DRAFT 1

URGENT/ACADEMIC DRAFT

DRAFT REGULATION ON THE PROTECTION OF LIFESUPPORT SYSTEMS AND CONSERVATION AREAS

DIRECTORATE GENERAL OF NATURAL RESOURCE CONSERVATION AND ECOSYSTEMS
2024

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CHAPTER I INTRODUCTION

A. Background

The Indonesian people have been blessed by God Almighty with abundant natural resources and ecosystems with a high level of biodiversity, both on land and in the waters, making Indonesia known as one of the world's *mega biodiversity* countries. These biological natural resources are resources that are essential to the livelihood of many people, so they are controlled by the state and managed optimally and sustainably for the welfare of the current and future generations of Indonesians.

Although Indonesia's biological natural resources are abundant, they are not unlimited and have *irreversible* properties, meaning that their utilization must be carried out wisely and sustainably. Excessive utilization will threaten the existence of biological natural resources themselves and, at a certain stage, may even destroy them.

In essence, development is a reflection of the process of social change within a society, without neglecting the diversity of basic needs and desires of individuals, social groups, or institutions within it to achieve a better quality of life (Todaro 1998). However, the potential for utilizing these resources is often misunderstood, turning into excessive exploitation of resources, an act of coercion against natural resources and the environment. With this *anthropocentric ([1])*mindset, humans tend to disrupt the dynamic balance of various subsystems of nature to the point of no return. This action is one of the causes of damage to the earth, in addition to the natural law that the world will end (apocalypse).

However, the anthropocentric concept remains the only rational optimistic framework within a technical context where resources are inherently created to meet human needs. This way of thinking must be integrated with the "*biocentric egalitarianism*" approach, which

[1]conservation with a utilitarian approach emphasizing the wise use of natural resources. Conservation in this concept is developed towards "continuous utilization or continuous development." Conservation here is understood as a strategy for using natural resources to meet current needs and economic demands without neglecting the needs of future generations or efforts to improve the quality of human life in a manner that supports the existence of the ecosystem.

This means that conservation must view humans as one constituent among other constituents in an ecosystem (animals and plants).

Both ways of thinking indicate that there will always be conflicting interests and objectives in the use and allocation of resources because this is a natural law that will always exist. However, divergent interests can certainly be fulfilled at the same time, although they are not always balanced (there are priorities in land allocation decisions). Thus, the main focus of forest management policy is to regulate conflicts of interest and to resolve priority functions within the area. Therefore, the issue of natural resource sustainability is essentially a matter of the mindset and value system currently embraced by humans.

Given these conditions, the idea of conservation emerged. Conservation in its true sense encompasses the concepts of protection (*preservation*) and development of natural resources and energy for the needs of humanity on earth, both now and in the future. Therefore, the concept of conservation implicitly includes the moral aspects and responsibilities of humans to protect, maintain, save, and preserve natural resources and energy for future generations.

The importance of *conserving living resources* in supporting quality of life and sustainability has been declared since 1980 through *the World Conservation Strategy* (WCS). The objectives of this strategy include:

1. Maintenance or protection of *essential ecological* processes and *life-support systems*.
2. *Preservation of genetic diversity*
3. The utilization of species and ecosystems must be carried out in a sustainable manner – (*Sustainable utilization of species and ecosystems).*

These three global conservation strategy objectives were subsequently adopted as the main pillars of the conservation movement in Indonesia through Law No. 5 of 1990 concerning the Conservation of Living Natural Resources and Their Ecosystems (KSDAHE), which was enacted as a manifestation of the Indonesian people's commitment to regulating the balance between the utilization and protection of living natural resources.

In this strategy, it is stated that, in essence, WCS is:

1. Emphasizing that humans are part of nature and have no future if nature and biological resources are not conserved,

2. Stating that conservation cannot be achieved without development aimed at reducing poverty and suffering for millions of people, and
3. Emphasizing the interdependence between conservation and development, and for the first time introducing the term *"sustainable* development."

The enactment of Law No. 32 of 2024 amending Law No. 5 of 1990 on the Conservation of Biological Resources and Their Ecosystems further strengthens the position of life support systems in supporting sustainable development. The strengthening of the position of life support systems not only mandates the conservation and management of Nature Reserves and Nature Conservation Areas but also includes conservation areas in water bodies, coastal areas, and small islands, as well as Preservation Areas. This demonstrates that life support systems are not limited to the forestry sector but involve all sectors in Indonesia.

Given the importance of drafting a Government Regulation on the Protection of Life Support Systems and Preservation Areas, there is a need for an in-depth and comprehensive study of the scientific theories or concepts related to the draft regulation. In light of this, it is necessary to prepare an Urgency Draft as a reference for the formulation of the Draft Government Regulation on the Protection of Life Support Systems and Conservation Areas.

B. Problem Identification

As a form of implementation of Law No. 32 of 2024 amending Law No. 5 of 1990 on the Conservation of Biological Resources and Their Ecosystems, particularly regarding the implementation of the protection of life support systems and preservation areas, it is necessary to draft a Government Regulation. Specifically, there are several articles in Law No. 32 of 2024 on Amendments to Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems that require further provisions or details of the provisions already established, namely:

- Article 8 Paragraph 6 states that “Further provisions regarding the Protection of Life Support Systems as referred to in paragraphs (1) to (
  (5) are regulated in a Government Regulation.”
- Article 9 Paragraph 7 states that “Further provisions regarding activities

Conservation of Biological Resources and Their Ecosystems in Conservation Areas as referred to in paragraphs (1) to (6) are regulated in a Government Regulation."

The Draft Government Regulation on the Protection of Life Support Systems is formulated to manage life support systems in a balanced and integrated manner between direct utilization for human life and the preservation of ecosystem functions, which in the long term and indirectly sustain human life. Therefore, in the Draft Government Regulation on the Protection of Life Support Systems, the government must establish:

1. Certain areas as areas for the protection of life support systems,
2. Basic guidelines for the development of life support system protection areas, and
3. Regulations on the utilization of areas protecting life support systems.

The introduction of a new nomenclature, namely preservation areas, indicates that Indonesia still possesses extremely high levels of biological natural resources, which are not only distributed across Nature Reserves, Nature Conservation Areas, marine conservation areas, coastal regions, and small islands, but also located in other areas that are primarily production zones. With the establishment of preservation areas, efforts to maintain ecological processes and life support systems will ensure the provision of vital ecosystem services for human survival and well-being.

C. Purpose and Use

The objectives of drafting the Urgent Proposal for the Establishment of a Government Regulation on the Protection of Life Support Systems include:

1. Identifying the challenges faced in the implementation of conservation of biological natural resources and their ecosystems in Indonesia, as well as ways to address these challenges.
2. To identify legal issues faced as the basis for the formulation of the Draft Government Regulation on the Protection of Life Support Systems.
3. Formulating the philosophical, sociological, and legal considerations or foundations for the formulation of the Draft Government Regulation on the Protection of Life Support Systems.

4. Formulating the objectives to be achieved, the scope of regulation, the reach, and the direction of regulation in the Draft Government Regulation on the Protection of Life Support Systems.

The purpose of preparing this Urgency Draft is to serve as a reference or guideline in the drafting and discussion of the Draft Government Regulation on the Protection of Life Support Systems.

D. Method

The methods used in drafting the Urgent Draft Government Regulation on the Protection of Life Support Systems are as follows:

1. The normative legal method was carried out through literature review to examine secondary data, including legislation, research findings, studies, and other references;
2. The empirical legal method is carried out by examining primary data related to the conservation of biological resources and their ecosystems, including case studies on specific issues that require urgent regulation;
3. Consulting experts and the public by holding a series of workshops, interviews, discussions (*focus group discussions*), and hearings to obtain input and feedback from various *stakeholders* to enrich the material.

CHAPTER II THEORETICAL AND EMPIRICAL PRACTICAL STUDIES

A. Theoretical Study

1. Conservation of Natural Resources and Their Ecosystems

The conservation of biological resources and their ecosystems in Indonesia is based on Law No. 5 of 1990, which emphasizes the importance of protecting, preserving, and sustainably utilizing biological resources. Law No. 5 of 1990 aims to preserve various species and ecosystems to maintain the balance of nature and support human life. Law No. 32 of 2024 amends Law No. 5 of 1990 to strengthen conservation regulations, including expanding conservation areas in coastal, marine, and small island regions, and prioritizing funding support and community involvement in conservation activities.

Conservation not only plays a role in protecting flora and fauna but also helps maintain ecosystems as the foundation of human life, particularly in preventing environmental damage such as floods and climate change. The government and the public share responsibility for this conservation, which is expected to protect natural resources in a balanced and sustainable manner.

In accordance with the provisions of Article 33, Paragraph 4 of the 1945 Constitution, as amended by the Fourth Amendment, which fundamentally mandates that the national economy must be guided by principles of sustainability and environmental awareness. Sustainable development itself fundamentally aims to achieve coexistence among all living beings.

In one land use policy issue, there needs to be a broader framework in which the old paradigm always refers to a *zero-sum* system where competition for land use is divided only between production and conservation functions (protection and conservation, in Law No. 41 of 1999). In practice, this indirectly assumes that the system that occurs in land use is a closed system, which contradicts reality. All natural events are always connected between one material and another because natural systems are always formed as a result of material and energy cycles from mountain ecosystems to marine ecosystems in the open sea. For example, forest degradation in upstream areas and along riverbanks, coupled with excessive use of chemicals in surrounding agricultural areas, will enter the water. Under these conditions, organic material

and chemicals will enter the river, causing damage to the ecological system within the river. If the concentration of pollutants exceeds the river's *self-purification* capacity, the downstream area (sea) will be affected, as indicated by eutrophication [2]. This will then cause damage to the aquatic ecosystem due to the inability of aquatic fauna to obtain $_{O_2}$(anaerobic water). In this condition, the food webs in the water will certainly be damaged. Therefore, a broader understanding of the multifunctional use of a landscape is needed so that the current *zero-sum* assumption is no longer applicable.

The unexpected conditions above certainly require a strategy to improve them through a new order, particularly by the Ministry of Forestry, in order to ensure that land use is in accordance with the principles of sustainable development. Moreover, the fact that Indonesia's land use is divided into natural, sectoral, and administrative units, both horizontally and vertically, where each unit has its own jurisdiction, institutions, and *governance*, means that new forest management innovations must take this into account so that forest and land management is most beneficial to many parties. Therefore, the current conservation strategy can no longer be viewed as a sectoral function and resource management. This also shows that, in essence, the fate of most of Indonesia's biodiversity lies in how wisely humans can manage the landscapes they dominate, especially in cultivated areas. In this context, conservation success will only occur if and only if a high level of "collective awareness" is established, namely the awareness of humanity's role as stewards of the Earth.

In technical terms, this requires the government to make decisions in the management of natural resources and the environment through the implementation of protection for important areas or ecosystems. This refers to Article 33 of the 1945 Constitution, which essentially states that the state has a responsibility to formulate policies (*beleid)* and take administrative actions (*bestuurdad*), regulations (*regelendaad)*, management (*beheersdaad)*, and supervision (*toezichthoudensdaad)* for the greatest prosperity of the people. More

[2]water pollution caused by the excessive introduction of nutrients into aquatic ecosystems

Furthermore, Article 13 of Law No. 5 of 1990 essentially accommodates the protection of all biodiversity from extinction, both within and outside conservation areas.

In addition to managing conservation forest areas, Indonesia also has marine areas outside special conservation areas, which have a significant impact on the sustainability of surrounding ecosystems. Since 2020, these areas have been managed using a community-based approach. These areas are referred to as *Effective Area-Based Conservation Measures (OECM)*. OECM covers areas that, although not officially protected areas, are geographically defined and managed to provide positive and sustainable impacts on biodiversity conservation. This approach is in line with global agreements that emphasize ecosystem protection through collaborative management under the OECM framework. The results of inventory and verification of areas with high biodiversity value outside conservation areas are an important basis for expanding the role of various parties in protecting ecosystems.

Over the past 30 years, the size of conservation areas in various parts of the world, including Indonesia, has been deemed insufficient to represent and protect biodiversity at the ecosystem, species, and genetic levels. This is highlighted *by the Global Biodiversity Framework*, which emphasizes that existing conservation areas do not yet cover many important habitats of wild animals and unique ecosystems that are located outside protected areas. This global framework encourages conservation efforts to not only rely on designated areas, but also on ecosystem protection approaches through *effective area-based conservation measures* (OECM). This approach enables important habitats outside conservation areas to be managed sustainably and collaboratively.

OECM is an area outside of Protected Areas that is geographically defined, regulated, and managed through a *measure*, and in the long term achieves positive and sustainable results for biodiversity conservation. A geographically defined area outside Protected Areas, regulated and managed in a manner that achieves positive and sustainable long-term outcomes for the conservation of in situ biodiversity, with ecosystem functions and services.

[3] https://www.cbd.int/gbf/introduction

and, where applicable, cultural, spiritual, socio-economic, and other relevant local values. There are four criteria for identifying OECMs:

a. The area is not currently recognized as a protected area;
b. The area is regulated and managed;
c. The area makes a sustainable and effective contribution to the conservation of *in situ* biodiversity;
d. The criteria for ecosystem functions and services, as well as cultural, spiritual, socio-economic, and other relevant local values, are preserved and respected.

The Indonesian government has set a target of 30% of national conservation areas by 2045. This is below the global target set out in the Global Ocean Treaty, in which countries have reached a historic agreement to protect 30% of protected areas by 2030. A 30% national conservation area equates to 97.5 million hectares of Indonesia's marine area. The implementation of the OECM concept has long been supported by Aichi Target 11 (2010), which was later reinforced by the Kunming-Montreal Global Biodiversity Framework Target 3 (2022), stating that OECM can be implemented to achieve the global target of 30% of marine areas as protected areas while recognizing indigenous and traditional territories

2. Establishment of Protected Areas for the Life Support System

Indonesia is a country rich in biodiversity at the ecosystem, species, and genetic levels. It ranks second after Brazil as a mega biodiversity country in the world. This high biodiversity is a fundamental asset for development that must not only be protected from extinction but also managed sustainably to be utilized for the long-term well-being of communities.

The government has allocated 120.6 million hectares, or about 63% of its land area, as forest areas. The remaining land area consists of non-forest areas known as Other Land Use Areas (APL). These forest areas are classified into three functions: Production Forests (HP), covering an area of 68.8 million hectares or 57% of the forest area, Protected Forests (HL) covering an area of 29.6 million hectares or 25% of the forest area, and Conservation Forests (HK) covering an area of 22.1 million hectares or 18% of the forest area. Additionally,

there are an additional 5.3 million hectares of water areas designated as Conservation Forests.

In order to protect this biodiversity, the Indonesian government, through Law No. 5 of 1990, has designated Nature Reserves (Nature Reserves and Wildlife Reserves), Nature Conservation Areas (National Parks, Nature Tourism Parks, and Forest Parks), a total of 573 units covering an area of 26,885,742,864 hectares (Directorate General of KSDAE, 2024). In line with this, Law No. 41 of 1999 refers to KSA and KPA (plus Hunting Reserves) as conservation forests. These conservation forest areas represent various types of ecosystems, including high-altitude tropical rainforests, lowland mountain forests, kerangas forests, peat swamps, *karst landscapes,* mangroves, coastal areas, seagrass beds, and marine waters with coral reefs. The details of the conservation forest areas are as follows in Table 1:

Table 1. Number and Area of KSA, KPA, and Hunting Reserves in Indonesia

No	Function	Number per Function	Area (Ha)
1	National Park	55	16,103,595.106
2	Nature Reserve	212	4,181,247.741
3	Wildlife Reserve	86	4,898,202.738
4	KSA/KPA	27	310,178.902
5	Nature Tourism Park	134	784,463.692
6	Hunting Park	10	137,662.262
7	Tahura	49	470,392.423
Total		**573**	**26,885,742,864**

Source: Directorate General of KSDAE, 2024

For marine areas, the Indonesian government targets a conservation area of 32.5 million hectares, or 10% of Indonesia's total marine area, by 2030. The total protected area based on KSA, KPA, marine conservation areas, coastal areas, and small islands up to 2023 reached 29.20 million hectares or around 8.96 percent of Indonesia's total sea area (KKP Performance Report, 2023). The authority for managing conservation areas in marine waters, coastal areas, and small islands in Indonesia is exercised by the Central Government through the Ministry of Marine Affairs and Fisheries and the Ministry of Environment and Forestry, as well as by the

for coastal areas up to 12 nautical miles, as shown in Table 2.

