jurisdiction (BBNJ), Marine Policy, Volume 122, 2020, 103910,
(https://www.sciencedirect.com/science/article/pii/S0308597X19308218) (Accessed on 18/11/2024)
[17] https://www.highseasalliance.org. (Accessed on 18/11/2024)
[18] https://bbnj-mgr.fas.harvard.edu/cbtmt(Accessed on 18/11/2024)
[19] https://moef.gov.in/uploads/2018/04/UNFCCC_final_1.pdf

global ecology. Human activity and interest in the region are growing on a global scale. Over the past few decades, its usage has increased in both frequency and severity. This endangers marine biodiversity and jeopardizes the ocean's resilience and health.[20]

The BBNJ Agreement allows countries to increase their strategic presence in areas beyond their Exclusive Economic Zones (EEZ). Together with the sharing of marine financial advantages, the agreement will support collaboration and efforts to conserve the oceans. For the good of humanity, it will create new opportunities for information access, capacity building, technology transfer, and scientific research and development.

Why Protection of Marine Biodiversity is Important?

Several biologists consider that we are in the middle of a mass extinction because the rate of species loss is higher now than ever before. It is projected that between 17,000 and 100,000 species are eliminated each year. Studies have revealed that as many as one in eight plant species are threatened with extinction.[21] This extinction also affects marine biodiversity. Every ecosystem carries out specific tasks that are vital to living things. The creation of plant biomass from sunlight and nutrients (primary productivity), which serves as the foundational food supply for all marine life and eventually for humans as well, is one of the most significant roles of marine ecosystems.

Global biological variety in the Oceans is quickly decreasing owing to overfishing, habitat loss, and the introduction of foreign species, as well as fast variations in water temperature, salinity, and nutrient concentrations. Without a doubt, the disruptive forces are cumulative and will lead to the extinction of more species. [22]

Greenhouse Gas Regulation: marine eco systems are significant controllers of the global carbon dioxide / oxygen (Co2/O2) stability. The biogeochemical cycling of these gases is largely controlled by living organism on Earth, with the marine ecosystem playing a vital role. In this process, the marine ecosystem plays a significant role in regulating greenhouse gases. About 26% of the anthropogenic carbon dioxide released into the atmosphere is absorbed by it each

[20]https://www.dcceew.gov.au/environment/marine/high-seas-biodiversity-treaty (Accessed on 22/11/2024)
[21]https://oceanliteracy.unesco.org/ocean-biodiversity(Accessed on 22/11/2024)
[22]https://worldoceanreview.com/en/wor-1/marine-ecosystem/biodiversity (Accessed on 25/11/2024)

year.[23]

Marine Resource: Many organisms rely on the oceans for sustenance, while they also provide raw materials for the production of a wide range of medications. They additionally give a variety of building components, polysaccharides, and animal feed. In this context, the marine ecosystem holds immense potential for the future.[24]

Recreational and Cultural Values: Numerous recreational values are based on marine biodiversity. These include diving, sports fishing, beach combing, rock pooling, whale and bird watching. Likewise, many religions, folktales, paintings, and cultural and spiritual traditions place a specific emphasis on the marine environment.[25]

Sustainable Use of Marine Biodiversity

Long term utilization of marine resources and the benefits they provide to the ecosystem depend on the conservation of marine biodiversity. In order to safeguard endangered species and sustain the supply of maritime resources, it is essential to preserve significant marine ecosystems.

Marine ecosystem resources are extensively utilized in industry, agriculture, and medicine. Therefore, it is imperative to guarantee equitable allocation of revenue and advantages derived from maritime resources.

Mining and fishing are two examples of operations that should need an Environmental Impact Assessment (EIA). This would encourage the sustainable use of marine biodiversity and assist in regulating human activity in delicate maritime regions.[26]

Marine Biodiversity: Protection Challenges

Ocean Warming: Oceans and marine ecosystems have already been significantly impacted

