



APP China Biodiversity Report

October 2023

Preserving the Beauty of Biodiversity
in a Sustainable Way





Little by little, grains of soil pile up to make a mountain and drops of water converge to form a river. Protecting biodiversity and building a beautiful home on Earth require our persistent efforts. Let's join hands and open a new chapter of building a community with a shared future for all lives on Earth, and together create a beautiful picture of harmony between humanity and nature.

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Increasing Attention to Biodiversity Issues

Biodiversity Loss is Accelerating

With the continuous intensification of human activities and the rapid development of the economy and society, the loss of biodiversity is accelerating and global biodiversity is facing unprecedented challenges. Multiple international institutions have confirmed the loss of biodiversity on Earth with their research. For example, the *Global Assessment Report on Biodiversity and Ecosystem Services* released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reveals that the natural conditions in most regions of the world have been altered due to the impact of human development, leading to a rapid decline in the majority of ecosystem and biodiversity indicators. The *Living Planet Report 2022* by the World Wildlife Fund (WWF) indicates that the global population of wild animals has declined by 69% from 1970 to 2018. The *International Union for Conservation of Nature (IUCN) Red List of Threatened Species* compiled by IUCN states that there are currently over 42,100 species facing the threat of extinction.

Connotation of Biodiversity

Biodiversity is the sum of the ecological complex formed by organisms and their environment, as well as the variety of ecological processes associated with it, including animals, plants, microorganisms, and the genes they possess, as well as the complex ecosystems formed by their interactions with their living environment. Biodiversity mainly includes three layers, namely genetic diversity (gene diversity), species diversity, and ecosystem diversity. Biodiversity is related to human well-being, is an important foundation for human survival and development, and is closely related to the sustainable development of the economy, society, and the environment.

Some Facts...

75% of the ice-free land surface on Earth has been altered by humans in order to cultivate farmland to support food production, and **90%** of the wetland area on Earth has disappeared.

Approximately **100,000 square kilometers** of forests disappear every year, which is equivalent to the area of **one football field** disappearing every **two seconds**.

Wildlife populations have plummeted by **69%**, and this trend shows no sign of slowing down.

Approximately **25%** of the species in the plant and animal groups assessed by IPBES are threatened, which means that approximately **one million** species are on the brink of extinction.

The rate of extinction of species is **occurring at least tens to hundreds** of times faster than the average rate of the past 10 million years, which is still accelerating.

Global Efforts to Strengthen Biodiversity Conservation

Biodiversity issues have gradually received attention since the 1980s. On June 5, 1992, the largest United Nations Conference on Environment and Development, attended by heads of state from various countries, was held in Rio de Janeiro, Brazil. Over 150 countries signed the Convention on Biological Diversity (CBD), reaching a consensus for the first time that "the conservation of biodiversity is a common concern of mankind and an essential part of the development process of mankind". CBD, as the first global agreement on the conservation and sustainable utilization of biodiversity, has been officially incorporated into international policies, which is of great historical significance for protecting the human living environment and enhancing the rational use of biological resources. In 1996, the concept of involving private sector in biodiversity conservation was first proposed at the third meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP3), and in 2000, enterprises were officially incorporated into the CBD Global Strategy at CBD COP5. In 2014, the CBD Secretariat launched the "Global Partnership for Business and Biodiversity" (GPBB) initiative, aiming to encourage greater business engagement in biodiversity-related issues and in combating illegal trade of wildlife and plants.

In December 2021, the first phase of CBD COP15 was successfully held in Kunming, China, with China leading the substantive and political affairs of the conference as the president. In 2022, CBD COP15 adopted the "Kunming-Montreal Global Biodiversity Framework", which established 4 long-term goals and 23 targets, providing a direction and roadmap for global biodiversity governance in the future. It is a milestone in the history of global biodiversity governance and an important achievement in the construction of global ecological civilization, with China as the presidency shouldering the responsibility and working together with all parties.

Since the signing of the Convention on Biological Diversity in 1992, China has continuously increased its efforts in biodiversity conservation. It has successively promulgated a number of laws and policies related to biodiversity conservation, such as the *Law on the Protection of Wildlife* and the *Forest Law*. In 2010, China released the *China National Biodiversity Conservation Strategy and Action Plan (2011-2030)*, naming biodiversity conservation as a national strategy. It proposed the overall goals and strategic

targets for biodiversity conservation, and planned a series of priority areas and actions, such as "carrying out identification, evaluation, and monitoring of biodiversity", "strengthening in-situ biodiversity conservation", and "improving capacities to address climate change". One of the connotations of Chinese modernization stated in the report of the 20th National Congress of the Communist Party of China, is the modernization featuring "harmony between humanity and nature". It proposes actions such as "protecting nature and preserving the environment like protecting our eyes", "enhancing the diversity, stability, and sustainability of ecosystems", and "carrying out major projects for preserving and restoring key ecosystems at a faster pace in priority areas, including key national ecosystem service zones, ecological conservation redlines, and nature reserves", and "carrying out major biodiversity protection projects". These directions provide important guidance for China's future efforts in biodiversity conservation.