Table 2. Total Protected Area of Marine Protected Areas (MPAs), Coastal Protection Areas (CPAs), and Conservation Areas in Waters, Coastal Areas, and Small Islands up to 2023

No	Authority	Number	Area (Ha)	%
1	KLHK	15	5,804,566.41	19.83
2	KKP	30	4,557,443.30	15.57
3	Provincial Government	407	18,914,531.05	64.61
	Total	**452**	**29,276,540.76**	**100**

Source: Conservation Database System of the Ministry of Marine Affairs and Fisheries (2024)[4]

Indonesia's species diversity is also very high, with 1,500 species of algae, 80,000 species of spore-bearing plants in the form of fungi, 595 species of lichen, 2,197 species of ferns, and 30,000–40,000 species of flowering plants (15.5% of the total number of plant species in the world). Meanwhile, there are 8,157 species of vertebrate fauna (mammals, birds, herpetofauna, and fish) and 1,900 species of butterflies (10% of the world's total). Additionally, Indonesia's unique geology contributes to high levels of endemism in flora, fauna, and microorganisms. The endemism of fauna in Indonesia is exceptionally high, particularly for certain groups such as mammals, reptiles, and birds, which have the highest endemism rates in the world. Indonesia has 270 endemic mammal species, 328 reptile species, 386 bird species, 204 amphibian species, and 280 fish species. The level of endemic flora in Indonesia is recorded at between 40–50% of the total flora species on each island, except for Sumatra, where endemicity is estimated at only 23% (Widjaja *et al.,* 2014). Additionally, Indonesia has peatland ecosystems spanning 24.67 million hectares, distributed in the form of Peatland Hydrological Units (PHUs), which include both peat and non-peat lands. The peatland area of 14.9 million hectares is spread across four major islands: Sumatra, Kalimantan, Sulawesi, and Papua (*State of Indonesia's Forests,* 2024).

Based on the results of the Ecosystem Representation Gap Analysis conducted by the Ministry of Forestry, the Ministry of Marine Affairs and Fisheries, and various institutions in 2010, it was concluded that there are more than 105 million hectares categorized as important and supporting/connecting ecosystems that

[4]Conservation Database Systemhttps://sidakokkhl.kkp.go.id/sidako/index

located outside conservation areas. These important ecosystems are natural and/or artificial ecosystems that have high conservation value and function as wildlife corridors and buffer zones. Therefore, a regulatory framework is needed as part of the government's obligation to regulate the use of forest and land areas in Indonesia. Priority measures for important ecosystem areas that need protection are as follows: (1) Important ecosystem areas not yet included in protected areas, located in Other Land Use Areas and Conversion Production Forests; (2) Important ecosystem areas that are still outside protected areas, which are classified as production forest and limited production forest; and (3) Important ecosystem areas adjacent to protected areas, which are not yet included in protected areas. These facts are reinforced by the IUCN report in *the Protected Planet Report 2018*, which states that as of January 2018, of the existing *Key Biodiversity Areas (*KBA) ([5], only 21% have been managed as protected areas, while 35% of other KBAs have not been managed within a protected area system (UNEP, 2018).

Presidential Regulation No. 18 of 2020 concerning the 2020-2024 Medium-Term Development Plan states that there are 43.2 million hectares of land west of the Weber Line that must be preserved to prevent biodiversity loss and support sustainable and equitable national development. Therefore, conservation areas in Indonesia are considered insufficient to represent and provide protection for biodiversity in Indonesia. This is evidenced by the large number of important animal and/or plant species that can still be found outside conservation areas. Geldmann *et al. (*2013) also concluded that existing conservation areas are not yet able to protect all species within them, although they are quite effective in reducing the rate of habitat destruction compared to unprotected areas. The findings of Margono *et al.* (2014) also indicate that the rate of forest degradation in Indonesia was 15.78 million hectares between 2000 and 2012, with 38% of this occurring in primary forests. Data from LIPI (2014) show that biodiversity loss

[5] The Key Biodiversity Area (KBA) approach helps identify and designate areas of international importance for biodiversity conservation using globally accepted criteria. KBAs extend the concept of Important Bird Areas (IBAs) to other taxonomic groups and are currently being identified in many parts of the world by various organizations. Examples include Important Plant Areas (IPA), Ecologically and Biologically Significant Areas (EBSA) in the High Seas, Alliance for Zero Extinction (AZE) sites, Key Butterfly Areas, Important Mammal Areas and Important Sites for Freshwater Biodiversity, with prototype criteria developed for freshwater molluscs and fish and for marine systems (IUCN, 2016).

Indonesia's biodiversity, especially Sulawesi's endemic species, reaches 94%, partly due to the degradation of primary forests. Therefore, it is important to understand that conservation strategies that focus only on conservation areas and protected forests are essentially insufficient to ensure the sustainability of biodiversity in Indonesia.

Several facts support this study, including conflicts between wild animals and humans. For example, the number of conflicts between Sumatran tigers and humans reached 27 cases in 2018 and increased to 68 cases in 2019. Conflicts involving Sumatran elephants have relatively decreased, with 390 cases in 2018 and 268 cases in 2019 (KSDAE, 2020). Another fact is that around 78% of orangutans (*Pongo pygmaeus)* are outside conservation areas (Wich, S.A., et al., 2012). Other data indicate that 60% of protected wildlife populations in Kalimantan are outside conservation areas, such as in production forests and oil palm plantations (Meijaard et al. 2011), and approximately 80% of the habitat of endangered wildlife is outside the conservation area system (Ministry of Forestry and KKP, 2010).

The management of these important ecosystems must be adaptive to changing needs and information. To this end, ecosystem management requires an integrated approach across ecological, socio-cultural, policy and economic aspects. This means that conservation management cannot focus solely on conservation areas, but must take into account the dynamics of the surrounding areas in an integrated ecosystem management approach across a landscape. An integrated landscape approach is a term used to describe the approach of various stakeholders in managing a landscape (Denier, L., et al., 2015).

Efforts to protect and conserve biodiversity outside KSA/KPA have led to various definitions of the areas targeted for protection, including:

Table 3. Definitions of biodiversity protection areas

No	Terminology	Explanation and Basis
	Essential ecosystem	- Article 24(1) of Government Regulation No. 28 of 2011 states that protection activities in KSA and KPA include protection of **essential ecosystem areas** - The term "essential ecosystem areas" refers to karst ecosystems, wetlands (lakes, rivers, swamps, mangroves, and tidal areas not exceeding 6 (six) meters), mangroves, and peatlands located outside KSA and KPA. - Presidential Instruction No. 3 of 2010 on Equitable Development mandates the development of conservation areas and essential ecosystems in 11 priority provinces (North Sumatra, West Sumatra, Jambi, East Kalimantan, North Sulawesi, South Sulawesi, East Nusa Tenggara, West Papua, Central Sulawesi).
2	Important ecosystems	- Pursuant to Law No. 23 of 2014 on Regional Government, particularly regarding the division of government responsibilities in the forestry sector, provincial governments are mandated to implement management of important ecosystem areas - Based on Article 9 of Minister of Environment Regulation No. 29 of 2009 on Guidelines for Biodiversity Conservation in Regions, it is stated that local governments, in accordance with their authority, shall designate areas of importance for biodiversity conservation .
3	ABKT	High Conservation Value Areas, hereinafter referred to as ABKT, are patches of land that have important value for biodiversity conservation and produce environmental services (ecosystems) that are important for local communities (Directorate General of KSDAE Regulation Number P.5/KSDAE/SET/KUM.1/92017 on Technical Guidelines for Determining High Conservation Value Areas within KSA, KPA, and Hunting Reserve Areas
4	NKT/HCV	- Listed in Ministry of Agriculture Regulation No. 38 of 2020 on the Implementation of Sustainable Oil Palm Plantation Certification in Indonesia but not defined NKT is the biological, ecological, social, and cultural value that has extraordinary significance or is very important. - High Conservation Value (HCV) is something of high conservation value at the local, regional, or global level, encompassing ecological, environmental services, social, and cultural values. - Generally used in the palm oil plantation sector
5	KBKT	High Conservation Value Area (HCVA) is an area that has one or more HCVs
6	ANKT	- High Conservation Value Areas, hereinafter referred to as ANKT, are land or areas that have important and significant biological, ecological, social and/or cultural value that is very important at the site, regional, national or global level. - Listed in East Kalimantan Governor Regulation No. 12 of 2021 on Criteria for High Conservation Value Areas; and East Kalimantan Governor Regulation No. 43 of 2021 on Management High Conservation Value Areas in Plantation Areas

No	Terminology	Explanation and Basis
7	HCVF	- High Conservation Value Forest or High Conservation Value Forest emerged in 1999 as 'Principle 9' of the sustainable forest management standards developed by the Forest Stewardship Council (FSC). - Generally used in the forestry sector
8	Protected Area	- Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.62/MENLHK/SETJEN/KUM.1/10/2019 on Industrial Forest Plantation Development: ▪ Protected Areas are areas designated based on identification results and must be protected for the preservation of the environment, including natural and man-made resources. ▪ The planning of the work area for the IUPHHK-HTI includes: (a) Cultivation Area; and (b) Protected Area. Cultivation; and (b) Protected Areas.
9	OECM	Other Effective Area-based Conservation Measures (OECM) - *A geographically defined space, not recognized as a protected area, which is governed and managed over the long term in ways that deliver the effective in situ conservation of biodiversity, with associated ecosystem services and cultural and spiritual values.* A geographically defined area, other than a Conservation Area, that is regulated and managed in a specific way for positive long-term and sustainable outcomes for the conservation of in situ biological diversity and related ecosystem functions and services, culture, spirituality, socio-economic values, and other relevant local values. - Based on the decision of the Convention on Biological Diversity CBD/COP/DEC/14/8 OECM Criteria: ▪ Not a Protected Area classified under the IUCN categories, or in Indonesia not classified as KSA/KPA and KK Perairan/laut ▪ Has clearly defined boundaries (*Geographically defined space*) ▪ The area *is* legally governed *and managed* ▪ The area contributes effectively and sustainably in the long term to the conservation of in situ biodiversity. ▪ The area has ecosystem functions and services (ecosystem services) and has cultural, spiritual, socio-economic, and other relevant local values
10	ICCA	*Indigenous Peoples and Local Community Conserved Areas* (ICCAs): *ICCAs are "natural and/or modified ecosystems, containing significant biodiversity values, ecological benefits and cultural values, voluntarily conserved by indigenous peoples and local communities, through customary laws or other effective means".* Natural and/or modified ecosystems containing significant biodiversity values, ecological benefits, and cultural values, voluntarily conserved by indigenous peoples and local communities, through customary laws or other effective means.

Although the forms of biodiversity and ecosystem protection have different names, the areas that need to be protected generally have similar or equivalent criteria, namely:

- high biodiversity at the ecosystem, species, and/or genetic levels;
- having unique, distinctive, and/or rare ecosystem types;
- serves as a habitat for protected animals, rare animals, endemic animals, endangered animals, animal corridors, and/or migratory animals;
- prone to human-wildlife conflict;
- has significant geological and volcanic value;
- has significant value as a water regulator (hydro-orological);
- has significant value as a source of oxygen production and/or carbon storage;
- plays a role in climate change mitigation and adaptation;
- has significant value as a source of food production;
- has potential for the development of ecotourism;
- has potential for bioprospecting development;
- serving as the habitat of indigenous communities and/or local wisdom; and/or
- vulnerable to natural disasters and/or the impacts of climate change.

3. Basic Pattern for the Development of Protected Areas for Life Support Systems

Sustainable management of natural resources is very important for ensure human welfare and environmental sustainability. Natural resource management must provide benefits for all sectors, namely economic, social, and cultural, based on the principles of precaution, environmental democracy, decentralization, and recognition and appreciation of local and environmental wisdom (Purba *et al*., 2023).

Law No. 5 of 1990 regulates the conservation of biological natural resources and their ecosystems as well as the protection of life support systems. The conservation of biological natural resources and their ecosystems aims to achieve the sustainability of biological natural resources and the balance of their ecosystems so that they can

better support efforts to improve community welfare and the quality of human life through activities such as:

1) protection of life support systems,
2) preservation of plant and animal species diversity along with their ecosystems, and
3) sustainable utilization of natural biological resources and their ecosystems.

Life support systems are natural processes involving various living and non-living elements that ensure the continuity of life. Protection of Life Support Systems involves efforts to preserve and conserve biological natural resources and their ecosystems by managing nature reserves, nature conservation areas, marine conservation areas, coastal areas, small islands, and preservation areas to support life support systems.

The Basic Pattern for the Development of Life Support System Protection Areas is a basic form of development aimed at maintaining ecological processes that support life. The Basic Development Pattern for WPSPK serves as a guideline for stakeholders in the management of WPSPK that must be implemented in Nature Reserves, Nature Conservation Areas, Marine Conservation Areas, Coastal Areas and Small Islands, as well as Preservation Areas.

a. Basic Development Pattern for WPSPK in Nature Reserves and Nature Conservation Areas

The designation of specific areas as protected areas is to maintain and develop the sustainability of biological resources and their ecosystems. Protected areas also serve to prevent damage to environmental functions. The designation of these areas must be accompanied by the establishment of basic management guidelines or regulations. One of the best examples of the management of life support systems is the management of Nature Reserves and Nature Conservation Areas (KSA/KPA).

Based on Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems in Indonesia, conservation areas are divided into five types: Nature Reserves (CA), Wildlife Reserves (SM), National Parks (TN), Nature Tourism Parks (TWA), and Forest Parks (Tahura). Additionally, there is another type categorized as a conservation area regulated under Law No. 41 of 1999 on

Forestry, namely Hunting Reserves (TB). The definitions of each of these areas are as follows:

- CA is an area that, due to its natural conditions, has unique plant species and/or plant diversity along with natural phenomena and ecosystems that require protection and conservation efforts so that their existence and development can continue naturally.
- SM is an area with unique or distinctive species of wild animals and/or biodiversity of wild animals that require protection and management of their populations and habitats for their survival.
- TN is an area with original ecosystems, managed through a zoning system and utilized for research, science, education, supporting cultivation, tourism, and recreation.
- TAHURA is an area with the purpose of collecting plants and/or wildlife, whether natural or non-natural, native or non-native species, that are non-invasive and utilized for research, science, education, supporting cultivation, culture, tourism, and recreation.
- TWA is an area used primarily for nature tourism and recreation.
- Taman Buru is a forest area designated as a site for regular hunting activities.

KSA/KPA management is a systematic effort to manage an area through planning, protection, conservation, utilization, monitoring, and control, with the aim of preserving plant and animal diversity in order to prevent species extinction, protect life support systems, and ensure the sustainable use of biological diversity.

Under Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems, natural conservation areas, which include National Parks, Forest Reserves, and Nature Tourism Parks, are designated solely for research, scientific,

education, and supporting cultivation without reducing the primary functions of each area.

The Basic Guidelines for the Development of WPSPK in Nature Reserves and Nature Conservation Areas are regulated by forestry laws and regulations.

b. Basic Guidelines for the Development of WPSPK in Water Conservation Areas, Coastal Areas, and Small Islands

The basic framework for the development of WPSPK in water conservation areas, coastal areas, and small islands focuses on several key principles, including conservation, sustainable utilization, and the empowerment of local communities. To ensure effective management of conservation areas, it is also necessary to measure the effectiveness of the management performance of these conservation areas. Therefore, standard tools are needed to evaluate the performance of conservation area management and to prioritize the development of effective management for area managers and planners. The Ministry of Marine Affairs and Fisheries has used the Conservation Area Management Effectiveness Evaluation (EVIKA) tool to measure conservation areas designated by the Minister of Marine Affairs and Fisheries, both those managed by the Central Government's Ministry of Marine Affairs and Fisheries and provincial governments. By 2024, the effectiveness of management in 90 conservation areas has been measured, with 14 conservation areas rated as sustainable (gold), 36 conservation areas rated as optimal (silver), and 40 conservation areas rated as minimum (bronze).

The basic framework for the development of WPSPK in marine conservation areas, coastal regions, and small islands is regulated by laws and regulations in the field of marine affairs and fisheries.

c. Basic Framework for the Development of Preservation Areas

Law No. 32 of 2024 includes Preservation Areas as part of the WPSPK. Preservation Areas are areas outside Nature Reserves, Nature Conservation Areas, and conservation areas in waters, coastal areas, and small islands whose ecological conditions are maintained to support the life-supporting functions or survival of Biological Resources and their Ecosystems. This approach includes regulations on human activities

to avoid changes or damage to natural habitats, protect endemic and rare species, and minimize negative impacts on the environment.

This protection strategy aligns with the conservation concepts outlined in Law No. 5 of 1990 on the Conservation of Biological Resources and Their Ecosystems, which mandates ecosystem protection through the establishment of nature reserves, national parks, and wildlife sanctuaries to maintain ecosystem balance. With this management, the preservation area functions as a conservation zone that protects flora and fauna from extinction, while promoting scientific research and environmental education without overexploiting natural resources.

d. Regulation of the utilization of protected areas within the life support system.

Natural resource management in utilization policies can enhance the welfare of the people in a sustainable and continuous manner. Therefore, a balance between the utilization and conservation of natural resources and the environment is an important prerequisite for the implementation of sustainable development. Controlled utilization of natural resources and environmentally friendly management of the environment will be one of the most important basic assets for national development as a whole.

