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BIODIVERSITY: A LEGACY FOR FUTURE GENERATION

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The Convention on Biological Diversity defines biodiversity as the diversity of living organisms from various sources, including terrestrial, marine and aquatic ecosystems and ecological complexes, some of which include a diversity of species and ecosystems (Chandra & Idrisova, 2011). This biodiversity plays an important role in the stability of ecosystems and human well-being where there is interdependence between natural resources and humanity. According to Dunning (2022), Malaysia is recognized as one of the world's mega biodiverse countries because it is rich in flora and fauna that include tropical rainforest ecosystems, mangrove swamps, coral reefs, and wetlands. This diversity is a supporting factor for ecosystems that can provide basic needs for human life, guaranteeing the chain of human life, flora and fauna and heritage throughout time. From an ecological perspective, biodiversity plays a role in maintaining the stability and function of ecosystems.

With the presence of flora such as tropical rainforests, which are the habitat of thousands of species of flora and fauna, biodiversity plays an important role. It is also an agent for carbon absorption, temperature regulation, and stabilization of the hydrological cycle. An imbalance in biodiversity will disrupt the food chain and can affect the balance of ecosystems that have been the basis for the survival of human life.

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Challenges and Conservation

However, challenges to the sustainability of biodiversity in Malaysia still exist in line with population growth and rapid economic development. Anthropogenic activities such as unsustainable development, fuel burning, deforestation which causes a reduction in carbon dioxide absorption, industrial activities which cause waste and methane pollution as well as carbon monoxide emissions from vehicles due to economic development and climate change are among the factors that need to be addressed.

Therefore, the preservation of biodiversity needs to be emphasized as a national strategic agenda in line with national development policies as mentioned by Watson et al. (2023) as part of the Kunming-Montreal Global Biodiversity Framework (K-M GBF), signatory nations of the Convention on Biological Diversity (CBD) aim to protect at least 30% of the planet by 2030 (Target 3). In the Malaysian National Biodiversity Action Plan (NBSAP), this goal has also been encapsulated in the National Biodiversity Policy 2022-2030 (DKBK). Among its goals is to protect thirty percent (30%) of land and sea by 2030

to ensure sustainable conservation, sustainable use, and equitable sharing of biological resources. For this purpose, environmental education and public awareness play an important role in shaping societal attitudes to be responsible toward the environment, as emphasized in SDG 4, which highlights inclusive and quality education, including sustainable education. Through "Education for Sustainable Development (ESD)," the community is educated about the importance of biodiversity, natural conservation, and the responsibility to sustain these resources so that they can be enjoyed by future generations. The involvement of local communities and Indigenous Peoples as conservation partners is vital in ensuring the long-term sustainability of the country's biodiversity resources (Wongbusarakum, 2021). In addition to the National Biodiversity Action Plan (NBSAP) of Malaysia, the Sustainable Development Goals (SDGs) also play a role in biodiversity conservation. For example, SDG 15 focuses on "sustainably managing forests, combating desertification, halting and reversing land degradation, and halting biodiversity loss," with the restoration of land, forests, and biodiversity being critical for ecological balance (Convention on Biological Diversity). In addition, the Sustainable Development Goals (SDGs) also support this sustainability through healthy ecosystems, with SDG 6 aiming to ensure clean water supply, and SDG 2 closely related to food supply support and the overall well-being of humanity (Obrecht et. al., 2021).

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Reflection on Biodiversity

As a result, various efforts have been undertaken such as the expansion and effective management of protected areas like national parks, permanent forest reserves, marine parks, and marine conservation need to be strengthened (Chan et. al., 2023). According to Moktshim (2020), forest management is important to show government perseverance towards degradation issues and to address it using the best approach. A study by Sunny et al. (2025) shows that Bangladesh also emphasizes the protection of wetlands as an effort to support fish genetic resources, biodiversity, and climate change. This study highlights the sustainable management of wetlands in three areas: the Sundarbans mangrove (brackish water), the Sylhet floodplain (freshwater), and the Meghna River basin (estuary), emphasizing the integration of wetland management covering SDG 2 (Zero Hunger), SDG 14 (Life Below Water), and SDG 15 (Life on Land). These findings provide a foundation for policymakers, researchers, and conservationists to develop a sustainable wetland management framework that protects fish genetic resources, livelihoods, and ecological balance.

Additionally, in Malaysia, activities include beach clean-ups, turtle conservation education, and the use of used cooking oil for soap-making to reduce waste and foster sustainability in tourism communities. Malaysia also hosts IGEM 2025 to promote green technology, the circular economy, energy efficiency, carbon cooperation, and regional green investments. Malaysia hosted the first summit focused on climate

action and ASEAN cooperation for sustainability. Programs that foster sustainability awareness, community garden activities, and urban agricultural innovations as well as IoT technology for a green environment. Decarbonization projects include local EVs, CCUS, and large-scale solar to achieve a low-carbon economy. Malaysia is also introducing a carbon market policy, a carbon management framework, and completing participation under the Paris Agreement (NDC 3.0) along with various other initiatives. These are among the efforts that should be implemented to ensure the sustainability of future generations. The loss of biodiversity not only disrupts the balance of ecosystems but also affects the well-being of future generations. Therefore, continuous commitment from all parties is required.

References