Businesses are an Indispensable Force in Biodiversity Conservation

Companies are the main actors in the development and utilization of biodiversity, and are an indispensable pillar in the promotion of biodiversity conservation. Companies face a series of biodiversity-related risks with increasing concerns from stakeholders regarding the impact of their operations on biodiversity. Biodiversity-related laws and regulations will become stricter in the future, and companies that fail to comply with them will face higher regulatory risks. Most mainstream ESG ratings at home and abroad are increasingly considering companies' efforts in biodiversity conservation, and companies that do not prioritize biodiversity issues may lose investor support. Furthermore, environmental organizations, media, consumers, and the general public are also increasingly concerned about environmental issues, including biodiversity, and companies that lack biodiversity impact management actions will face significant reputation risks.

On the other hand, biodiversity loss also has an impact on the sound operation of businesses. Ecosystem services provided by biodiversity and stable ecosystems can provide businesses with raw materials, technology and business opportunities. The deterioration of the ecosystem will directly affect the business activities of enterprises, bringing risks such as increased costs and disruption of operations.

In fact, there are close interconnections between many environmental topics. For example, by strengthening biodiversity conservation, the number and area of wildlife habitats will increase, which also plays a positive role in promoting the realization of "net zero" emissions of greenhouse gas. Therefore, to avoid relevant risks and ensure continued competitiveness in the future, it is necessary for companies to attach importance to biodiversity, take positive measures to manage the impact of their operations on biodiversity, and protect biodiversity.



Biodiversity and APP China

Biodiversity Conservation is Closely Related to Our Operations

APP China has been adhering to the "Integration of Plantation-Pulp-Paper" concept, forming a green and circular development model of papermaking supporting forestry, forestry promoting papermaking, and the combination of forestry and papermaking. Adhering to the concept of "planting six trees for every tree used", we have been vigorously planting plantations in Guangdong, Hainan, Guangxi, Yunnan and other places since 1995. By the end of 2022, the total area of APP China's plantations exceeded 286,000 hectares. Biodiversity conservation has long been one of our focus areas along with forest management.

Forests are the most biologically diverse ecosystems on land, and are effective in conserving the reproduction, genes, and genetic information of animals and plants. Biodiversity is also an important foundation for the functioning of forest ecosystems. The higher the biodiversity, the more stable the forest ecosystems. As the government vigorously gives priorities to environmental protection, the ecological environment in China continues to improve, and an increasing number of wild animals and plants started appearing in our forests, even around our pulp and paper mills. Furthermore, local governments are increasingly attaching importance to biodiversity conservation. For example, there were government-initiated conservation awareness-raising campaigns in the Naban River Reserve in Xishuangbanna for the protection of Indian bison, in Lancang County for Asian elephants, and in Wenshan Prefecture for local species and rare and endangered species, all located in Yunnan; and for wild plants in Hainan, Guangdong, Guangxi, Jiangxi, and Jiangsu. These changes in the external environment have further promoted the importance of ecological environment and biodiversity issue in our sustainability strategies.

Rescuing the Trapped Milu (*Elaphurus davidianus*)

Milu (*Elaphurus davidianus*), commonly known in China as the "four-not-alikes", is a national first-class protected wild animal that had disappeared in China in the last century. In 1985, China reintroduced Milu and implemented plans for artificial breeding, free-range breeding and wild release of Milu in Nanhaizi in Beijing and Dafeng in Jiangsu. At present, the population of Milu has fully covered its original habitat in China.

One of our mills, Jiangsu Base of Bohui Paper, is located in Dafeng, which is one of the hometowns of Milu. In May 2023, a wild Milu entangled in wires was found in the reed marshes south of the mill. The company immediately initiated the emergency plan and organized personnel to rush to the area where the animal was trapped. Based on the trampled plants on the scene, it was estimated that the Milu had been trapped there for several days and must be rescued as soon as possible to save its life.

Where the Milu was trapped was surrounded by swamps, covered with dense reeds up to two meters high. It was difficult to locate it with a regular camera. The security team of the company decisively used a drone with thermal imaging function. After more than 10 minutes of searching, they located the specific location of the animal. They worked together with the local police and staff from the local wildlife conservation area to inject the animal with anesthetic. After it fell asleep, they untangled the entangled wires and successfully rescued the trapped Milu.



Our Biodiversity Management Strategy

Adhering to the commitment of "stopping all natural forest operations", APP released the *Forest Protection Policy* in 2013, strictly prohibiting the entry of timber from natural forests into the supply chain, and refraining from commercial cooperation with contractors who do not comply with the commitment. APP has also initiated the assessment of high conservation value (HCV) and high carbon stock value to identify natural forests and other important areas that require greater protection. APP listed "over half a million hectares of natural forests conserved" as one of its 2030 Sustainability Goals.