At the species level, protection for endangered species is aimed at population recovery, while direct use of natural habitats should be avoided while still paying attention to genetic diversity. On the other hand, for species that are not yet endangered, protection is carried out through the control of utilization by applying principles of non-destructive harvesting or, according to *the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)*, referred to as *non-detriment findings.*

4. Effective Management of Protected Areas

The United Nations Convention on Biological Diversity (UNCBD), signed in 1992 and officially in force in 1995, divides biological diversity into three levels, namely

diversity at the (*United Nations*, 1992; *Secretariat of CBD*, 2005): genetic, species, and ecosystem levels. This convention has strengthened the World Conservation Strategy (*World Conservation Strategy)* initiated by *the International Union for Conservation of Nature (*IUCN, 1980), which inspired the enactment of Law No. 5 of 1990, whereby conservation includes 3P activities (protection of life support systems, preservation of germplasm, and sustainable use). Therefore, biodiversity conservation must also be implemented simultaneously at all three levels of biodiversity. Furthermore, the three components of biodiversity, as outlined in the Convention on Biological Diversity (UNCBD) ratified by Indonesia through Law No. 5 of 1995, are managed through three pillars:

1) Biodiversity conservation;
2) Sustainable use of components of biological diversity;
3) Fair and equitable sharing of the benefits arising from the utilization of genetic resources.

As mentioned above, conservation can be divided into two major components that are inseparable and mutually influential, namely protection and utilization, so that biodiversity conservation is described as the protection and utilization of genetic, species, and ecosystem diversity while remaining based on the three pillars of the Convention on Biological Diversity. This is supported by the theories and principles *of conservation biology,* which state that biodiversity conservation must have a positive impact on human well-being and vice versa (Indrawan et al., 2007).

The Convention on Biological Diversity at the 7th Conference of the Parties in 2004 and *the IUCN-World Park Congress* in Barcelona in 2009 set a target of 10% of a country's territory to be designated as conservation areas or protected areas. The figure of 10% is not a scientific calculation, but rather a political one, as the percentage of land that should be protected may be higher depending on the type of ecosystem. Furthermore, these protected areas must be designed and managed in accordance with the objectives of protecting the ecological integrity and undisturbed species diversity, being sufficiently large and interconnected to ensure the flow and reserves of genetic material, and protecting the evolutionary processes of ecosystems.

Management of protected areas is necessary to address management challenges that require a multifaceted approach, including

better funding, stronger policies, community involvement, and adaptive management strategies, as outlined by Hoffmann (2022) and Anthony and Kovacs (2023), as follows:

a. Land use: use for agriculture, settlements, and infrastructure development can damage habitats and reduce the effectiveness of protected areas.
b. Climate Change: Changing weather patterns, rising temperatures, and extreme weather events can disrupt ecosystems and species within protected areas.
c. Invasive Species: Non-native species can outcompete, prey on, or carry diseases to native species, leading to the loss of local biodiversity.
d. Economic Constraints: Limited funding and declining national budgets can hinder effective management and conservation efforts.
e. Lack of Resources: Inadequate staff, expertise, and equipment can hinder the implementation of management plans and enforcement of regulations.
f. Governance Issues: Conflicts among stakeholders, weak policy enforcement, and corruption can undermine conservation efforts.
g. Human-Wildlife Conflict: Interactions between humans and wildlife, such as crop destruction or livestock predation, can lead to negative attitudes toward conservation efforts.
h. Data gaps: Lack of *reliable* data series, particularly on ecosystem status and threats, can make it difficult to plan and adapt management strategies effectively.

Good management must be rooted in a comprehensive understanding of the conditions of each protected area, carefully planned and implemented, and include regular monitoring, leading to changes in management when necessary. Management refers to a cycle of planning, implementation, monitoring, evaluation, and review aimed at achieving management outcomes and objectives as well as various socio-economic benefits for communities (Tomićević-Dubljević and Dimović, 2020).

Management begins with understanding the context of the protected area, including its value, threats and opportunities, stakeholders, and environmental and political management; develops through planning: setting a vision, objectives, targets, and strategies to conserve value and reduce threats; allocating inputs (resources) such as staff, budget, and

equipment to achieve objectives; implementing management actions in accordance with accepted processes; and finally producing outputs (goods and services, which should typically be specified in management plans and work plans) that generate impacts or outcomes, which are expected to achieve the established objectives and targets (Hockings *et al.,* 2006).

Effective protected area management is critical for conserving biodiversity and maintaining ecosystem services. Many key factors contribute to the success of protected area management (Pulido-Chadid et al. 2023; Wilson and Primack, 2019; Hoffman, 2022), including:

1) Clear Objectives and Planning: Establishing clear conservation objectives and comprehensive management plans is essential. This includes defining the objectives of the protected area, identifying key species and habitats that need protection, and setting measurable targets.
2) Adequate Funding and Resources: Adequate financial resources and staff are needed to implement management plans, conduct monitoring, and enforce regulations. This also includes investing in infrastructure and equipment.
3) Stakeholder Engagement: Involving local communities, indigenous peoples, and other stakeholders in the planning and management process ensures that their needs and knowledge are taken into account. This can lead to greater compliance with and support for conservation efforts.
4) Effective Governance and Leadership: Strong leadership and governance structures are necessary to oversee management activities, make decisions, and resolve conflicts. This includes transparent decision-making processes and accountability mechanisms.
5) Adaptive Monitoring and Management: Regular monitoring of biodiversity, ecosystem health, and management effectiveness enables adaptive management. This means adjusting strategies based on monitoring results and new scientific information.
6) Law Enforcement and Regulation: Effective law enforcement and regulation are essential to prevent illegal activities such as poaching, logging, and land encroachment. This requires trained personnel and collaboration with law enforcement agencies.

7) Capacity Building and Training: Providing ongoing training and capacity building opportunities for staff and local communities improves their ability to effectively manage and protect the area.
8) Integration with Wider Landscapes: Protected areas should be integrated into wider landscapes and seascapes to ensure ecological connectivity and resilience. This involves coordination with surrounding land use and other conservation initiatives.
9) Sustainable Financing Mechanisms: Developing sustainable financing mechanisms, such as ecotourism, payments for ecosystem services, and conservation trust funds, can provide long-term financial support for protected area management.
10) Climate Change Adaptation: Incorporating climate change adaptation strategies into management plans helps address the impacts of climate change on biodiversity and ecosystems.

These factors, if implemented effectively, can significantly improve the results of protected area management and conservation.

5. Community Participation

From a production perspective, prioritizing the interests of the people is key to successful forest management. Therefore, forest management practices that are solely focused on timber and neglect the rights and involvement of communities need to be transformed into management that is oriented toward the full potential of forest and land resources and based on community empowerment.

Concern for the environment in general and forests and land in particular is not solely the responsibility of the government. However, efforts made by the government to manage and organize forests will not be successful without the support of the community in general and the communities living around the forests in particular.

When discussing participation, as defined by Abdullah (1990: 2), it largely refers to *the local community's response* to recommendations and guidelines on new methods, the use of technology, and their willingness to make sacrifices (in the form of investment) of capital, time, labor, and money to achieve development goals.

The forms of community participation in the management and conservation of the environment, particularly forests and land, need to be nurtured and developed in the administrative sphere through various means appropriate to the knowledge and experience of the community members concerned. As Hardjasoemantri (1995: 2) points out:

a. Providing information to the government

   Community participation is essential to provide input to the government regarding issues arising from government action plans and their various consequences. This enables the government to identify the various interests that may be affected by such actions and require consideration.

b. Enhancing community willingness to accept decisions

   A member of the community who has had the opportunity to participate in the decision-making process and is not faced with a fait accompli will tend to show greater willingness to accept and adapt to the decision. On the other hand, community participation in the decision-making process can greatly reduce the likelihood of conflict, provided that such participation takes place at the right time.

c. Assisting legal protection

   If a final decision is made taking into account the objections raised by the community during the decision-making process, then in many cases there will be no need to take the matter to court.

d. Democratizing decision-making

   In relation to community participation, there is an opinion that in a representative system of government, the power to govern lies with the representatives elected by the people.

In particular, in efforts to preserve forest functions, the support of community members, both individuals and groups, is greatly needed. This is because community members, in their respective capacities and positions, are directly or indirectly connected to forests. Recognizing this, the government has provided a legal framework for community participation in forest management efforts.

This community participation is also evident in remote areas, where customary laws related to forest conservation are still strictly adhered to. This reality has been anticipated by the government by giving a large portion of the role to the community to participate in forest conservation. Rural communities, through their traditional leaders, continue to maintain and preserve customary law institutions, which are believed to be legal institutions that can regulate the balance and harmony of human relations with the natural environment.

Law No. 19 of 2004 on Forestry (hereinafter referred to as UUK), which revised Law No. 41 of 1999, states that forests, in their capacity as one of the determinants of the life support system, also provide great benefits to humanity. Therefore, their sustainability must be maintained. Forests play a role as harmonizers and balancers of the global environment, making their connection to the international community highly important while prioritizing national interests. The provisions governing forest protection in the UUK are further regulated in Government Regulation No. 28 of 1985 on Forest Protection, which states that:

> "Prohibitions on cutting down trees in forests, collecting and taking forest products, burning forests without authorization, grazing in forests, and taking grass and brushwood in forests, except with permission from the authorized official."

Thus, forest management must be improved in an integrated and environmentally friendly manner so that the functions of land, water, air, and climate can provide benefits for humans. The government, through the Decree of the Minister of Forestry and Plantations No. 32/Kpts-II/2001 on Criteria and Standards for the Confirmation of Forest Areas, states that:

> "Community forest management is granted to local communities to utilize forest resources in accordance with their needs, capabilities, and knowledge for a certain period of time."

Thus, communities feel a sense of responsibility for forest conservation with the forest's original functions, status, and ownership. Target locations can be protected forests and nature conservation areas in specific zones.

B. Empirical Practices

1. Initiatives to Protect Biodiversity Values

Initiatives to protect areas with high biodiversity value outside conservation areas to protect key species have been widely implemented in Indonesia, such as:

1) Protection of Kalimantan orangutan habitats, with the establishment of a collaboration forum in (proposed) Essential Ecosystem Areas (KEE) such as East Kalimantan Governor's Decree No. 660.1/K.214/2016 dated April 6, 2016, on the establishment of the Wehea Landscape Orangutan Corridor KEE Management Forum-Kelay in East Kutai Regency and Berau Regency, East Kalimantan Province.
2) Protection of orangutans and proboscis monkeys, with the issuance of the West Kalimantan Governor's Decree, through letter No. 805/DISHUT/2016 dated November 24, 2016, concerning the Establishment of the Orangutan and Proboscis Monkey KEE Management Forum in West Kalimantan Province.
3) Protection of Sumatran tigers, with the issuance of the West Sumatra Governor's Decree, through letter No. 522.5/2867/DISHUT-2018 dated July 31, 2018, regarding the establishment of the Collaboration Forum for the Management of the Tiger and Other Wild Animals KEE Corridor in South Solok Regency and Dharmasraya Regency, West Sumatra Province.
4) Protection of Sumatran elephants, with the issuance of Jambi Governor's Decision No. 177/KEP.GUB/DISHUT-3.3/2020 dated February 19, 2020, regarding the establishment of the Collaboration Forum for the Management of the Sumatran Elephant Wildlife Corridor in the Bukit Tiga Puluh Landscape, Tebo District, Jambi Province.
5) Kiara Payung Biodiversity Park, located in Sumedang Regency, West Java Province, was established by the Governor of West Java (593/Kep.821/BPLHD/2011) on June 14, 2011.

In addition to the aforementioned areas, biodiversity protection is also implemented through an intellectual property rights protection scheme in the form of a Geographical Indication (GI) label. Referring to Law No. 20 of 2016 on Trademarks and Geographical Indications, a GI is a sign indicating the place of origin of a product or goods due to geographical factors, including natural factors, and conferring specific characteristics or qualities. This scheme also serves as a conservation effort for local plant species. Currently, there are approximately 167 GIs registered with the Directorate General of Intellectual Property, such as Pulu Mandoti Rice

Enrekang from South Sulawesi, Lingga Sago in the Riau Islands, Adan Krayan Rice in North Kalimantan, Tapak Tuan Nutmeg from Aceh, and others.

This initiative to protect biodiversity is in line with efforts to establish protected areas for life support systems as stipulated in Law No. 32 of 2024 amending Law No. 5 of 1990 on the Conservation of Biological Resources and Their Ecosystems. The implementation of environmental protection and management based on Law No. 32 of 2009 must, among other things, be based on the principle of biodiversity ([6]).Furthermore, in an effort to provide protection and management of biodiversity in accordance with Law No. 23 of 2014, it mandates the protection of biodiversity by local governments, known as important ecosystems.

These facts indicate that better regulations are needed so that biodiversity conservation initiatives within or outside KSA/KPA by various parties can be carried out properly, with accountability and based on scientifically sound practices, so that they are in line with national development programs, such as sustainable agriculture and sustainable fisheries. Examples of sustainable utilization practices in several sectors include:

a. Agriculture: integrated pest management (IPM), crop rotation, organic farming, agroforestry, sustainable water management, *cover* crops.
b. Plantation: *Indonesian Sustainable Palm Oil* (ISPO) Certification System
c. Fisheries: fishing quota regulation, environmentally friendly fishing gear, fishing in designated zones, sustainable aquaculture (sustainable aquaculture).

2. Utilization of Protected Areas and Life Support Systems

Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia as the constitutional basis obliges the state to control and utilize the earth, water, and natural resources contained therein

[6]The protection and management of the environment must take into account integrated efforts to maintain the existence, diversity, and sustainability of biological natural resources, which consist of plant and animal natural resources together with non-living elements in their surroundings, forming ecosystems as a whole.

For the greatest prosperity of the people, forestry management must always embody the spirit of democracy, justice, and sustainability. Therefore, forestry management must be carried out based on the principles of benefit and sustainability, democracy, justice, solidarity, openness, and integration, grounded in noble ethics and accountability.

Natural resource management in utilization policies can improve people's welfare in a sustainable and continuous manner. To that end, a balance between the utilization and preservation of natural resources and the environment is an important prerequisite for the implementation of sustainable development. Controlled utilization of natural resources and environmentally friendly management of the environment will be one of the most important foundations for national development as a whole. Forests, as a fundamental asset for national development, provide tangible benefits for the life and livelihood of the Indonesian people, including ecological, socio-cultural, and economic benefits, in a balanced and dynamic manner. Therefore, forests must be managed, protected, and utilized in a sustainable manner for the welfare of the community, both for present and future generations.

In order to obtain optimal benefits from forests and land for the welfare of the community, in principle, all forests and land can be utilized while still considering their characteristics and vulnerabilities, and it is not permissible to change their primary functions. The utilization of forests and land must be in accordance with their primary functions, namely protection, production, and conservation. To maintain the sustainability of primary functions and the condition of forests and land, forest and land rehabilitation efforts are also carried out, which aim not only to restore the quality of forests and land but also to enhance community empowerment and welfare, thereby making community participation the core of its success.

a. Utilization of Genetic Resources

According to the UNCBD, genetic resources also include microorganisms (microorganisms) and traditional knowledge associated with genetic resources. With the adoption of the Nagoya Protocol under the UNCBD (*CBD Secretariat,* 2010) on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization, the utilization of genetic resources and the fair sharing of benefits with the owners or providers of genetic resources must be properly regulated.

For Indonesia, which is rich in biodiversity but relatively lagging behind in science and technology, the Nagoya Protocol, supported by adequate national legislation, will be very helpful in protecting its genetic resources and obtaining fair benefits from their utilization. In this context, the protection of genetic resources is crucial because superior traits are associated with genetic diversity, and the higher the genetic diversity, the greater the likelihood of obtaining superior traits.

Awareness of the importance of genetic resources for humanity has been recognized since prehistoric times. Since humans entered the stage of farming and animal husbandry, the breeding of plant and animal species has been underway. The selection of species and crossbreeding, which were initially done empirically, actually marked the beginning of the recognition of desirable traits and undesirable traits, which are essentially physiological expressions of genetic variability among cultivated plants and livestock. It was not until the 18th century to the early 19th century, during the Mendelian era, that knowledge of hybridization emerged, marking the beginning of systematic efforts to select genetic expressions from genetic variability within a plant. It was at this point that the technical/scientific value of genetic resources became recognized. With the development of biotechnology in agriculture and pharmaceuticals,

Therefore, the value of genetic resources has increased. Initially, the value of genetic resources was tied to the physical ownership of a commodity crop and/or livestock variety. With the advancement of knowledge in the biological sciences and all its branches (including genetics), the intrinsic value of living organisms, known as genetic variability, began to be recognized. The advancement of biological science has increased the potential for utilizing genetic resources, thereby also increasing the value of these resources. In line with the development of the agricultural and pharmaceutical industries that utilize biotechnology and genetic resources, the exploration of new genetic resources has also increased.