[23]Corinne Le Quere and others, "Global carbon budget 2015", *Earth System Science Data*, Vol. 7, No. 2 (December 2015), 349-396 (371)(Accessed on 27/11/2024)
[24]https://pmc.ncbi.nlm.nih.gov/articles/PMC4832911 (Accessed on 30/11/2024)
[25]https://www.academia.edu (Accessed on 1/12/2024)
[26]Humood A. Naser, The role of environmental impact assessment in protecting coastal and marine environments in rapidly developing islands: The case of Bahrain, Arabian Gulf,Ocean& Coastal Management, Volume 104, 2015,
Pages 159-169, https://doi.org/10.1016/j.ocecoaman.2014.12.009.
(https://www.sciencedirect.com/science/article/pii/S0964569114003937) (Accessed on 5/12/2024)

by climate change. Over 90% of the extra heat in the climate has been absorbed by the oceans. The result of this ocean's temperature is rising. As Sea levels are rising, extreme weather events are occurring more frequently and with greater intensity, and ocean warming and acidification have changed the chemistry of the ocean's water, destroying coral reefs and actively reducing the diversity and abundance of marine life. In addition to altering the environment of marine organisms, this is also destabilizing the marine food chain.[27]

Marine Pollution: The primary causes of the rise in marine pollution include oil spills, industrial waste dumping, and inadequate waste management systems.[28]All strata of marine life, from giant marine animals to micro plankton, are being impacted by marine pollution.

Plastic Pollution

Plastic pollution have detrimental effects on aquatic species growth and development, marine food chains, human health, and global carbon cycling, it also poses a serious threat to marine and coastal ecosystems.

An estimated 75 to 199 million tonnes of plastic are discovered in the water, and plastic pollution affects over 800 marine and coastal species by ingestion, entanglement, and adsorption of hazardous, bioaccumulative chemicals into plastics.[29]It is obvious that human induced plastics usage, manufacture, and disposal must change. A historic pledge to eradicate plastic pollution and create a legally binding global accord by 2024 was made by 175 countries at the fifth session of the United Nations Environment Assembly (UNEA-5) in 2022. The goal of this resolution is to address plastic's full life cycle including its design, manufacture, and disposal.

Excessive Exploitation of Resources: Currently, resources from the sea are used to meet the majority of human requirements. Unsustainable exploitation of marine biodiversity is growing under such circumstances. For instance, several marine fish species are going extinct as a result of illegal, unreported, and unregulated (IUU) fishing. Protecting threatened species through

[27]https://nap.nationalacademies.org (Accessed on 5/12/2024)
[28]IrfanUllah, Florian Marcel Nuta, DimenLevente, BianYiyu, Zhou Yihan, Chen Yi, Muhammad Haroon Shah, Rupesh Kumar, Nexus between trade, industrialization, and marine pollution: A quantile regression approach, Ecological Indicators, Volume 155, 2023, 110992, ISSN 1470-160X, https://doi.org/10.1016/j.ecolind.2023.110992. (https://www.sciencedirect.com/science/article/pii/S1470160X23011342) (Accessed on 6/12/2024)
[29][CBD, 2016; UNEP, 2021],https://www.unep.org/events/conference/unep-cbd-cop16(Accessed on 7/12/2024)

endangered species laws, like the US's Endangered Species Act, is crucial. These laws prohibit further harm to the species and are followed by management plans that aid in the recovery or rebuilding of depleted populations.[30]

Mining Activities: Because of the potential of deep sea minerals including polymetallic nodules, cobalt rich crust, and polymetallicsulphides that exist on the deep seabed and are thought to be an alternate supply of strategic metals, deep sea mining has attracted a lot of attention worldwide for more than 50 years. The marine ecosystem is changing as a result of the effects of sea mining. Mining reduces the amount of sunlight available for photosynthesis and increases water turbidity, which affects pelagic organisms and has a long-term impact on biological production.[31]Direct contact with large mining equipment placed on the seabed has a significant probability of killing deep-sea animals. Deep-sea organism's ability to feed and reproduce may be hampered by mining operations because they produce excessive noise and light pollution in an otherwise quiet and gloomy environment.[32]

Ocean Acidification: Ocean acidification has developed as a result of the atmosphere's excess carbon dioxide being absorbed. The pH level of seawater is lowered by high carbon dioxide content. The distribution and reproductive development of marine animals are negatively impacted by acidification. As a result, calcifying organisms like corals, shellfish, and plankton are less able to create their own calcium carbonate structure. It is referred to as the sea's rainforests. Ecological relationships and species diversity are thus being impacted. According to estimates, manmade factors such as ocean warming and acidification pose a danger to more than 60% of coral reefs.[33]

