

Protecting Biodiversity and the Environment Through Intellectual Property Rights

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Abstract. There is a significant correlation between biodiversity conservation and intellectual property rights. The relevant provisions of the Biodiversity Treaty are closely related to intellectual property rights. The intellectual property theory surrounding the protection and utilization of biological resources is constantly developing, and China's relevant legal system should also be improved. This article describes the relationship between biodiversity and the protection of natural environment and plant diversity in the methods of intellectual property rights, and then discusses the experimental results of biodiversity protection on the Yangtze River channel and Tongjiang Lake. Finally, it discusses the results of biodiversity and environmental protection in intellectual property rights.

Keywords: Intellectual property; Bio-diversity; Natural environment; Plant Diversity Protection.

1. Introduction

With the development of society and the improvement of human economy, most of the environments that destroy biodiversity have been created. However, the Chinese government has issued intellectual property laws and regulations on international conventions and intellectual property laws related to the protection and utilization of biological resources. Countries have sovereignty over their own crop germplasm resources, but without intellectual property rights, the germplasm resource owner cannot obtain any benefit compensation from the user country [1-2]. The TRIPS agreement stipulates that labeling or cloning a gene in germplasm resources is a creative invention that can be patented or granted new plant species rights [3-4]. Article 3(2) of the EU Directive on the Protection of Biotechnology also stipulates that organisms separated from the natural environment or manufactured through technological methods can still become objects of invention even if they originally exist in nature, thus providing clear provisions for the patentability of organisms that originally exist in nature. Having germplasm resources is different from possessing intellectual property rights of that germplasm resource. Only the latter can generate huge economic and social benefits, and achieve the goal of hunting for germplasm resources from other countries through exclusive possession[5].

Hannah L explained: The impact of environmental changes may not be the same in all regions, and the impact on each individual organism is also different. If some habitats of a rare species with a wide range but few numbers change, some of them can still survive, at least in other places. And if the habitat of a species with a large number but a small distribution range changes, there is no doubt that they will suffer from extinction [6]. Whether it is to promote biological evolution or maintain and protect life in the biosphere, biodiversity has great practical significance. Biodiversity has irreplaceable practical value for ecological genetics, social economy, science, education, culture, health and even aesthetics. For the practical purpose of protecting biodiversity, Sala E can ensure the sustainable use of biological resources and meet people's growing demand for food. As an important part of global biodiversity, marine biodiversity maintains the ecological balance of 71% of the earth's oceans, and its practical significance is immeasurable [7]. Olalekan R M's research on natural complexes is an important aspect of land consolidation and planning. The reasons for this are as follows: firstly, the composition of natural complexes includes all ecological environmental factors such as light, heat, water, air, soil, and biological organisms. Whether it is the adjustment and arrangement of agricultural structure or the rational layout of industry, it cannot be separated from the study of the combination characteristics of the entire natural complex and its production potential;

Secondly, natural complexes have the characteristic of systematic response, where a change in one factor can cause changes in the properties of other factors. Especially with the increasing speed of human activities in transforming and utilizing nature, there is a growing sense of necessity to study the causal relationship between various factors[8].

The progress and application of science and technology play a crucial role in the protection and sustainable use of biodiversity. For example, the development and application of ecological technology and artificial breeding technology can improve and enhance the living environment and reproductive capacity of giant pandas. Genetic engineering can make it possible to transfer genes across genera and species, thereby increasing the economic value of corresponding biological resources and cultivating new biological varieties more quickly.

2. Methods of Intellectual Property Rights

2.1. Biodiversity

Biodiversity refers to the diversity of life in all forms, levels, and associations of life on Earth. Simply put, biodiversity refers to the overall diversity and variability of organisms and their constituent systems. Biodiversity includes three levels: genetic diversity, species diversity and ecosystem diversity [9-10]. There are three main measures for intellectual property protection of biodiversity: first, the establishment of natural reserves. The establishment of natural parks and nature reserves has become the main means for the world to protect natural ecology and wildlife from extinction and enable them to reproduce. Natural reserves such as Shennongjia and Wolong in China have played an important role in the protection and reproduction of rare and endangered species such as golden monkeys and pandas. The second is to establish a breeding ground for rare animals. Due to the destruction of habitat and breeding conditions, some natural populations of wild animals are bound to become extinct in the future. To this end, it is necessary to establish breeding grounds for certain rare animals, protect and reproduce them, or designate areas for natural grazing. For example, Thailand's cultivation of fresh fish. The third is to establish a global gene bank. To protect cultivated crops and their extinct wild relatives, a global gene bank network should be established. Nowadays, most gene banks store seeds of major crops such as grains, potatoes, and beans. In May 2001, the United Nations General Assembly passed a resolution declaring May 22nd as "International Biodiversity Day" to increase understanding and awareness of the issue of protecting biodiversity.