Related to the issue of increasing the value of genetic resources, problems have arisen regarding the exploration, conservation, and utilization of genetic resources and the procedures for obtaining them (access). Considering that the existence of

the genetic resources in question is related to the sovereignty of a country and/or the ownership of resources (land, forests, or specific varieties) by communities, whether individual or communal, issues of exploration, conservation, and utilization are also linked to issues of ownership rights over resources and the sharing of benefits associated with the utilization of genetic resources.

b. Utilization of Wild Plant and Animal Species

The utilization of species must be carried out legally and based on the principle of sustainability to maintain their existence and ecological function. However, illegal utilization practices that do not comply with this principle still occur. Therefore, sustainable management and utilization of species need to be continuously promoted. This includes not only regulations related to utilization but also consistent law enforcement against violators. Strengthening the role of various parties, such as law enforcement officers and relevant agencies, is also important in addressing illegal practices. Setting quotas for species utilization is one measure to ensure that utilization is sustainable. At the national level, regulations on utilization based on quotas have been established through government regulations and ministerial decrees, both at the Ministry of Environment and Forestry and the Ministry of Marine Affairs and Fisheries. KKP has set a catch quota of 80 percent of the sustainable catch (maximum sustainable yield - MSY). For the utilization of TSL and fish species listed in the CITES appendices, quota regulations are established through scientific studies and comply with the principles set out in CITES to ensure sustainable utilization.

The utilization of biological resources makes a significant economic contribution to society. In 2023, trade in wild plants and animals (TSL) to foreign countries generated foreign exchange earnings of more than Rp10 trillion, while non-tax state revenue (PNBP) from the utilization of TSL reached Rp27.54 billion. There are 72 active TSL breeding companies, with total revenue of Rp135 billion in 2022 and a workforce of 921 employees. In the marine and fisheries sector, PNBP from capture fisheries in 2022 reached Rp1.2 trillion, an increase compared to the previous year's Rp750 billion. The average capture fisheries production over the past five years exceeded 7 million tons per year, with a 2023 target of 7.7 million tons.

c. Utilization of Ecosystem Services

Ecosystem utilization is directed toward the use of existing and protected ecosystem services, such as natural beauty services for tourism purposes and carbon storage and sequestration services for trade in mitigation of climate change. In this context, regulations regarding payment for ecosystem services need to be properly established to ensure that those protecting these services receive fair benefits from their use.

From this description, it is clear how important biodiversity conservation is. Biodiversity is the future of human sustainability in the coming years because the food, health, and biotechnology industries will be highly dependent on biodiversity. Biodiversity serves as a source and foundation of life, both for current generations and for the future of human existence. Therefore, its conservation is absolutely essential to prevent extinction and degradation at all levels of its diversity.

The utilization of environmental services in nature conservation areas is carried out based on permits. Conservation areas that can be used for ecosystem service utilization purposes include national parks, nature parks, wildlife reserves, hunting reserves, and forest parks. Nature reserves and core zones of national parks can only be utilized for limited nature-based tourism services. The utilization of the aforementioned ecosystem services includes nature tourism, water resource utilization, hydropower, wind energy, solar energy*, geothermal energy,* and forest carbon within the framework of climate change mitigation and adaptation actions.

1) Nature Tourism

The potential for nature tourism is highly diverse, with each national park, nature park, and forest park having its own unique characteristics, such as ecosystem diversity, natural landscapes, waterfalls, natural phenomena, and biodiversity of flora and fauna. The utilization of environmental services in the form of nature tourism has been ongoing for a long time, carried out in the form of tourist trips, both by domestic and international tourists. The development of nature tourism facilities for visitor services is prepared by the government through area management, such as gateways, halls, walking paths, information boards, shelters, and others.

The involvement of third parties, including the community, in obtaining economic benefits while adhering to conservation principles is regulated

in Government Regulation No. 36 of 2010 on the Management of Nature Tourism in Wildlife Reserves, National Parks, and Forest Parks, and Nature Tourism Parks (revoking Government Regulation No. 18 of 1994), and Ministry of Forestry Regulation No. P.48/Menhut-II/2010 on the Management of Nature Tourism in Wildlife Reserves, National Parks, Forest Parks, and Nature Tourism Parks.

Other tourism facilities, such as accommodation facilities, may be constructed by third parties with the issuance of a Nature Tourism Facility Business License (IUPSWA), previously known as the Nature Tourism Business License (IPPA). In addition to the IUPSWA, a Natural Tourism Service Provision Business License (IUPJWA) is also issued, aimed at licensing services for natural tourism service providers, such as guiding services and transportation. Currently, there are 40 holders of the Natural Tourism Facility Provision Business License.

2) Utilization of water and water energy

Under Law No. 5 of 1990, the utilization of area potential for water supply, both as water mass and as water energy, has not been accommodated on the one hand, while on the other hand there is a community need to obtain water sources from conservation areas, both in nature reserves and nature conservation areas.

For example, Gunung Gede Pangrango National Park produces 4.3 billion liters of water per year. Approximately 65% of this water is utilized as a public good, while the remainder can be used as a commercial good for water mass and water energy purposes. With this approach, the commercial water potential in national parks in Indonesia is estimated at around 6.5 billion cubic meters per year. This potential holds extraordinary economic value if managed properly, whether for meeting clean water needs (bottled water or public water supply) or as a source of energy for power generation.

The regulatory impasse mentioned above was addressed by the government through the issuance of Government Regulation No. 28 of 2011 on the Management of Nature Reserves and Nature Conservation Areas (revoking Government Regulation No. 68 of 1998 on Nature Reserves and Nature Conservation Areas). Under this regulation

, water utilization is only permitted in Wildlife Reserves, National Parks, Nature Tourism Parks, and Forest Parks. Water utilization in Nature Reserves is prohibited. In terms of area management, water utilization is controlled by permits and may be carried out outside the core zone and forest zone of national parks, and protection blocks of wildlife reserves, nature tourism parks, and forest parks.

Currently, there are holders of water use permits or water energy permits (non-commercial) and holders of water use business permits or water energy permits (commercial), distributed as follows:

Table 4. Holders of Water Energy Utilization Permits – Non-Commercial

No	Name of License Holder	Permit Location	Capacity (KWh)
1	IPEA	KSDA (2)	430
2	IPEA TN	TN (18)	194.5
	Total		**624.5**
Total Number of IUPEA and IPEA			**25,224.5**

Table 5. Companies in the process of obtaining an Energy Water Supply Business License

No	Company Name	License Location	Capacity (KWh)
1	PT. Hidro Alam Lestari	TNGHS	7,000
2	PT. Hidro Alam Cidurian	TNGHS	4,500
4	PT. Cibodas Hydro Energy	TNGHS	1,500
5	PT. Halimun Banyu Energy	TNGHS	5,279
6	PT. Atamora Teknik Makmur	TNGHS	4,000
7	PT. Tridegra Power	TNGHS	300
8	PT. Inti Alam Lestari	TNKS	10,000
9	PT. Hydro Energy Investment	TNBBS	10,000
1	PT. Hydro Power Utilization	TNKS	8,229
11	PT. Renewable Energy	TNKS	5,637
12	PT. Water Power Synergy	TNKS	8,229
13	PT. Lauser Mega Hidro	TNGL	9,500
14	PT. Lauser Hidro Energi	TNGL	6,500
15	PT. Lauser Hidro Energi Indoraya	TNGL	4,200

16	PT. Mandiri Hydro Energy	TNGL	9,591
17	PT. Mega Lauser Energy	TNGL	8,756
18	PT. Bogani Hydro Energy	TN Boganani	5,190
19	PT. Bumbung Hydro Energy	TN Boganani	9,800
			120,911

Source: ……

Table 6. Holders of Water Energy Utilization Business Licenses – Commercial (under construction)

No	Company Name	License Location	Capacity (KWH)
1	PT. Bone Bolango Energy	TN Bogani Nani Wartabone	7,400
2	Brantas Cakrawala Energi	TN Kerinci Seblat	6,000
4	PT. Kanz Capital	East Java Natural Resources Conservation Agency	**4,600**
5	PT. Antamloka Halimun Energy	TN Halimun Salak Mountain	**5,000**
6	PT. Arena Maju Bersama (PKS)	TN Manupeu	1,600
Total			**24,600**

Source: ……

3) Geothermal energy utilization

According to data from the Ministry of Energy and Mineral Resources, Indonesia's geothermal potential accounts for 40% of the world's total geothermal potential, with 70% of this potential located in conservation areas. Geothermal energy is energy extracted from heat stored within the earth. Currently, geothermal energy is used to generate electricity. Some conservation areas that have utilized their geothermal potential include Gunung Halimun Salak National Park, Papandayan Nature Reserve, and Kamojang Crater.

The enactment of Law No. 21 of 2014 on Geothermal Energy has opened opportunities for the utilization of geothermal energy in conservation areas. To follow up on this law and to provide legal certainty for the operational development of geothermal energy in conservation areas,

the government issued Government Regulation No. 108 of 2015 amending Government Regulation No. 28 of 2011 on the Management of Nature Reserves and Nature Conservation Areas, and subsequently issued Ministerial Regulation No. 46/Menlhk/Setjen/Kum.1/III/2016 on the Utilization of Geothermal Environmental Services in National Parks, Forest Parks, and National Parks.

With this policy, in 2016, the first Geothermal Environmental Service Utilization Permit (IPJLPB) for the exploitation and utilization phase was issued to PT. Pertamina Geothermal Energy – Chevron Geothermal Salak, Ltd. in the Utilization Zone of Gunung Halimun Salak National Park, with a business area of 228.69 hectares in Sukabumi and Bogor Regencies, West Java Province (Decision of the Head of the Investment Coordinating Board on behalf of the Minister of Environment and Forestry No. 1/1/IPJLPB/PMDN/2016 dated August 12, 2016), and in 2017, the IPJLPB for the exploitation and utilization phase was issued to PT. Indonesia Power in the Utilization Zone of Gunung Halimun Salak National Park covering an area of 13,725 hectares in Bogor Regency, West Java Province (Decision of the Head of the Investment Coordinating Board on behalf of the Minister of Environment and Forestry No. 1/1/IPJLPB/PMDN/2017 dated January 17, 2017).

4) Forest Carbon

The issue of forest carbon, which has been discussed at the international level through climate change conventions, namely the United Nations Framework Convention on Climate Change (UNFCCC), has been followed up at the national level, including by the Ministry of Forestry (now the Ministry of Environment and Forestry) with policy products at the level of Minister of Forestry Regulations, such as Minister of Forestry Regulation Number: 30/Menhut-II/2009 on Procedures for Reducing Emissions from Deforestation and Forest Degradation (REDD), Minister of Forestry Regulation No. 36/Menhut-II/2009 on Procedures for Licensing the Utilization of Carbon Absorption and/or Storage in Production Forests and Protected Forests, and Minister of Forestry Regulation No. P.20/Menhut-II/2012 on Forest Carbon Management.

Conservation areas have the capacity to store and absorb carbon, so in the context of climate change, they have adaptation and mitigation benefits, but currently there are no carbon trade transactions. Currently, there are only REDD+ Demonstration Activities based on the approval of the Minister of Forestry (now the Minister of Environment and Forestry) on the implementation of DA REDD+, each in Sebangau National Park (SK.831/Menhut-II/2013 on the Approval of the Implementation of DA REDD+ in Sebangau National Park covering an area of 74,167 Ha), in Berbak National Park (SK.549/Menhut-II/2013 on the Approval of the Implementation of DA REDD+ in Berbak National Park covering an area of 142,750 ha), and in Meru Betiri National Park (SK. 86/Menhut-II/2014 on the Approval of the Implementation of DA REDD+ in Meru Betiri National Park covering an area of
58,000 hectares).

With reference to the results of the 2007 Conference of the Parties (COP 13) to the UNFCCC in Bali, guidelines were issued for implementing REDD+ (Reducing Emissions from Deforestation and Forest Degradation) initiatives. Reducing emissions from deforestation and forest degradation encompasses all forest management efforts aimed at preventing and/or reducing the decline in forest cover and carbon stocks through various activities that support sustainable national development.

In Government Regulation No. 108 of 2015 amending Government Regulation No. 28 of 2011 on the Management of Nature Reserves and Nature Conservation Areas, it is stated that the utilization of conservation areas includes activities related to carbon absorption and/or storage. Considering the developments in the issue of forest carbon in accordance with the outcomes of the COP UNFCCC, particularly the results of COP 13 UNFCCC in Bali, in the context of environmental service utilization, the use of the term carbon services in conservation forests is more appropriate considering that the role of conservation areas is to focus on protection efforts to maintain carbon stocks and increase carbon stocks, which are aimed at improving the effectiveness of conservation forest area management in the context of climate change mitigation and adaptation.

To address the development of forest carbon issues in conservation areas and ensure the sustainability of existing REDD+ Demonstration Activities,

Currently, a ministerial regulation on Forest Carbon Services in Conservation Forest Areas is being prepared, which regulates emission reduction schemes, forest carbon conservation schemes, and forest carbon stock enhancement schemes within the framework of contributions or recognition of the role of conservation areas in climate change mitigation and adaptation actions.

3. Community Participation in the Preservation of Life Support System Protection Areas

The current paradigm of conservation area management places communities as subjects in supporting conservation area management through a framework of empowerment of communities surrounding conservation areas. One important process in community empowerment is mentoring. Assistance in community empowerment is carried out through various means, including conservation agreements, granting access to traditional use, improving community group business units, and providing assistance in the utilization of environmental services in conservation areas.

A total of 879 villages in 35 provinces across Indonesia received community empowerment support in 2023. This achievement was made possible by several factors, including:

1) Community awareness of the need to comply with rules and regulations within conservation areas.
2) Intensive guidance provided by the KSDAE-affiliated UPT.
3) Good support and coordination with local governments around conservation areas.
4) Providing access to traditional utilization of non-timber forest products.
5) Support from conservation area management partners such as NGOs, universities, community leaders, the private sector, and collaborative projects.

In its role as one of the life support systems, it has provided enormous benefits to humanity. Therefore, its preservation must be ensured. In addition, forests play an ecological role as harmonizers and balancers of the global environment, making their connection to the international community very important, even though national interests remain paramount. The designation of tropical rainforests as the lungs of the world is closely related to

the ecological role of forests. This role is highly strategic as a supporter of life. Forests are valuable not only for their timber, but also for their natural resources and biodiversity. With their natural resources, forests can prevent drought, heat, and severe weather that are very harmful to humans.

Community participation in protecting life support systems can be seen in the following conservation practices:

a. Protection of species and ecosystems in KSA/KPA is carried out through strengthened regulations and collaboration between the government, non-governmental organizations, and local and indigenous communities. One example is the participatory strengthening of customary law in the management of the Sentarum Lake ecosystem and its endemic fish species. For over 10 years, Betung Kerihun National Park and Lake Sentarum (TN-BKDS) have worked with the NGO Riak Bumi, village representatives (village officials, traditional leaders, fishing community leaders, and forest honey farmers), and women's representatives have agreed to ban the fishing of toman fish under 5 (five) centimeters, reject the introduction of non-native/alien fish species, prohibit forest burning, and impose sanctions on violators in the form of fines.
b. The implementation of Sasi practices, commonly found among communities in eastern Indonesia, is a manifestation of natural conservation and the preservation of species populations through the prohibition of the extraction of certain natural resources within customary areas. Another example in the management of the fisheries and marine sector is the Panglima Laot approach in Aceh, which has been established in Aceh Regulation No. 10 of 2008. Under this approach, indigenous communities establish institutions that function to regulate, coordinate, establish, and impose penalties on violators, with the role of resolving disputes among fishermen, preserving and maintaining the functions of coastal and marine environments, advocating for improved living standards for fishermen, and preventing illegal fishing.
c. The implementation of customary law in the Ammatoa community, Kajang subdistrict, Bulukumba regency, known as *Pasang,* includes a rule that if a violation occurs, such as cutting down a tree, the following sanctions are imposed (Salle, 2000: 108):
    1) If a tree is cut down in the Borong Karamaka area, the penalty is the babbalak (the base of a whip), which is a fine of Rp 800,000 plus one roll of white cloth. The felled tree, including

branches, twigs, and leaves must be returned to their original location and left to rot there.

2) If a tree is cut down in the Borong Battasaya area, the penalty is Tangnga Babbalak (the middle part of the whip), which is a fine of Rp 400,000 plus one roll of white cloth.
3) If a tree is cut down in the Koko area (community garden), the penalty is Cappak Babbalak (the tip of a whip), which is a fine of Rp 200,000 plus one roll of white cloth. The felled tree is handed over to the community members who control the Koko.

The forest is so important to the community that when they need materials to build houses, they are willing to buy and bring in building materials from outside the area. If there is a possibility of obtaining a tree from within the forest (which is also limited and can only be cut down in the forest border area), permission must first be obtained from the Ammatoa.

d. The protected and conservation forest areas within the Bantimurung Nature Tourism Park (TWA) in Maros District should be free from exploitation by outsiders, but this is not the case in reality. Based on the assessment of Commission B of the South Sulawesi Regional Parliament, the forest damage is suspected to be intentional, as irregularities were found in the management of the Bantimurung TWA, particularly the use of the area for several projects (such as the presence of the Bosowa cement factory) that have cleared the forest on a large scale, resulting in the natural springs of Bantimurung no longer being as cool as before, and even wildlife such as butterflies being disturbed (Fajar Daily, January 8, 2007)

CHAPTER III
EVALUATION AND ANALYSIS OF RELATED LEGISLATION

In drafting the Government Regulation on the Protection of the Life Support System, consideration must be given to relevant laws and regulations that support, even complement, and enrich the content of this Government Regulation. Recognizing the delay in drafting this Government Regulation and the fact that some of the material has already been regulated in other laws and regulations, the regulatory material can be adopted in this Government Regulation. To complement and enrich the regulations as needed, the supporting laws and regulations include:

1. The Constitution of the Republic of Indonesia (UUD NRI) of 1945 as amended.

   Article 33 paragraph 3 of the 1945 Constitution of the Republic of Indonesia states that:

   "The earth, water, and natural resources contained therein are controlled by the State and utilized for the greatest prosperity of the people."