Invasive Species: It is commonly acknowledged that invasive species pose a serious danger to marine biodiversity. Invasive species have a negative impact on local biodiversity, ecological function, and economic activity when they are introduced into the maritime environment. The most damaging of these invaders modify basic processes like nutrient cycling and sedimentation, displace local species, and alter food webs and community structure. By

[30] Heike K. Lotze, Marine biodiversity conservation, Current Biology, Volume 31, Issue 19, 2021, Pages R1190-R1195, ISSN 0960-9822, https://doi.org/10.1016/j.cub.2021.06.084. (https://www.sciencedirect.com/science/article/pii/S0960982221009131)(Accessed on 9/12/2024)
[31] Rahul Sharma,Environmental Issues of Deep-Sea Mining,Procedia Earth and Planetary Science,Volume 11,2015, Pages 204-211,https://doi.org/10.1016/j.proeps.2015.06.026. (https://www.sciencedirect.com/science/article/pii/S1878522015000776) (Accessed on 10/12/2024)
[32] https://www.wri.org/insights/deep-sea-mining-explained. (Accessed on 12/12/2024)
[33]https://oceanservice.noaa.gov/facts/coralreef-climate.html (Accessed on 12/12/2024)

reducing fisheries, contaminating ship hulls, and blocking intake pipes, alien invasive species have harmed economies. Some can even cause sickness, which has a direct effect on human health.[34]

BBNJ Agreement: The Road Ahead:

The agreement represents a step toward strengthening multilateralism and collective action on global environmental issues. But as the same time it is concerning that international agreement on the BNNJ Agreement is moving slowly. It is important to persuade all nations, particularly those along the shore, to ratify the agreement as soon as possible. Overfishing and deep-sea mining are two threats to marine biodiversity that are not sufficiently addressed in the accord. Furthermore, its main focus is the just and equitable allocation of genetic resources. There has been a lack of clarity on the distribution of various marine resources. Therefore, the BBNJ's provisions ought to be expanded. After ratification, countries will still have to figure out how the treaty will work in practice. This includes developing a decision making process, forming a scientific body for better recommendation and securing funding to support the treaty's implementation. The agreement's regulations are not being monitored or enforced by a recognized international enforcement body. There is no financial commitment included in the agreement. To make the agreement legally enforceable and to continuously monitor it, a focused enforcement body should be set up. By doing this, coastal nations and other parties involved in the agreement's terms will be less likely to have conflicts of interest. At the moment, the high seas are incredibly under protected. Through the BBNJ agreement, this might be extended.

The actions listed below can also be useful in preserving biodiversity and the ocean ecosystem.

To lessen ocean acidification, carbon emissions must be reduced and monitoring capabilities must be improved. In this regard, tangible efforts are required to create targeted tactics that increase marine organism's resistance to shifting environmental circumstances.

To stop the spread of invasive species in maritime areas, government agencies, research

[34]Molnar, J. L., Gamboa, R. L., Revenga, C., & Spalding, M. D. (2008). Assessing the global threat of invasive species to marine biodiversity. *Frontiers in Ecology and the Environment*, *6*(9), 485-492. (Accessed on 17/12/2024)

institutions, and local populations must work together and implement stringent biosecurity measures, early detection and fast response protocols, and cooperative efforts.

To sustain the marine environment, conservation efforts must be directed towards safeguarding important species, maintaining hotspots for biodiversity, and creating a network of marine protected areas.

Conclusion:

Over 70% of the Earth's surface is made up of oceans, which are home to a diverse array of species. As a result, countries everywhere must continue to prioritize safeguarding the ocean. It is evident from the abundance of goods and services the ocean offers that marine biodiversity is essential to human and environmental health. We can lessen the effects of environmental occurrences like ocean warming and acidification, marine pollution, and overfishing by enacting laws and regulations.[35]A global goal established by the Kunming-Montreal Global Biodiversity Framework is to conserve at least 30% of marine species by 2030.[36]The early implementation of the BBNJ agreement is crucial to achieving this goal. All parties involved must take proactive measures to preserve the high seas and marine biodiversity in general. A more resilient and sustainable future may be possible if we can better comprehend the difficulties the marine environment faces and take the necessary steps to overcome them.

[35]https://www.cbd.int/article/exploring-linkages-between-ocean-biodiversity-8June2022 (Accessed on 18/12/2024)
[36]https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222 (Accessed on 20/12/2024)