2.2. Natural Environment

The natural environment is a type of environment, which can be divided into natural environment and socio-cultural environment. The natural environment is the foundation of the social and cultural environment, and the social and cultural environment is the development of the natural environment. The natural environment is the sum of various natural factors surrounding organisms, such as the atmosphere, water, other species, soil, rocks, minerals, solar radiation, etc. It is the material foundation on which organisms rely for survival. These factors are usually divided into five natural circles, namely, the atmosphere, hydrosphere, biosphere, pedosphere, and lithosphere. The main basic characteristic is that the natural environmental elements and their structural forms are different in different regions on the surface, so the natural environment is also different in each region. Low latitude areas receive more solar energy each year than high latitude areas, forming a tropical environment, while high latitude areas form a cold zone environment. A humid forest environment is formed in areas with abundant rainfall; Areas with sparse rainfall form arid grasslands or desert environments. In high-temperature and rainy areas, the soil forms acidity through leaching throughout the year; In semi-arid grassland areas, the soil is often neutral or alkaline [11-12]. Different soil characteristics can also affect vegetation and crops. On the vast plain, it exhibits obvious latitude zonality; In mountainous areas with significant undulations, vertical landscape zones are formed. The characteristic map of the natural environment as shown in Figure 1:

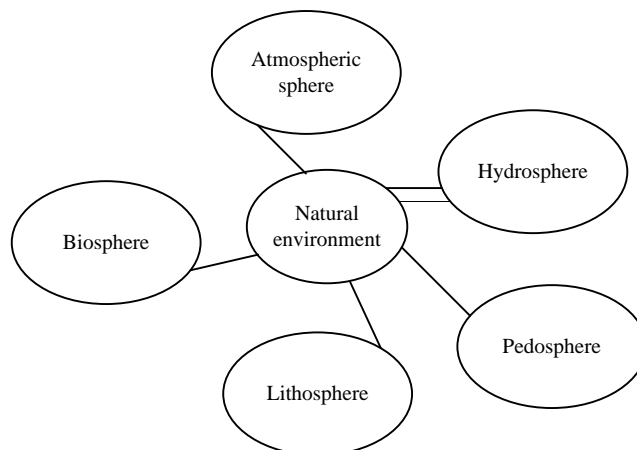


Figure 1. Flow Chart of Natural Environment

2.3. Plant Diversity Protection

Plants, as a crucial part of global biodiversity, play a crucial role in maintaining the basic functions of ecosystems. Due to the survival crisis faced by plant diversity itself, in modern forestry ecological construction, plant diversity protection has become a prerequisite for the stable and healthy development of forest ecosystems. Based on the protection experience and effectiveness analysis of forest farms over the years, strengthening the collection of basic survey data, establishing a plant diversity information sharing platform, adopting a combination of conventional methods and exploring new technologies to protect the environmental characteristics of forest areas, and developing scientific protection measures based on the dynamic tracking and analysis of plant diversity in forest areas and the assessment of endangered species are key steps in doing a good job in plant diversity protection. The protection of plant diversity is a long-term and arduous historical task that requires the participation of the whole society. Only by changing concepts, refining responsibilities, and strengthening implementation can we promote the orderly development of plant diversity protection. The government and relevant functional departments should strengthen their main responsibilities, formulate strict regulatory measures, and improve the protection awareness of the whole society. Only in this way can we ultimately do a good job in plant diversity protection and better serve the construction of ecological civilization, To achieve a virtuous cycle of mutual promotion between plant diversity and the ecological environment, the following formula is used to describe plant diversity [13-15].

3. Biodiversity Conservation Experiment

3.1. Introduction

Biodiversity refers to the sum of the varieties, species and ecosystem diversity of biological genetic genes in different environments of the earth, specifically divided into gene diversity, species diversity and ecosystem diversity. Biodiversity is the result of billions of years of evolution and evolution of life on Earth. It is a core component of the Earth's life support system and provides living resources and environment for humans.

3.2. Analysis

Taking China as an example, China is one of the countries with the richest biodiversity in the world, accounting for approximately 10% of the world's species. As a developing country with rapid economic rise, how to maintain a balance between biodiversity and economic development has become an urgent problem to be solved. In terms of biodiversity conservation, the construction of natural reserves is the most effective measure. So far, China has established many nature reserves for protecting ecosystem types and rare animals and plants, and has included 646 national rare and

endangered species as key protected objects. However, in terms of intellectual property, environmental and resource laws, relevant laws and regulations should also be improved to enhance international cooperation. Although China has some mandatory protection legislation targeting specific species, such as the Environmental Protection Law, the Wildlife Protection Law, the Wildlife Protection Law, the Nature Reserve Regulations, etc., a comprehensive legal system for biodiversity protection has not yet been formed, lacking practicality and comprehensiveness. At the international level, biodiversity conservation, as a global cause, has been emphasized by the Convention on Biological Diversity and Agenda 21. As a contracting side, China should strengthen international cooperation in technology and projects.