   Considering the utilization of genetic resources, biological security, the utilization of environmental services, the management of essential ecosystems, the management of Hunting Reserves, which hold national sovereignty value and constitute strategic resources vital to the livelihood of many people, and whose conservation and utilization involve the rights and obligations of citizens, it is necessary to regulate their management in a draft Government Regulation on the Protection of Life Support Systems.

2. Law No. 5 of 1960 on the Basic Principles of Agrarian Law (UUPA)

   This Law establishes several principles relevant to the utilization and conservation of genetic resources. Article 2(1) of this Law reaffirms what is stated in Article 33(3) of the 1945 Constitution of the Republic of Indonesia that the earth, water, and airspace, including the natural resources contained therein, are at the highest level controlled by the state, as the organization of the power of the entire people.

   This UUPA also stipulates in Article 3 that the exercise of customary rights and similar rights held by customary law communities is recognized to the extent that they are in accordance with national and state interests. Furthermore, Article 5 of the UUPA states that the agrarian law applicable to land, water, and airspace is customary law, provided that it does not conflict with national interests; Indonesian socialism; the provisions of the UUPA; and other applicable laws and regulations.

Therefore, these provisions must be taken into account, particularly when activities related to the utilization of genetic resources are carried out in customary law communities.

3. Decree of the President of the Republic of Indonesia Number 43 of 1978 dated December 15, 1978, concerning the Ratification of *the* "*Convention on International Trade in Endangered Species of Wild Fauna and Flora*" (Convention on International Trade in Endangered Species of Wild Fauna and Flora)

This Convention is the result of an international agreement drafted at a diplomatic conference in Washington D.C. on March 3, 1973, attended by 88 countries. The conference was a response to Recommendation No. 99.3 issued by the United Nations Conference on the Human Environment in Stockholm in 1972. The conference aimed to prevent the extinction of plant and animal species in the wild through the development of an international system for controlling trade in species of plants and animals and their products.

This control is based on the fact that exploitation for commercial purposes of wild plant and animal resources is one of the greatest threats to the survival of a species after habitat destruction. Species (plants and animals) are classified into three groups or Appendices: Appendix I, Appendix II, and Appendix III, depending on the level of protection required.

Each CITES member country is required to appoint two implementing authorities, namely a management authority and a scientific authority. Based on Government Regulation No. 8 of 1999 concerning the Utilization of Wild Plants and Animals, the *Management Authority* has been designated as the Ministry of Forestry and the *Scientific Authority* as LIPI.

Currently, there are 142 countries that have ratified CITES, and there are various international organizations that have declared their affiliation with CITES, such as *the International Atomic Energy Agency* (IAEA) and *the International Air Transport Association* (IATA). The CITES Secretariat has historically been associated with international conservation organizations such as *the* International *Union for Conservation of Nature and Natural Resources (*IUCN) and *the World Wildlife Fund (*WWF).

4. Law No. 8 of 1981 on Criminal Procedure Law

This law is often referred to as the Criminal Procedure Code (KUHAP). Investigations and inquiries in the KUHAP are contained in Chapter IV, Sections One and Three, while the implementation of authority is contained in Chapters V to VII, Chapter XIV, and Chapter XV. As stipulated in the law, it is regulated that:

1) An investigator is a police officer of the Republic of Indonesia who is authorized by this Law to conduct investigations.
2) An investigation is a series of actions taken by an investigator to search for and discover an event suspected to be a criminal offense in order to determine whether or not an investigation can be conducted.
3) An investigator is a police officer of the Republic of Indonesia or a specific civil servant who is granted special authority by this Law to conduct investigations.
4) Investigation is a series of investigative actions taken in accordance with the procedures set forth in this Law to search for and collect evidence related to an incident and to identify the suspect.

Furthermore, Government Regulation No. 27 of 1983, Article 2 on the Implementation of the Criminal Procedure Code, stipulates that investigators are appointed by the Minister upon the recommendation of the department overseeing the relevant personnel. Prior to making the appointment, the Minister must first seek the opinion of the Attorney General and the Chief of the Indonesian National Police.

Article 7(2) of the Criminal Procedure Code stipulates that investigators as referred to herein have the authority in accordance with the laws and regulations that serve as their legal basis, and in the performance of their duties, they are under the coordination and supervision of the investigators. The coordination and supervision referred to in the explanation of Government Regulation No. 45 of 2004 on Forest Protection, Article 39(3), states that POLRI investigators, in carrying out coordination with and supervision of Civil Servant Investigators (PPNS), do not supervise PPNS but rather provide guidance. POLRI investigators, whether requested or not, are obligated to provide guidance to PPNS.

Based on the definitions of investigator and investigation as stated above, it is understood that investigation is part of the efforts of law enforcement officials to hold perpetrators of criminal acts accountable for their actions according to the law

before a judge. In order for investigators to carry out their investigative duties as intended by the lawmakers, they must thoroughly understand the rationale behind the formal law (procedural law) and substantive law.

From the above discussion, it can be concluded that conservation is a field of knowledge that continues to evolve, thereby requiring the availability of PPNS who can enhance and develop their knowledge and understanding in the field of conservation in accordance with current conditions.

Prohibitions against certain acts in Law No. 5 of 1990 are not included in the Criminal Code (KUHP), nor are the penalties for such acts. For example, the criminal offense of theft (Articles 362-367 of the KUHP) is limited in the Conservation Law to specific types of plants or animals and certain areas where ecosystem conservation efforts are being made.

Crimes in the field of conservation are transnational in nature, so the position of PPNS under the coordination and supervision of investigators does not mean that PPNS are subordinates of POLRI investigators. Therefore, in future amendments to the law, PPNS should be given greater autonomy in carrying out their duties, without having to report as subordinates to POLRI investigators, but rather coordinating with them throughout the investigative process.

5. Law Number 5 of 1983 on the Exclusive Economic Zone

In conducting activities related to the utilization and conservation of genetic resources in the sea, it is imperative to know and understand Law No. 5 of 1983. This is because this Law also regulates permits for scientific research activities, including those related to research on genetic resources in the exclusive economic zone (EEZ).

All scientific research activities conducted in the EEZ must first obtain approval from and be carried out in accordance with the conditions set by the Government of the Republic of Indonesia. All marine scientific research in the Indonesian EEZ may only be carried out after the research proposal has been approved by the Government of the Republic of Indonesia. If, within four (4) months of receiving the proposal, the Government of the Republic of Indonesia does not state:

1) reject the application, or

2) that the information provided by the applicant is inconsistent with the facts or incomplete, or

3) that the applicant has not fulfilled its obligations regarding its previous research project, then a marine scientific research project may be carried out six (6) months after the research application is received by the Government of the Republic of Indonesia.

6. Law No. 17 of 1985 on the Ratification of *the United Nations Convention on the Law of the Sea* (UNCLOS)

The United Nations Convention on the Law of the Sea (UNCLOS) or the Law of the Sea Convention (KHL) was signed on December 10, 1982, by 159 countries in Montego Bay, Jamaica. As of August 7, 2007, 155 countries had ratified the KHL (http://untreaty.un.org, August 7, 2007). Indonesia ratified the 1982 KHL through Law No. 17 of 1985. For Indonesia, the ratification of the 1982 UNCLOS holds great significance as it recognizes the principle of the archipelagic state within the international community.

The 1982 UNCLOS, consisting of 320 articles and 9 annexes, aims to respect and recognize the sovereignty of each state and maximize the use of the sea for international communication, the safe and efficient utilization of marine resources, the conservation of marine living resources, and the study, preservation, and protection of marine resources.

In relation to genetic resources, the UNCLOS does not specifically regulate genetic resources as part of marine living resources. As stated by Glowka (1999), negotiators of the UNCLOS at the time of the negotiations were not yet aware of the importance of genetic resources, especially those located outside national jurisdiction, namely the *deep* seabed or *the* Area. Prospecting, expropriation, and exploration activities in the Area are limited to non-living resources, namely minerals.

Based on this, the United Nations General Assembly, through Resolution 54/33 dated November 24, 1999, recommended that the UNCLOS establish a legal framework for all activities carried out at sea. Through this Resolution, the UNCLOS applies provisions to all activities at sea, including those related to genetic resources at sea, both within and beyond national jurisdiction.

7. Law No. 5 of 1990 on the Conservation of Biological Resources and Their Ecosystems

Born with a deep awareness to protect natural resources and ecosystems so that they can be utilized sustainably in accordance with the call of the soul of Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia. Therefore, August 10 has been designated as National Nature Conservation Day (HKAN) in accordance with Presidential Decree of the Republic of Indonesia No. 22 of 2009 on National Nature Conservation Day. The establishment of HKAN is one of the concrete expressions of the Government's commitment to ensuring the continuity of efforts to protect natural resources and their ecosystems, and to promoting nature conservation as a way of life and national culture across the nation.

The obstacles and constraints encountered in the management of natural resource and ecosystem conservation areas are not solely caused by regulations that do not accommodate problems in the field. This can occur because regulations have not been followed up with implementing regulations at the operational level. Therefore, the fault does not necessarily lie with the law. Similarly, the implementation of Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems still lacks implementing regulations. There are 8 (eight) Government Regulations (PP) implementing Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems, but to date only 5 (five) PP have been issued, namely:

1) PP No. 13 of 1994 on Hunting of Game Animals.
2) GR No. 18 of 1994, as amended by GR No. 36 of 2010 on the Management of Nature Tourism in Wildlife Reserves, National Parks, Forest Parks, and Nature Tourism Parks.
3) GR No. 68 of 1998 as amended by GR No. 28 of 2011 on the Management of Nature Reserves and Nature Conservation Areas.
4) Government Regulation No. 7 of 1999 concerning the Preservation of Plant and Animal Species.
5) Government Regulation No. 8 of 1999 on the Utilization of Plant and Wildlife Species. Meanwhile, the following Government Regulations are not yet available as of the present time:

1) RPP on the Protection of Life Support Systems.
2) Regulation on Community Participation.
3) Regulation on Biosphere Reserves.

8. Law No. 5 of 1994 on the Ratification of the *United* Nations Convention on Biological Diversity *(United Nations Convention on Biological Diversity*)

The United Nations Convention on Biological Diversity (CBD) or Convention on Biological Diversity (KKH) is an international treaty that is binding on the parties to the agreement and open to countries wishing to become parties since *the Earth* Summit in Rio de Janeiro in 1992. Indonesia has signed this Convention and ratified it through Law No. 5 of 1994. The Convention on Biological Diversity (CBD) has three objectives, namely:

1) conservation of biological diversity,
2) sustainable use of its components,
3) sharing the benefits arising from the utilization of genetic resources in a fair and equitable manner, including through adequate access to genetic resources and appropriate transfer of technology, and taking into account all rights over those resources and technologies, as well as through adequate funding.

Almost all articles of this Convention are closely related to the conservation of biological diversity, but there are several important articles that deserve attention. Article 8 on *in-situ* conservation in paragraph j states that States Parties shall

> "respect, protect and maintain knowledge, innovations and practices of indigenous and local communities that are relevant to the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge. Such innovations and practices and promote the fair sharing of benefits arising from the utilization of such knowledge, innovations and practices."

Article 15, paragraph 4, states that access to genetic resources, when granted, shall be on the basis of mutual agreement (in particular with the owners of the genetic resources). The use of genetic resources shall be subject to the fair and equitable sharing of benefits and to access to and transfer of appropriate technologies that are relevant to the interests of the parties concerned.

Ratifying this convention does not mean that a country loses its sovereignty over its biological diversity resources because this convention still recognizes that countries, in accordance with the Charter of the United Nations and the principles of international law, have the sovereign right to utilize their biological diversity resources in a sustainable manner in accordance with the state of the environment and in accordance with

with their respective development policies and responsibilities, so as not to damage the environment.

The ratification of international agreements between the Government of the Republic of Indonesia and other governments, international organizations, and other subjects of international law is a very important legal act because it binds the state in certain areas, and therefore the ratification of an international agreement must be based on clear and strong foundations, using legislative instruments.

9. Law Number 41 of 1999 concerning Forestry

This law replaces the 1967 Forestry Law, which regulates forest management and recognizes the rights of indigenous communities to participate in managing and collecting forest products. This law also stipulates that customary forests are part of state forests, so genetic resources originating from customary forests must obtain consideration from indigenous communities and the government in the issuance of access permits.

Based on this Law, the position of Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems is clearly stated as follows:

> "With the enactment of Law No. 5 of 1990 on the Conservation of Natural Resources and Ecosystems, all provisions previously regulated in Law No. 5 of 1990 are no longer regulated in this law."

Article 6 paragraph (1) states that forests have three functions, namely conservation, protection, and production. Furthermore, paragraph (2) states that the government classifies forests based on their main functions, namely a. conservation forests; b. protected forests; and c. production forests.

In essence, forests fulfill the conservation function, which is the protection of biodiversity; the protective function, which is water regulation and flood prevention; and the production function, which is the production of forest products. However, due to the physical conditions and potential within forest areas, the government designates forests as conservation forests, protective forests, and production forests based on their primary functions. The definition of conservation forest, as stipulated in Article 1, point 9, is a forest area with specific characteristics that has the primary function of preserving biodiversity.

In order to align with scientific developments and international conventions, the definition of Conservation Area has been expanded to include:

> "conservation area is a terrestrial or aquatic area designated by the Government and managed to achieve the conservation of biodiversity and its ecosystem services."

Meanwhile, according to the IUCN (1980) definition, as discussed above, conservation encompasses three major components, namely preservation, maintenance, and sustainable use. This relates to sustainable management and utilization, so that the concept of conservation is not limited to preservation but also includes management and utilization.

Conservation forests (natural forest reserves and natural forest conservation areas), as mandated in the explanation of Article 7, are part of natural reserves and conservation areas as regulated in Law No. 5 of 1990. Conservation forests, as mandated by Article 7, consist of: a) nature reserve forest areas; b) nature conservation forest areas; and c) hunting reserves.

10. Law No. 17 of 2003 on State Finance

Article 11 of Law No. 17 of 2003 states that State Revenue consists of tax revenue, non-tax revenue, and grants. One of the duties of the Minister/Head of an Agency as a budget user/user of goods of the Ministry/agency under their leadership, as regulated in Article 9(d) of Law No. 17 of 2003, is to collect non-tax state revenue and deposit it into the State Treasury.

In accordance with Article 1(1) of Law No. 20 of 1997 on Non-Tax State Revenue, Non-Tax State Revenue refers to all revenues of the Central Government that do not originate from tax revenues. Therefore, it can be concluded that Non-Tax State Revenue is only collected by the Central Government and no authority is granted to Local Governments to collect Non-Tax State Revenue.

Furthermore, Article 1 paragraph (2) of Law Number 20 of 1997 also defines natural resources as all natural wealth found above, on the surface, and within the earth that is controlled by the State. The category of non-tax state revenues, as stipulated in Article 2 of Law No. 20 of 1997, includes:

1) Revenue derived from the management of government funds,

2) Revenue from the utilization of natural resources,
3) Revenue from the proceeds of the management of State assets that have been separated,
4) Revenue from services provided by the Government,
5) Revenue based on court decisions and arising from the imposition of administrative fines,
6) Revenue in the form of grants that are the right of the Government; and,
7) Other revenues regulated by separate laws.

In the explanation of Article 2(b) of the aforementioned Law, it is explained that the category of revenues derived from the utilization of natural resources includes, among others, royalties in the fisheries sector, royalties in the forestry sector, and royalties in the mining sector.

Further information on types of non-tax state revenue is explained by the Ministry of Forestry in Government Regulation No. 22 of 1997 concerning Types and Payment of Non-Tax State Revenue, as amended by Government Regulation No. 52 of 1998. Annex II A of Government Regulation No. 22 of 1997 classifies the types of non-tax state revenue of the Ministry of Forestry as follows:

1) Revenue from Forest Product Contributions (IHH);
2) Revenue from Forest Utilization Rights Contributions (IHPH);
3) Revenue from Forest Plantation Management Rights Contributions (IHPHTI);
4) Revenue from Forest Business Rights Contributions (IHPH) for Bamboo;
5) Revenue from Forest Management Rights (IHPH) for Rattan Plantations;
6) Revenue from natural tourism;
7) Revenue from entrance fees to tourist forests, national parks, forest parks, and marine forest parks;
8) Revenue from fees for capturing/taking and transporting wild animals and natural plants that are not protected by law, as well as looted animals;
9) Revenue from fines for violations of forest exploitation (DPEH);
10) Revenue from post-audit fines and forest product levy administration;
11) Revenue from the collection of protected plant and wildlife species from the wild or from captive breeding.

Thus, PNBP from the utilization of limited biological natural resources is limited to letters e, f, h, and k, so that not all available potential, such as services

(water energy, wind energy, geothermal energy, carbon storage and sequestration), hunting, raw water, and the utilization of genetic resources, have not yet contributed to State Revenue.

11. Law Number 17 of 2019 concerning Water Resources

Water resources regulated under Law No. 7 of 2004 are an improvement over Law No. 11 of 1974 on Irrigation. Pursuant to Article 6(1), water resources are controlled by the state and utilized for the greatest benefit of the people. Based on this state control, water rights are determined, which include water use rights and water business rights. Article 1(2) states that water refers to all water found on, above, or below the earth's surface, including surface water, groundwater, rainwater, and seawater located on land.

This law also regulates water resource management, management plans, water use rights, and water resource conservation. Article 11, among other things, stipulates that in order to ensure the implementation of water resource management that provides the greatest possible benefits for the interests of the community in all aspects of life, a water resource management pattern shall be established. The water resource management pattern shall be based on the principle of balance between conservation and utilization of water resources.

Article 1, paragraph 12, states that water resource conservation is an effort to maintain the existence and sustainability of the condition, nature, and function of water resources so that they are always available in adequate quantity and quality to meet the needs of living beings, both now and in the future. Article 20, paragraph (1), and

(2) Water resource conservation aims to maintain the continuity of the carrying capacity, storage capacity, and functions of water resources. Water resource conservation is carried out through activities such as protection, preservation of water sources, water conservation, and management of water quality and control of water pollution, in accordance with the water resource management patterns established for each river basin.

Article 25, among other things, states that the conservation of water resources located within nature reserves, nature conservation areas, forest areas, and coastal areas is regulated by laws and regulations. Furthermore, Article 26 states that the utilization of water resources for exploitation purposes in nature reserves and nature conservation areas is excluded by this Law.

Thus, the conservation and utilization of water resources within nature reserves and nature conservation areas are not covered by the provisions of Law No. 7 of 2004, but are regulated in accordance with laws and regulations in the field of biodiversity conservation.

12. Law No. 31 of 2004 on Fisheries

Law No. 31 of 2004 was enacted to replace Law No. 9 of 1985 on Fisheries, which was deemed unable to accommodate the management of all aspects of fish resources and insufficient to anticipate legal developments and technological advancements in the management of fish resources. This law is relevant because some of its provisions relate to the utilization of marine genetic resources, particularly fish genetic resources.

Law No. 31 of 2004 regulates fish conservation measures, which are important for ensuring the sustainability of fish resources. Specifically, Article 13 (1) of Law No. 31 of 2004 stipulates three conservation measures that must be taken in the context of fish resource management. These three measures include ecosystem conservation, fish species conservation, and genetic conservation of fish. Although the Law establishes three conservation measures, it does not provide a comprehensive explanation of how these conservation measures are to be implemented, as it only states that further regulations will be determined by Government Regulations.

Article 14 of this Law also explains the use of germplasm related to fish resources for ecosystem conservation and fish resource improvement. The government will also control the importation of new fish species from abroad and/or between islands to ensure the sustainability of genetic resources related to fish resources. Additionally, Article 14(2) states that every person is obligated to preserve and not damage genetic resources related to fish.

13. Law Number 32 of 2004 on Regional Government

Law No. 32 of 2004 aims to improve the efficiency and effectiveness of regional government administration by paying greater attention to aspects of relations between government structures and between regional governments, regional potential and diversity, opportunities and challenges of global competition by granting

the widest possible authority to regions, accompanied by the granting of rights and obligations to exercise regional autonomy within the unified system of state administration.

Some of the relevant provisions in this Law pertain to the management of natural resources. Article 17 explains the relationship between the Government and local governments in the utilization of natural resources, specifically in terms of:

1) authority, responsibility, utilization, maintenance, impact control, cultivation, and conservation;
2) sharing of benefits from the utilization of natural resources and other resources; and
3) environmental and spatial planning, as well as land rehabilitation.

The explanation further states that the implementation of decentralization requires the division of government affairs between the central government and local governments. This division includes: Matters that are entirely within the authority of the government, namely matters concerning the survival of the nation and state as a whole, as well as *concurrent* government matters, namely matters carried out jointly by the government and local governments based on criteria of externalities, accountability, and efficiency, taking into account the harmony of government affairs management.

The explanation also states that:

> "the government may designate special areas in autonomous regions to carry out specific governmental functions of a special nature and for national interests/on a national scale, such as cultural reserves, national parks, and the development of strategic industries."

To realize a proportional division of *concurrent* authority between the Central Government, Provincial Governments, and Regency/Municipal Governments, this is implemented in Government Regulation No. 38 of 2007 on the Division of Government Affairs between the Central Government, Provincial Governments, and Regency/Municipal Governments. Biodiversity conservation is a special matter, so its establishment and management are carried out by the government, and its administration is conducted jointly between the Government, Provincial Governments, and District/Municipal Governments.

Considering the above, which has also been stipulated in Government Regulation No. 38 of 2007, conservation is a special matter, so its establishment and management are carried out by the government, and its administration is carried out jointly between the government and local governments.

14. Government Regulation No. 41 of 2006 on Licensing for Research and Development Activities by Foreign Universities, Foreign Research and Development Institutions, Foreign Business Entities, and Individuals

Exploration and exploitation activities related to biological natural resources are closely linked to research and development activities. Such activities are not only carried out by national researchers and institutions but also by foreign researchers and institutions. Article 17(4) of Law No. 18 of 2002 stipulates that foreign higher education institutions, foreign business entities, and foreign individuals not domiciled in Indonesia who wish to conduct foreign research and development activities in Indonesia shall be regulated by a Government Regulation.

As an implementation of Article 17(4) of Law No. 18 of 2002, Government Regulation No. 41 of 2006 on Permits for Conducting Research and Development Activities by Foreign Universities, Foreign Research and Development Institutions, Foreign Business Entities, and Foreign Nationals was subsequently issued. In essence, the provisions set forth in Government Regulation No. 41 of 2006 are a summary of Presidential Decree No. 100 of 1993 and its implementing regulations, which were subsequently revised. As a result, all foreign research activities conducted in Indonesia will be governed by this Government Regulation.

Pursuant to Article 2, the authority to grant research permits has been transferred/returned to the Minister of Research and Technology. In considering the issuance of permits, the Minister of Research and Technology is assisted by the National Research Council, Regional Research Councils, and a Coordination Team. The scope of entities regulated is broader than that covered by Presidential Decree No. 100 of 1993, including foreign universities, foreign research and development institutions, foreign business entities, and foreign individuals. Applications for permits must be submitted along with the following requirements:

1) A research activity plan, as explained in Article 7, must include information regarding:
   a. Foreign Higher Education Institutions, Foreign Research and Development Institutions, Foreign Business Entities, and the relevant Foreign Nationals;
   b. The name of the foreign researcher;
   c. Purpose and objectives;

d. The location and area where the research will be conducted;
e. Benefits of the research activities for the Indonesian people.

2) Recommendation Letter and Guaranteeing Institution
3) Letter of Reference from a Partner Organization

The provisions regarding pre-research assessment are more accommodating to current research developments than those contained in previous legislation, particularly the economic interests involved in research activities. This is as outlined in Article 4 paragraph (2) in coordination with the Minister of Research and Technology, to assess various aspects related to the research activities to be carried out; including aspects of usefulness, foreign relations, environmental sustainability, politics, defense, security, social, cultural, religious, and economic aspects.

15. Law Number 27 of 2007 on the Management of Coastal Areas and Small Islands

This law consists of 19 chapters and 80 articles, including provisions on the management of coastal areas and small islands, planning, utilization, supervision and control, research and development, education, training, and outreach, authority, disaster mitigation, rights, obligations, and the role of the community, community empowerment, dispute resolution, representative litigation, investigations, administrative sanctions, and criminal provisions.

This Law applies to Coastal Areas and Small Islands, which include the area where the influence of water and land meet, extending inland to the administrative boundaries of districts and seaward to a distance of 12 (twelve) nautical miles measured from the coastline toward the open sea and/or toward the archipelagic waters. In the general provisions of this Law, the term "area" refers to a part of the Coastal Areas and Small Islands that has specific functions established based on physical, biological, social, and economic criteria to preserve its existence, and the "general utilization area" is a part of the Coastal Areas designated for various sectors of activity.

In addition, the Law also mentions zoning plans, which are plans that determine the direction of resource use for each planning unit, accompanied by the establishment of spatial structures and patterns in the planning area that include activities that are permitted and prohibited, as well as activities that can only be carried out after obtaining a permit.

Coastal and Small Islands Conservation is an effort to protect, preserve, and utilize Coastal Areas and Small Islands and their ecosystems to ensure the existence, availability, and sustainability of Coastal and Small Islands resources while maintaining and improving their quality and diversity. Conservation Areas in Coastal Areas and Small Islands are coastal areas and small islands with specific characteristics that are protected to achieve sustainable management of Coastal Areas and Small Islands.

Article 23(2) regarding the utilization of small islands and their surrounding waters is prioritized for one or more of the following purposes:

1) Conservation;
2) Education and training;
3) Research and development;
4) Marine aquaculture;
5) Tourism;
6) Fisheries and marine industries and sustainable fisheries;
7) Organic agriculture; and/or
8) Livestock farming.

16. Law No. 26 of 2007 on Spatial Planning

Based on LawLaw No. 26 of 2007 on Spatial Planning, which amends Law No. 24 of 1992, it is stated that space is a container encompassing land space, sea space, and air space, including space within the earth as a single territorial unit, where humans and other living beings live, carry out activities, and sustain their existence.

Article 2 states that within the framework of the Unitary State of the Republic of Indonesia, spatial planning is carried out based on the principles of integration; harmony, coherence, and balance; sustainability; efficiency and effectiveness; openness; cooperation and partnership; protection of public interests; legal certainty and justice; and accountability.

Spatial planning is a systematic process of spatial planning, spatial utilization, and spatial utilization control. Spatial planning determines the spatial structure and spatial patterns, including the formulation and establishment of spatial plans, while spatial utilization seeks to realize the spatial structure and spatial patterns in accordance with

spatial plans through the preparation and implementation of programs and their financing, thereby creating orderly spatial control of land use.

al planning is classified based on systems, main functions of areas, administrative regions, area activities, and strategic values of areas. Classification based on the main functions of areas consists of protected areas and cultivated areas. Spatial planning based on the main functions of areas is a component of spatial planning, whether it is carried out based on administrative regions, area activities, or strategic values of areas. Protected areas include:

1) Areas that provide protection for the areas below them, including protected forests, peatlands, and water catchment areas;
2) local protection areas, including coastal zones, river zones, areas around lakes/reservoirs, and areas around springs;
3) nature reserves and cultural heritage sites, including nature reserves, marine nature reserves and other waters, mangrove forest coastlines, national parks, forest parks, nature parks, nature reserves, wildlife sanctuaries, and cultural and scientific heritage sites;
4) natural disaster-prone areas, including volcanic eruption-prone areas, earthquake-prone areas, landslide-prone areas, tidal wave-prone areas, and flood-prone areas; and
5) other protected areas, such as hunting reserves, biosphere reserves, germplasm protection areas, wildlife refuges, and coral reefs.

Areas designated for cultivation include production forest areas, community forest areas, agricultural areas ( ), fisheries areas, mining areas, residential areas, industrial areas, tourism areas, places of worship, educational areas, and defense and security areas.

Thus, forest areas are an integral part of the spatial framework in accordance with the provisions of Law No. 26 of 2007 on Spatial Planning. However, if there is a national spatial pattern that involves forestry areas, then the regulations are not only based on spatial planning provisions but must also comply with forestry-related laws and regulations. This is further elaborated in Government Regulation No. 15 of 2010 on the Implementation of Spatial Planning.

17. Law Number 10 of 2009 on Tourism

Law No. 10 of 2009 consists of 17 chapters and 70 articles. The matters regulated in this Law include, among others, the rights and obligations of the community, tourists, business operators, the Government and Regional Governments, comprehensive and sustainable tourism development, cross-sectoral coordination, regulation of strategic areas, empowerment of micro, small, and medium enterprises within and around tourism destinations, tourism promotion agencies, tourism associations, business standardization, and tourism worker competencies, as well as the empowerment of tourism workers through human resource training.

Several provisions in this Law that contain synergies with the objectives of Conservation of Natural Resources and Ecosystems include the General Provisions, Article 4, Article 5, Article 7, Article 14, and Article 19. The General Provisions, points 5, 6, and 7, state that:

1) Tourist attractions are anything that possesses uniqueness, beauty, and value in the form of natural, cultural, and man-made diversity that become the target or purpose of tourist visits.
2) A tourism destination, hereinafter referred to as a Tourism Destination, is a geographical area within one or more administrative regions that contains tourist attractions, public facilities, tourism facilities, accessibility, and communities that are interconnected and complementary to the realization of tourism.
3) Tourism business is an enterprise that provides goods and/or services to meet the needs of tourists and to organize tourism.

Article 4 states that tourism aims, among other things, to:

a. Introducing, utilizing, preserving, and improving the quality of tourist attractions and sites;
b. To preserve nature, the environment, and natural resources;
c. Advancing culture;
d. Enhancing the nation's image.

Article 7 states that tourism development includes the tourism industry, tourism destinations, tourism marketing, and tourism institutions. It further explains that tourism destination development includes community empowerment, development of tourist attractions, infrastructure development, provision of public facilities, and integrated and sustainable development of tourism facilities.

Article 14 states that tourism businesses include tourist attractions, tourism areas, tourism transportation services, travel services, food and beverage services, accommodation provision, entertainment and recreation services, incentive travel, conference and exhibition services, tourism information services, tourism consulting services, tour guide services, water tourism, and so on.

18. Law Number 32 of 2009 on Environmental Management and Protection

Law Number 32 of 2009 consists of 17 chapters and 127 articles. This law regulates the importance of the environment, whereby Indonesia's environment must be protected and managed properly based on the principles of state responsibility, preservation and sustainability, harmony and balance, integration, benefits, prudence, equity, ecoregions, biodiversitybiodiversity, pollution paying, participatory, local wisdom, good governance, and regional autonomy. Environmental protection and management require the development of an integrated system in the form of a national policy on environmental protection and management that must be implemented consistently and thoroughly from the central to the regional levels. Article 63 paragraph (1) point (i) states that the Government has the duty and authority to establish and implement policies regarding living and non-living natural resources, biodiversity, genetic resources, and the safety of genetically engineered products. This Law also states that the use of natural resources must be harmonious, consistent, and balanced with the functions of the environment, and preventive measures to control environmental impacts must be implemented by utilizing maximize monitoring and licensing instruments.

This Law regulates the processes and activities whose outcomes will impact the conservation of natural resource conservation areas and/or the protection of cultural heritage sites, as stipulated in Article 23. Article 43(2) of this Law also addresses environmental funding instruments, including trust funds or grants for conservation.

Environmental maintenance related to conservation is stipulated in Article 57(1), (2), and (5), which state that environmental maintenance is carried out through efforts to conserve natural resources, reserve natural resources, and/or preserve atmospheric functions, where the conservation of natural resources referred to includes

activities to protect natural resources, preserve natural resources, and utilize natural resources.

Environmental protection and management are carried out based on the "principle of biodiversity", which means that environmental protection and management must take into account integrated efforts to maintain the existence, diversity, and sustainability of biological natural resources consisting of plant and animal natural resources which, together with non-living elements around them, form ecosystems.

To implement natural resource conservation, the Government, provincial governments, or district/municipal governments and individuals may establish:

1. biodiversity parks outside forest areas;
2. Green Open Spaces (GOS) covering at least 30% of the area of an island or archipelago; and/or
3. Planting and maintaining trees outside forest areas, especially rare plants.

Regarding the authority of the Government over biodiversity, it is stipulated that the protection and management of the environment are the responsibility of the Government, which is authorized to establish and implement policies regarding biological and non-biological natural resources, biodiversity, genetic resources, and the safety of genetically modified products; (Article 63(1)(i)).

In the preparation of the Strategic Environmental Impact Assessment (SEIA), provisions are made regarding environmental impacts and/or risks, one of which must include the level of resilience and potential for biodiversity.

19. Law No. 11 of 2013 on the Ratification of *the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity* (Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization)

Genetic resources have long been utilized by the Indonesian people and other nations around the world. Genetic resources are unevenly distributed throughout the world, as is the mastery of technology in the utilization of genetic resources. This situation has led to interdependence among countries, both in terms of genetic resources and technology. Therefore, international regulations are needed regarding access to and utilization of genetic resources, including traditional knowledge related to genetic resources.

Traditional knowledge related to genetic resources is an integral part of genetic resources themselves and is continuously passed down by the ancestors of customary law communities and local communities. Because of the services provided by these communities in conserving and utilizing genetic resources, which are reflected in knowledge, innovations, and practices, the international community considers it necessary to develop regulations on the management of genetic resources and traditional knowledge related to genetic resources that can accommodate the dynamics and aspirations of indigenous peoples and local communities.

The Nagoya Protocol is an international agreement in the field of the environment that regulates access to and the sharing of benefits from the utilization of genetic resources and traditional knowledge associated with genetic resources between countries. The Nagoya Protocol is one of the Protocols under the Convention on Biological Diversity, which has been ratified by the Government of Indonesia through Law No. 5 of 1994.