3.3. Results

Finally, it tells the story that China is a rich and colorful environment, where different species play different roles, and all things coexist harmoniously and reproduce. But on this beautiful spring day, when the "national treasure" finless porpoise is the most active and vigorous season, a tragedy shocked China occurred. From March 2019, 12 finless porpoises died in Dongting Lake. As a national second level protected animal listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the finless porpoise is known as a living fossil of the Yangtze River ecosystem, and its charming smile and rare quantity make it known as the "giant panda in the water". However, in recent years, the environment on which the finless porpoise depends for survival has been deteriorating. As the water quality of Dongting Lake has been polluted, the life span and breeding ability of the finless porpoise have also been seriously threatened; From 2020 to 2022, overfishing in the Yangtze River and Tongjiang Lake accounted for 68-79%, illegal fishing accounted for 33-45%, and excessive sand mining accounted for 28-39%, which greatly damaged the habitat environment of the finless porpoise, resulting in tragedy and sounding the alarm for national biodiversity protection. The current situation of fishing in the Yangtze River and Tongjiang Lake is shown in Table 1:

Table 1. Biological fishing data of the Yangtze River and Tongjiang Lake

Year	Overfishing (%)	Illegal fishing (%)	Excessivesandmining (%)
2020	68	33	28
2021	75	40	36
2022	79	45	39

As shown in Table 1, from 2020 to 2022, overfishing in the Yangtze River and Tongjiang Lake increased by 11% from 68%, illegal fishing increased by 12% from 33%, and excessive sand mining increased by 11% from 28%. These data indicate that fishing has been increasing every year in the past three years, and relevant legal laws and intellectual property rights are needed to protect organisms from extinction.

4. Intellectual Property Protection Biodiversity and Environmental Results and Discussions

The protection of intellectual property rights for biodiversity originated from the Convention on Biological Diversity adopted at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. This convention has confirmed among the world government that biodiversity is the fundamental value of all mankind and all life on the earth. Many countries around the world have incorporated intellectual property rights into the important agenda of sustainable development by enacting animal laws and regulations for biodiversity protection in their respective ways. For example, the International Journal of Biodiversity was founded in 1993, and China formulated the China Agenda 21 in 1994 The white paper established a legal group on intellectual property rights, and the Sustainable Development Research Association recognized the protection of

biodiversity as an important component of China's sustainable development strategy and countermeasures. It also founded the journal Biodiversity: Many foundations and environmental organizations (NGOs) internationally. They also support and promote research on biodiversity in different ways. Biodiversity conservation, as a fundamental concept of natural ecological stability and sustainable development of human society, has become one of the important core concepts of cross century human civilization and has attracted widespread attention from the world.

4.1. Analysis

Firstly, the concept of biodiversity was proposed as a positive result of human understanding of the biodiversity crisis, but its definition did not take into account human factors or the context of human society. Why is the concept of biodiversity attracting worldwide attention today? Is there biodiversity before the emergence of humans? In fact, biodiversity can be defined as one of the essential attributes of life on Earth that has evolved over billions of years, and is now the ecological form on which all life depends for survival. In this sense, biodiversity existed long before humans arrived on Earth. It is a component of natural diversity. However, the same scientific fact is that the rapid development of the world economy over 200 years since the Industrial Revolution has posed a serious threat to biodiversity to humanity. In terms of the accelerated extinction of wild species alone, there are 7.7 species on Earth that are extinct every year, with no less than 3 species per hour. From this, it can be seen that the contemporary significance of the concept of biodiversity lies in the fact that it cannot be separated from the legal protection of human intellectual property rights to protect the extinction of organisms and the environmental ecology.

4.2. Biodiversity Protection

Secondly, the current concept of biodiversity and the meaning of biodiversity conservation still retain the methodology of the dichotomy between humans and nature. Therefore, the concept of biodiversity only serves as an important inherent attribute of biological organisms or ecosystems, while ignoring the biological attributes of humans. Biodiversity protection is simply the protection of the genes and ecosystems of natural wilderness species, while obscuring or disregarding human cultural attributes.

4.3. Strategy

I think that human understanding of biodiversity should not only stand on the level of cultural subject, but ignore the level of biological subject, that is, humanism should not be separated from naturalism, otherwise it will lead to cognitive bias. But on the other hand, it is particularly interesting that currently humans should protect biodiversity and environmental laws and regulations through intellectual property rights to prevent species extinction, destruction of wildlife habitats, and abnormal climate changes that occur globally. Natural disasters and the increase in human malignant diseases, such as biodiversity landslides, directly damage not (but indirectly) human cultural existence, such as machinery and equipment, high-rise buildings, and other creations, but rather the ecological state and living conditions of both human and non human organisms. The global ecological crisis is a crisis of biodiversity for all living organisms on Earth, including humans. Therefore, the overall perspective of earth ecology and the theory of biocentrism, including human, can help to supplement the shortcomings of anthropocentrism.

5. Conclusion

Biodiversity is the material foundation for human survival and development, referring to all organisms on Earth, their genes, and the complex formed by their interactions with the environment. The intellectual property protection of biodiversity has been one of the hot research topics in the field of international environmental law and intellectual property in recent years. The international document that first links biodiversity protection with intellectual property rights is the Convention on

Biological Diversity, which establishes the basic principles of biodiversity protection and grants genetic resource providers the right to informed consent. Biodiversity can be defined as one of the essential attributes of life on Earth that has evolved over billions of years, and is now the ecological form on which all life depends for survival.

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