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity. In principle, the objectives of the Nagoya Protocol are to regulate:

1) access to genetic resources and traditional knowledge associated with genetic resources;
2) the fair and equitable sharing of benefits arising from the utilization of genetic resources and traditional knowledge associated with genetic resources; and
3) preventing genetic resource theft (*biopiracy*).

The Nagoya Protocol consists of 36 (thirty-six) articles and 1 (one) annex. The main provisions of the Nagoya Protocol include:

1) the fair and equitable sharing of benefits arising from the utilization of genetic resources and traditional knowledge provided on the basis of *Mutually Agreed* Terms (MAT). Benefit-sharing may be monetary or non-monetary;
2) access to genetic resources and traditional knowledge associated with genetic resources through *prior informed* consent (PIC*)* involving the owners or providers of genetic resources;
3) simplification of procedures for access for non-commercial research and special consideration in situations of health, environmental, and food emergencies;

4) multilateral benefit-sharing mechanisms (global multilateral benefit sharing) for genetic resources and traditional knowledge of transboundary nature;
5) Institutional arrangements are regulated by the National Competent Authority (NCA) as the institution authorized to grant written access permits. The National Focal Point functions as a liaison with the CBD Secretariat and may also function as the NCA;
6) A clearing house that serves as a mechanism for information exchange and a database on genetic resources;
7) compliance with national laws and regulations related to genetic resources;
8) establishment of checkpoints for monitoring purposes;
9) compliance with and model clauses for joint agreement contracts;
10) codes of conduct, guidelines, best practices, and/or standards; and
11) capacity building, technology transfer, and cooperation.

By ratifying the Nagoya Protocol, Indonesia has adopted various provisions of the protocol as part of its national legal system to be elaborated in a regulatory and institutional framework.

20. Law No. 21 of 2014 on Geothermal Energy

In line with the national policy direction for energy security by developing the utilization of new and renewable energy in forest areas, particularly in conservation forests, the government, together with the House of Representatives of the Republic of Indonesia, is committed to the enactment of Law No. 21 of 2014 on Geothermal Energy, which opens opportunities to utilize geothermal energy potential, not only in production forests and protected forests, but also in natural conservation areas such as national parks, forest reserves, and nature tourism parks, while still considering conservation principles.

Under Article 24(2) of Law No. 21 of 2014, it is stated that in cases where geothermal energy development activities for indirect utilization are located within forest areas, the holder of a geothermal energy permit must:

Obtain:

1) a lease permit to use Production Forest Areas or Protected Forest Areas; or
2) permission to utilize the Conservation Forest Area,

from the minister responsible for forestry affairs; and

Carry out geothermal energy activities in accordance with the primary objectives of sustainable forest management as stipulated in applicable laws and regulations.

Meanwhile, Article 24(3) of Law No. 21 of 2014 states that the permit to utilize the area referred to in paragraph (2)(a)(2) shall be obtained through an environmental service utilization permit.

CHAPTER IV
PHILOSOPHICAL, SOCIOLOGICAL, AND LEGAL FOUNDATIONS

A. Philosophical Basis

1. That Indonesia's biological natural resources, including genetic diversity, species, and ecosystems, are gifts from God Almighty that have an important position and role in human life, and therefore must be managed and utilized sustainably for the welfare of the Indonesian people in particular and humanity in general, both for current and future generations.
2. That biological natural resources are strategic natural resources that play an important role in the national economy, and therefore are controlled by the state for the greatest prosperity of the people while maintaining their existence and diversity.
3. The development of conservation of biological natural resources and their ecosystems is an integral part of national development based on Pancasila and the 1945 Constitution of the Republic of Indonesia.
4. That the elements of biological natural resources are fundamentally interdependent and mutually influential, so that the damage or extinction of one element will disrupt the other elements.
5. In order to ensure that the benefits of biological resources can be sustained, conservation measures are needed so that biological resources are always preserved and their balance is maintained.

B. Sociological Basis

The goal of development is to create a just and prosperous society, which is materially and spiritually equitable based on Pancasila and the 1945 Constitution, within the framework of the Unitary State of the Republic of Indonesia. Article 33 of the 1945 Constitution of the Republic of Indonesia stipulates that the earth, water, and natural resources contained therein are controlled by the state and used for the greatest benefit of the people.

Articles 27 to 34 of the 1945 Constitution of the Republic of Indonesia guarantee that every citizen of the Republic of Indonesia has equal rights and obligations, including the right to utilize natural resources, as well as the obligation to utilize them in a sustainable manner ( ) and to preserve them ( ) for future generations ( ) in a manner that is beneficial to the environment ( ) and to the community ( ) ( ) ( ) ( ) ( ) (dan) (dan).

preserve them. These rights and obligations are carried out in a balanced manner for the sustainability and welfare of the nation.

The control of natural resources by the state, whose management is carried out by the government, must always be aimed at the greatest prosperity of the people in the present and future. The conservation of natural resources must be carried out while fully guaranteeing the economic, social, and cultural rights of the people, thereby supporting efforts to achieve a prosperous life for the people both materially and spiritually.

Indonesia possesses a very high level of genetic resources, therefore the government must ensure that the utilization of these genetic resources provides benefits for the national economy and the welfare of the people. Additionally, some traditional communities in Indonesia possess knowledge related to genetic resources, which is why the government needs to protect this traditional knowledge and ensure a fair and equitable distribution of benefits from its utilization.

C. Legal Basis

Biodiversity and its ecosystems are the most important component of natural resources, comprising animal life, plant life, or natural phenomena, either individually or collectively, that serve as essential elements of the environment and cannot be replaced. Given the importance of natural resources, both animal and plant life, as a life-sustaining system, it is necessary to protect them to ensure their sustainability.

In accordance with Article 8 of Law Number 5 of 1990 on the Conservation of Biological Resources and Their Ecosystems, the Government has established the following:

1. Certain areas as areas for the protection of life-supporting systems.
2. Basic guidelines for the development of life support system protection areas.
3. Regulations on the utilization of life support system protection areas. The above provisions are to be further regulated in a Regulation.

The government on the Protection of Life Support Systems and implemented by designating a specific area as a protected area for its regulation

The government establishes basic guidelines for the development and utilization of the area so that its protective and conservation functions are guaranteed.

The protected area for life support systems includes, among others:

1. protected forests,
2. river basins,
3. riverbanks,
4. coastal areas,
5. certain parts of Indonesia's exclusive economic zone,
6. tidal areas,
7. gorges and heavily populated areas.

Meanwhile, the utilization of certain areas or regions remains with the rightful owners, but such utilization must comply with the regulations established by the Government.

To further ensure legal certainty and fairness for the public in preparing the Draft Government Regulation (RPP) on the Protection of the Life Support System, an academic paper based on research or legal studies that can be scientifically justified regarding the Draft Government Regulation as the implementation of Article 8 of Law No. 5 of 1990 must be prepared.

CHAPTER V
SCOPE, DIRECTION OF REGULATION, AND SCOPE OF MATERIAL CONTENT

The objective of the Government Regulation on the Protection of Life Support Systems is to regulate certain areas as life support systems so that they are sustainable and can be optimally utilized to support life, thereby ensuring the conservation of biological resources and ecosystems that are more effective and efficient.

The regulation on the Life Support System is aimed at organizing specific areas as life support system areas to ensure their sustainability and optimal utilization to support life. As a result, after the issuance of this Government Regulation, there will be designations of life support system areas whose administrative boundaries may encompass one regency, multiple regencies within a province, or even multiple provinces. Meanwhile, the scope of this RPP is expected to regulate matters beyond the Life Support System areas, including the roles of the Government, Local Governments, Community Empowerment, and Management Procedures, as well as their utilization. The scope of the regulatory provisions on the Protection of the Life Support System can be seen in the diagram in Figure 1.

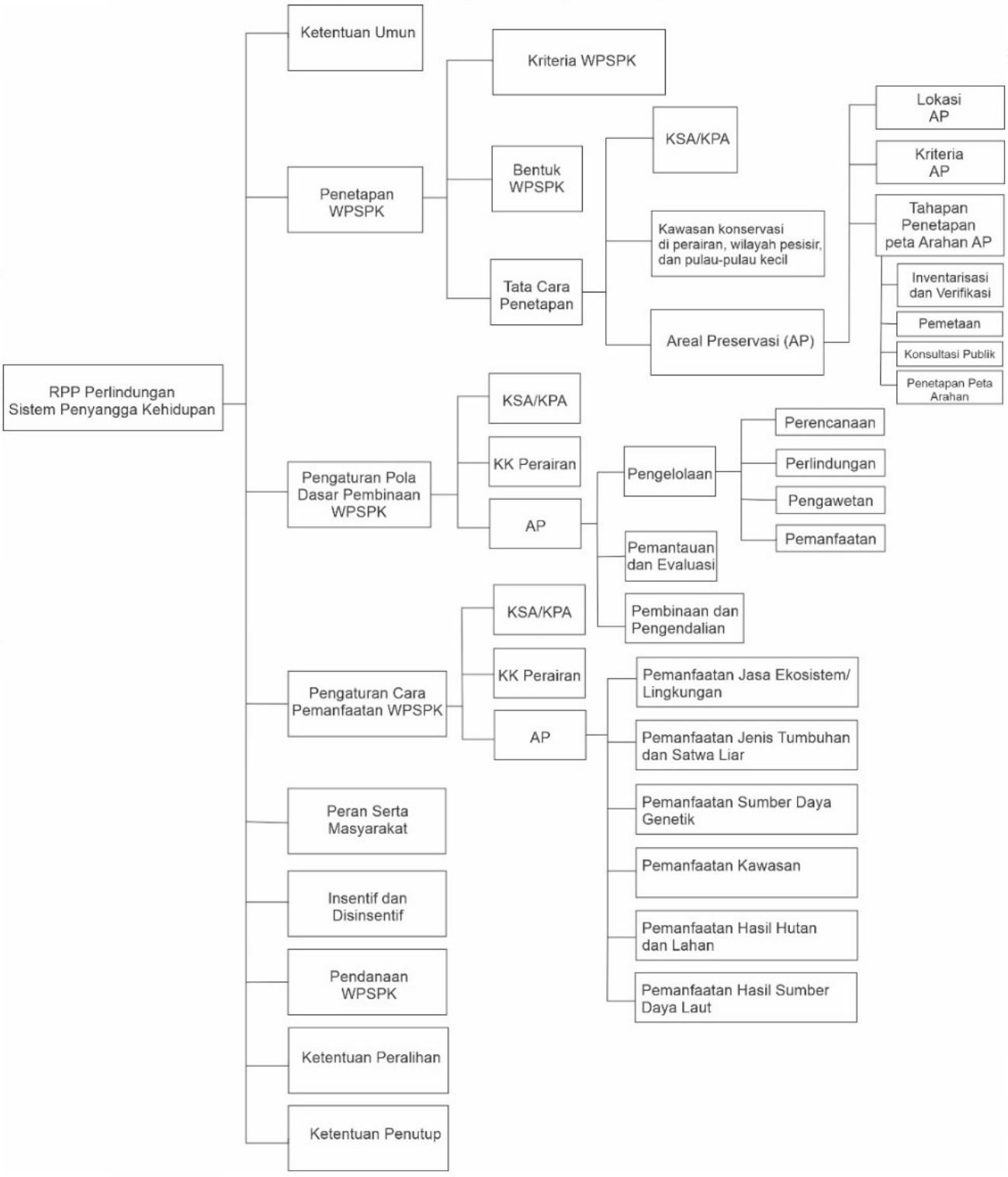

Figure 1. Regulatory Framework for the Protection of Life Support Systems

The scope of the content of the Draft Government Regulation on the Protection of Life Support Systems includes:

A. General Provisions

1. Definitions

   In the general provisions of the content to be formulated, the following definitions/terminology must be included:

   1) Sea Lane is a body of water used, among other things, for shipping lanes, submarine pipelines and cables, and the migration of marine biota.
   2) A preservation area is an area outside of nature reserves, nature conservation areas, and conservation areas in waters, coastal areas, and small islands whose ecological conditions are maintained to support the life support functions or the survival of biological resources and their ecosystems.
   3) River boundaries are imaginary lines on the left and right sides of a riverbed that are designated as river protection boundaries. River buffer zones are areas along the left and right sides of a river, measured from the riverbank to the river boundary, including artificial rivers that are important for maintaining the conservation of river functions, whether they have been released or not.
   4) Geographical indications are a type of Intellectual Property Rights (IPR) aimed at providing legal protection for the originality of a product that is generally labeled with its place of origin, indicating that the quality of the product can only be created in a particular area that has unique or special characteristics from its natural resources, human resources, or a combination of both.
   5) A marine conservation area is a protected marine area managed through a zoning system to achieve sustainable management of fish resources and their environment.
   6) Coastal and Small Island Conservation Areas are coastal areas and small islands with specific characteristics that are protected to achieve sustainable management of coastal areas and small islands.

7) General Utilization Areas are parts of the waters designated for various non-conservation activities and sea lanes equivalent to aquaculture areas in spatial planning regulations.
8) Nature Reserve Area, hereinafter referred to as KSA, is an area with specific characteristics, both on land and in waters, which has the primary function of preserving plant and animal diversity and their ecosystems, which also functions as a life support system.
9) Natural Conservation Areas, hereinafter referred to as KPA, are areas with specific characteristics, both on land and in water, which have the function of protecting life support systems, conserving plant and animal diversity, and sustainably utilizing biological resources and their ecosystems.
10) The area around a water source is the area surrounding a water source that has important benefits for maintaining the function of the water source. Protection of the area around a water source is carried out to protect the water source from cultivation activities that can damage water quality and the physical condition of the surrounding area.
11) Certain National Strategic Areas, hereinafter referred to as KSNT, are areas related to national sovereignty, environmental control, and/or world heritage sites, whose development is prioritized for national interests.
12) Water Absorption Areas are areas with a high capacity to absorb rainwater, serving as a recharge area for groundwater (aquifers) that are useful as water sources.
13) Peatland is an area composed of organic material formed naturally from partially decomposed plant remains that accumulate in swamps. Peatlands are inseparable from swamp lands, as peatlands are always located within swamp lands, whether tidal or non-tidal (flooded swamps). Peatlands located in coastal and transitional areas are generally found in tidal swamps, while inland peatlands are located in flooded swamps.
14) Swamp land is land that is saturated with water throughout the year or for a significant portion of the year, or waterlogged. The role of water in peatland is crucial. Water fluctuations or the rise and fall of water levels

The surface of the land (hydrology) is influenced by the topography, which is generally flat to slightly flat, and the distance from the land to the sea. These water fluctuations affect the dynamics of the peat soil within the area.

15) Protection of Life Support Systems is a systematic effort carried out in specific areas aimed at maintaining ecological processes that support life in order to improve community welfare and the quality of human life.
16) Protection of mountainous areas with steep slopes and prone to erosion by establishing protected forests.
17) Coastal area protection through controlled management of mangrove forests, coastal forests, and coral reef areas.
18) Protecting river basins, hillsides, riverbanks, lakes, and ravines (revines) through controlled management of vegetation.
19) Development of river basins in accordance with comprehensive development plans.
20) Protection of large forest areas, such as national parks, wildlife sanctuaries, and nature reserves.
21) Protection of places with unique value, attractive beauty, or distinctive cultural characteristics (cultural reserves).
22) The utilization of the Life Support System Protection Area is a wise effort to utilize the WPSPK to improve community welfare and the quality of human life.
23) The Basic Framework for the Development of Protected Areas for the Life Support System is the fundamental form of development aimed at maintaining ecological processes that support the continuity of life.
24) Small islands are islands with an area of 2,000 km2 (two thousand square kilometers) or less, along with their ecosystem.
25) A lake boundary is an area of land surrounding and at a certain distance from the edge of a lake that functions as a lake protection area, while a lake catchment area is an area of land surrounding a lake and bounded by the lake boundary and the ridge of the water divide.

26) The Life Support System is the natural process of various living and non-living elements in a specific area that ensures the continuity of life for living organisms.
27) Natural springs are groundwater flows that emerge naturally onto the ground surface, caused by the interruption of groundwater flow due to local topography. The area around the spring is an area that has a direct relationship with the existence of the spring.
28) The Life Support System Protection Area is a specific area that contains ecological processes that support the continuity of life, which is useful for improving community welfare and/or the quality of human life.
29) Coastal Areas are transitional zones between terrestrial and marine ecosystems that are influenced by changes on land and in the sea.

2. Objectives

The objective of protecting the life support system is to maintain ecological processes that support the continuity of life to improve community welfare and the quality of human life.

3. Scope

The scope of this Government Regulation includes:

a. the designation of the Protected Area for the Life Support System
b. the basic guidelines for the development of the Life Support System Protection Area
c. the utilization of Life Support System Protection Areas

B. Establishment of the Life Support System Protection Area

Life Support System Protection Areas (WPSPK) can be established in certain areas that meet specific criteria, which will form the basis for their designation. The designation of life support system protection areas is important to obtain commitment and ensure efforts to develop their utilization; prevent the decline or loss of the functions of the Life Support System; and ensure the sustainability of the functions of the Life Support System to support the life and welfare of the community. Several matters that need to be regulated in the designation of life support system areas include general criteria for life support system areas, forms of life support system areas, and procedures for designating life support system areas.

1. General Criteria for Life Support System Protection Areas

   Certain areas to be designated as life support system protection areas must meet at least one or more of the following criteria:

   a. high biodiversity at the ecosystem, species, and/or genetic levels;
   b. have unique, distinctive, and/or rare ecosystem types;
   c. serves as a habitat for protected animals, rare animals, endemic animals, endangered animals, animal corridors, and/or migratory animals;
   d. prone to human-wildlife conflict;
   e. has significant geological and volcanic value;
   f. has significant value as a water regulator (hydro-orological);
   g. has significant value as a source of oxygen production and/or carbon storage;
   h. has significant value as a source of genetic resources;
   i. vulnerable to natural disasters and/or the impacts of climate change.
   j. plays a role in climate change mitigation and adaptation
   k. has potential for the development of ecotourism;
   l. has potential for bioprospecting development;
   m. serving as a place of residence for communities with customary laws and/or local wisdom; and/or
   n. vulnerable to natural disasters and/or the impacts of climate change.

2. Form of the Protected Area for the Life Support System

   The Life Support System Protection Area, as a life support system, is a specific area within which ecological processes support the continuity of life that is useful for improving community welfare and/or the quality of human life. The life support system protection area includes:

   a. Natural Reserve Areas (KSA) and Nature Conservation Areas (KPA)
   b. Conservation Areas in water bodies, coastal areas, and small islands
   c. Preservation Areas

3. Procedures for Designating Protected Areas for Life Support Systems

   a. Procedures for Designating KSA/KPA

      The procedures for establishing and managing KSA and KPA are carried out in accordance with the provisions of laws and regulations in the field of forestry.

b. Procedures for the Establishment of Conservation Areas in Waters, Coastal Areas, and Small Islands

The procedures for the designation and management of conservation areas in waters, coastal areas, and small islands are carried out in accordance with the provisions of laws and regulations in the field of marine affairs and fisheries.

c. Procedures for the Establishment of Preservation Area Maps

1) Location of Preservation Areas

A preservation area is an area located outside of nature reserves, nature conservation areas, and conservation areas in waters, coastal areas, and small islands. The location of a preservation area can include various types of areas, including:

- Protected forests, production forests, and other areas of use that can function as natural ecosystem buffers.
- Protected areas and/or cultivation areas, providing space for conservation while supporting sustainable economic activities.
- State forests and/or customary forests, which play a crucial role in environmental conservation and recognize community rights.
- General use areas, specific national strategic areas, and/or marine corridors, which consider national interests and public accessibility while maintaining ecological functions and resource sustainability.

With this scope, the Preservation Area is expected to protect biodiversity across various strategic areas while supporting community interests and national development.

Forms of preservation areas as part of the life support system protection zone may include:

a) buffer zones for Nature Reserves (KSA), Nature Conservation Areas (KPA), and conservation areas in waters, coastal areas, and small islands;
b) ecological corridors or connecting ecosystems;
c) areas with high conservation value;
d) community-managed conservation areas; and/or
e) local wisdom protection areas.

2) Criteria for Preservation Areas

The main criteria for preservation areas are that they are not *Protected Areas* classified under the IUCN categories, or in Indonesia are not KSA/KPA and conservation areas in waters, coastal areas, and small islands. Areas that meet any of the following criteria may be considered and proposed for designation as Preservation Areas, as part of efforts to protect and conserve natural resources and biodiversity. These criteria include:

- Having clearly defined boundaries, ensuring that the area can be identified and managed with certainty.
- The area is regulated and managed in accordance with applicable legal provisions, ensuring sustainability and protection in its management.
- Effectively and sustainably contributing in the long term to the conservation of in situ biodiversity, supporting efforts to conserve natural biodiversity in its natural habitat.
- The area plays a role in supporting ecosystem functions and services, such as maintaining water quality, carbon storage, protecting soil from erosion, and reducing the impact of natural disasters such as floods and landslides.
- Possessing cultural, spiritual, and other local values that are important for the well-being of communities and the environment. These areas hold significant cultural or spiritual meaning for local communities. They may be considered sacred, have historical sites, or serve as centers for ritual activities that contribute to local cultural identity.
- Possesses local socio-economic value that provides sustainable economic and social benefits to communities, such as customary forests that provide food, medicine, or raw materials for the local economy without damaging the environment.
- It is sustainable agricultural land that supports food security and the conservation of natural resources.
- Possesses local wisdom criteria, including noble values respected within the customary law system and local communities, and recognized by surrounding communities with diverse customary and cultural backgrounds.

- The area has distinctive geographical indications that reflect the uniqueness and potential of the region in supporting local products and preserving cultural heritage. Geographical indications are one type of Intellectual Property Rights (IPR) aimed at providing legal protection for the originality of a product that is typically labeled with its place of origin, indicating that the product's quality can only be produced in a specific region with unique or distinctive natural resources, human resources, or a combination of both.

Considering these criteria, a Preservation Area can be selected and managed to maximize ecological, social, and economic benefits for the environment and surrounding communities while supporting long-term sustainability and conservation. These criteria ensure that the area is not only preserved in terms of its ecosystem but also plays a role in supporting the livelihoods of local communities and valuing traditional values and cultural diversity.

3) The establishment of Conservation Areas is carried out through the development of a Conservation Area Guidance Map using the latest technology in a participatory manner through the following stages:

a) inventory and verification

The inventory and verification of the Preservation Area aims to collect comprehensive data and information on various important aspects of the area. This process includes mapping and analysis of:

- Status and Function of the Area

  Ensuring the conservation status and function of the Preservation Area, whether the area is in accordance with its designation as a protected area or has special value for environmental conservation.

- Biodiversity Potential.

  Identifying various species of flora and fauna in the area, including rare, endemic, or endangered species that require protection.

- Ecosystem Services

Assessing the ecosystem services provided by the Conservation Area, such as clean water supply, carbon sequestration, flood control, and other services that benefit the environment and surrounding communities.

- Biophysical Conditions

  Conducting measurements of biophysical aspects, including soil type, topography, climate, and environmental quality, which aid in understanding the area's carrying capacity and vulnerability.

- Social, Economic, and Cultural Conditions

  Examining the role of the Conservation Area in supporting the social, economic, and cultural well-being of the surrounding community, including the area's connection to traditional activities, customs, and locally recognized values.

The results of this inventory and verification form the basis for developing a comprehensive Conservation Area guidance map. This map will guide the management, protection, and optimal utilization of the Conservation Area in accordance with its potential, and provide clear guidelines for relevant parties in long-term conservation planning and decision-making.

b) Mapping

Mapping is carried out to determine the indicative boundaries of the Conservation Area based on the results of the inventory and verification. The mapping shows the form of the Conservation Area:

- buffer zones for Nature Reserves (KSA), Nature Conservation Areas (KPA), and conservation areas in waters, coastal areas, and small islands;
- ecological corridors or connecting ecosystems;
- areas with high conservation value;
- community-managed conservation areas; and/or
- local wisdom protection area.

c) Public consultation

Public consultation is a participatory process involving indigenous and/or local communities, universities, non-governmental organizations, and

other relevant parties in order to agree on a Preservation Area map in decision-making, especially related to policies, programs, or projects that have an impact on the environment, society, or economy of the community. The main objectives are to ensure transparency, strengthen public participation, and obtain input and feedback from various stakeholders.

d) Establishment of the Preservation Area Guidance Map

The establishment of a Preservation Area Guidance Map is an important step in the planning and management of a Preservation Area. This map is prepared based on the results of inventory, verification, and consultation with various stakeholders. Its main objective is to provide clear guidance on the location, function, and boundaries of the Conservation Area in order to maintain ecosystem sustainability and protect biodiversity. The establishment of a Conservation Area Guidance Map is a strategic step that supports environmental conservation by providing comprehensive and structured guidelines for effective management of conservation areas.

C. Basic Pattern of the Protection Area for the Life Support System

The Basic Pattern for the Development of WPSPK is a guideline for parties involved in the management of WPSPK carried out in Nature Reserves and Nature Conservation Areas, conservation areas in waters, coastal areas, small islands, and Preservation Areas.

1) Basic Pattern Regulation for the Development of Nature Reserve Areas (KSA) and Nature Conservation Areas (KPA)

   The procedures for establishing basic patterns for KSA and KPA development shall be carried out in accordance with the provisions of laws and regulations in the field of forestry.

2) Basic Pattern of Development for Conservation Areas in Waters, Coastal Areas, and Small Islands

   The procedures for establishing the basic framework for the development of conservation areas in waters, coastal areas, and small islands are carried out in accordance with the provisions of laws and regulations in the field of marine affairs and fisheries.

3) Basic Pattern Regulation for the Development of Preservation Areas

The basic framework for the development of WPSPK consists of management, monitoring, and evaluation, as well as the development and management of Preservation Areas. The basic framework for the development of preservation areas may be implemented through:

a) Management of Conservation Areas

Preservation Areas are managed in accordance with their status and functions by the Government, Regional Governments, indigenous communities, customary law communities, land rights holders, and business license holders. This management aims to ensure the sustainability and long-term benefits of Preservation Areas for the environment and society. The management of Preservation Areas includes the following main activities:

i. Planning

Planning is aimed at providing guidelines and direction to ensure the achievement of the objectives of Conservation Area management. Conservation area planning is carried out in a transparent, accountable, participatory, integrated, landscape-based manner, taking into account its status and function in order to support the successful development of productivity, added value, patterns, and forms of sustainable utilization of biodiversity. Preservation area planning includes the following activities:

- data and information collection
- spatial planning; and
- development of area preservation management plans

ii. Protection

Protection is aimed at protecting the area from threats of damage, both from human activities that are not in accordance with conservation functions and from natural threats. Protection includes prevention, mitigation, control of damage, and effective maintenance of the Preservation Area to preserve the area and prevent excessive exploitation.

iii. Conservation

Conservation is carried out to preserve and maintain the diversity of plant and animal species and their ecosystems both within and outside their habitats so that they do not become extinct, remain balanced, and develop dynamically. Conservation activities in the Preservation Area are carried out through the management of wild plants and animals and ecosystem restoration.

iv. Utilization

The utilization of the Conservation Area is carried out by the Government, Local Government, Indigenous Communities, Customary Law Communities, Land Rights Holders, and Business Permit Holders. Utilization is conducted to utilize biological resources and ecosystems without altering their functions while considering the sustainability of their potential and carrying capacity. Utilization of the Conservation Area includes the following activities:

a. utilization of ecosystem/environmental services
b. utilization of plant and wildlife species
c. utilization of genetic resources
d. area utilization
e. utilization of forest and land products
f. Utilization of marine resources

b) Monitoring and Evaluation

Monitoring in the management of preservation areas is carried out to monitor the conformity between planning and implementation of preservation area management. Evaluation of preservation area management is carried out to assess the effectiveness of the implementation of preservation area management.

c) Guidance and Control of Preservation Areas

Supervision is carried out by the Minister in accordance with his authority. The Minister may delegate this authority to the Director General, and the Director General may assign the Head of the Technical Implementation Unit to carry out supervision of the management of preservation areas. Supervision is carried out to improve the implementation of the management of preservation areas.

D. Regulations on the Utilization of Life Support System Protection Areas Regulations on the Utilization of Life Support System Protection Areas aim to ensure that areas functioning as life support systems are managed and utilized wisely to support ecosystem balance and meet community needs while maintaining sustainability. These areas often include regions that play a crucial role in providing ecosystem services, such as maintaining water quality, absorbing carbon, and protecting against natural disasters.

The principles of WPSPK utilization are:

1. The utilization of WPSPK remains with the rights holders or managing agencies and/or may be granted to other parties in accordance with applicable laws and regulations.
2. The utilization of WPSPK may be carried out provided it does not cause damage to the functions of the Life Support System.
3. The utilization of WPSPK in forest areas and non-forest areas is directed toward achieving optimal benefits from both biological and non-biological components without causing disturbance to WPSPK.
4. The utilization of WPSPK in forest areas is carried out in accordance with applicable laws and regulations.
5. The utilization of WPSPK outside forest areas is determined by the relevant agency, taking into account the basic patterns of development of the Life Support System area.

The regulation of the utilization of the Life Support System Protection Area aims to ensure that areas functioning as life support are managed and utilized wisely to support ecosystem balance and meet community needs while maintaining sustainability. These areas include zones that play a crucial role in providing ecosystem services, such as maintaining water quality, absorbing carbon, and protecting against natural disasters. The regulation of the utilization of the Life Support System Protection Area includes:

- Regulation of the Utilization of Nature Reserves (KSA) and Nature Conservation Areas (KPA)

  The regulations for the management of KSA and KPA are implemented in accordance with the provisions of forestry-related laws and regulations.

- Regulation on the Utilization of Conservation Areas in Waters, Coastal Areas, and Small Islands

  The procedures for regulating the utilization of conservation areas in waters, coastal areas, and small islands shall be carried out in accordance with the provisions of laws and regulations in the field of marine affairs and fisheries.

- Regulation of the Utilization of Preservation Areas

  The utilization of preservation areas is carried out sustainably based on the following principles:

  1. Aiming to obtain optimal, fair, and sustainable benefits from ecosystem services for the welfare of the community.

2. Not reducing, altering, or eliminating their primary functions.
3. Not causing negative impacts on the bio-physical and socio-economic aspects. The utilization of preservation areas is carried out by the Government, Regional Governments,

Indigenous Communities, Customary Law Communities, Land Rights Holders, and Business Permit Holders. Utilization is carried out to utilize biological resources and ecosystems without altering their functions while considering the sustainability of their potential and carrying capacity. Utilization of preservation areas includes activities such as:

a. utilization of ecosystem/environmental services

   Utilization of ecosystem/environmental services is an activity to utilize and develop the potential of ecosystem/environmental services without damaging the environment and without reducing its main functions. Utilization activities that can be developed in preservation areas include: ecotourism, water resource utilization, carbon sequestration and/or storage, and renewable energy such as hydroelectric power, wind power, solar power, and geothermal power and carbon.

b. Utilization of plant and wildlife species

   The utilization of plant and wildlife species must consider the sustainability of potential, carrying capacity, and biodiversity of plant and wildlife species. The utilization of ecosystem/environmental services must be accompanied by recommendations from government scientific authorities in accordance with their respective authorities.

c. Utilization of genetic resources

   Access to genetic resources includes access to genetic material and access to traditional knowledge associated with genetic resources. The utilization of genetic resources is carried out through the granting of access permits and the fair and equitable sharing of benefits. The sharing of benefits from the utilization of genetic resources is based on mutual agreement between the providers and users of genetic resources.

d. land use

   Land use is the activity of utilizing available space to achieve optimal environmental, social, and economic benefits without compromising its primary functions.

The principle of land use in conservation areas is that land use activities may continue in accordance with their designated purposes while still considering aspects that support the conservation of the conservation area. Land use is carried out by considering the existence of potential, spatial planning, and the capacity of the area in accordance with its carrying capacity and strategic national and/or regional interests. The location of land use to be used as a land use area in a preservation area is in accordance with what has been agreed upon by the preservation area manager. The form of land use in a preservation area is directed toward activities that do not alter the natural landscape. Activities for the utilization of areas within the preservation area may include forestry, agriculture, plantations, silvofishery, agroforestry, silvopasture, nature parks, and others based on the results of land suitability studies.

e. Utilization of forest and land products

Utilization of forest and land products is an activity to utilize and manage forest and land products without damaging the environment and without reducing their primary functions. Utilization of forest products in preservation areas can include harvesting forest and land products located within preservation areas, such as honey, rubber, rattan, products derived from the utilization of medicinal plants, aquaculture, and others.

f. Utilization of marine resources

Marine resource utilization is the activity of utilizing and managing marine resources without damaging the environment and without reducing their primary functions. Marine resource utilization in conservation areas can include fishing, marine tourism, exploration and exploitation of mineral resources, development of renewable energy (such as wave and wind energy), and scientific research and conservation of marine ecosystems.

E. Community Participation

The community plays an active role in protecting the life support system area. Forms of community participation in protecting the life support system area include:

1) Involvement in planning activities for the protection of WPSPK
2) Involvement in the implementation of WPSPK protection activities

3) Involvement in monitoring and evaluation activities for WPSPK

F. Incentives and Disincentives

Incentives are provided to communities that support the maintenance of the functions of the Life Support System. The provision of incentives serves as a reward for communities that have carried out activities with a positive impact on the maintenance of the functions of the Life Support System. The procedures and mechanisms for providing incentives are carried out in accordance with applicable regulations. Instruments that function as disincentives to reduce activities with a negative impact on natural resources and environmental functions are implemented in accordance with applicable regulations.

G. Funding

Funding for WPSPK management activities comes from the state budget and Conservation Funds. The state budget is sourced from the State Revenue and Expenditure Budget and the Regional Revenue and Expenditure Budget. Further provisions regarding the collection of Conservation Funds are based on applicable laws and regulations.

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