APP China actively responded to APP's policies and Sustainability Goals, and updated our own 2030 Sustainability Strategic Framework in 2021 to include to "contribute to APP's goal of 'over half a million hectares of natural forests conserved'" as one of our goals. Our mission is to "protect forest resources and improve the ecological environment". We regard "insisting on integrating sustainable development of forest resources and biodiversity conservation, HCV areas protection, and ecological protection into social and economic development" as one of the key principles of forest management, and have included "protecting biodiversity and soil and water resources, applying full-process control of business activities, and maintaining regional ecological stability" in the *APP China Forestry Vision, Mission and Policy*.

We carry out the certification work of CFCC/PEFC-FM forest certification and ISO14001 Environmental Management System certification every year, to ensure the continuous improvement of forest management and a green and sustainable source of the industrial chain. By the end of 2022, 85.65% of APP China's plantations are CFCC/PEFC-certified. The large-scale planting and scientific management of plantations have effectively increased the area of forest land, which has positive significance for contributing to the forest coverage and improving the ecological environment.

We have also formulated relevant policies and regulations, such as the *Measures for the Administration of Biodiversity Conservation and Monitoring*, and the *Wildlife (RTE Species¹ Included) Protection Regulations*, to specify the investigation and monitoring measures for rare, threatened, and endangered species in our plantations.

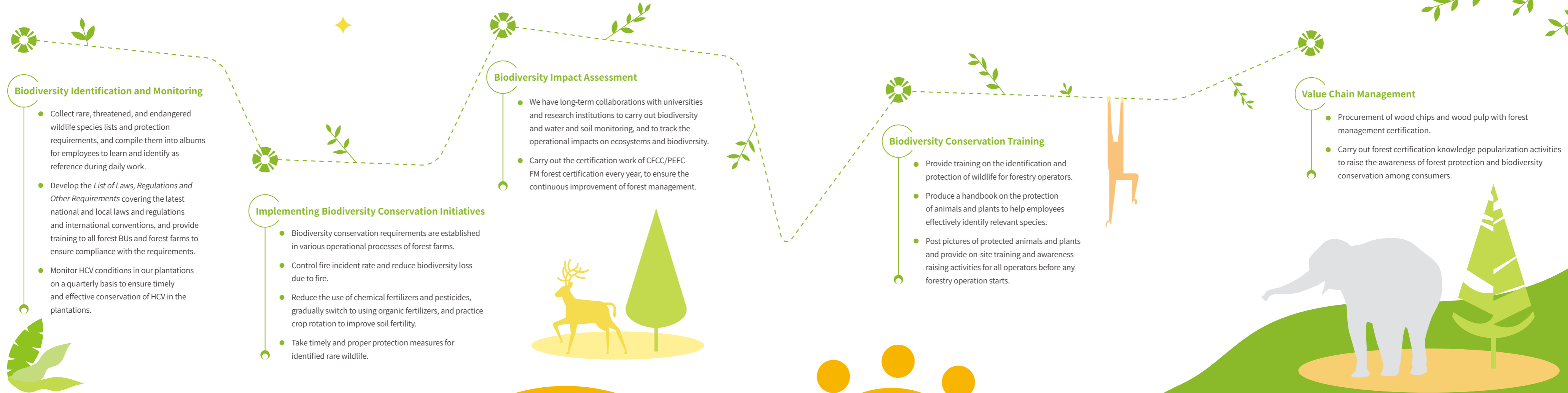
Vision of APP China Forestry

APP China Forestry is committed to scientifically managing modern timber plantations, adhering to the concept of sustainable development, and realizing social, economic, and ecological benefits in a harmonious way, so as to become a world-class forestry enterprise.

¹RTE Species: A collective term for rare, threatened, and endangered species.



Biodiversity Conservation Roadmap of APP China



Our Actions

Biodiversity Identification

APP China Forestry regularly collects the latest requirements of national and local laws and regulations and international conventions, and compiles them into the *List of Laws, Regulations and Other Requirements*, covering more than 300 laws, regulations, and international conventions such as the *Law on the Protection of Wildlife of the People's Republic of China*, the Convention on Biological Diversity, and the *International Union for the Protection of New Varieties of Plants*. The list and relevant legal texts are distributed to the forest farms to help enhance the awareness of forestry personnel in compliance with biodiversity conservation requirements, and implement requirements into their daily work.

Every year, we collect the national list of rare, threatened, and endangered wildlife and the relevant protection requirements to compile the *List of Key Protected Terrestrial Wild Animals and Wild Plants*, which is produced in the formats of albums and posters for forestry personnel to learn, helping them improve their capabilities and sensitivity of identifying the protected species.

Before each forestry operation, we will conduct a comprehensive survey of protected animals and plants in and around the plantations. In addition to national and provincial protected animals and plants, we also record and protect native tree species² to help conserve local biodiversity. Forestry personnel are required to conduct a comprehensive survey of the plantations covered by their shift before each operation, to confirm whether there is presence of protected animals and plants in the area and its surroundings, and fill out the Biodiversity Survey Record Form accordingly. If the location of key protected wild plants or the fixed nest area of key protected wild animals is found, in addition to this form, the forestry personnel are also required to fill in the Wild Animals and Plants (RTE Included) Species Record Form, mark the location on the map, take pictures for records, and register the finding on file.

We have long been insisting on HCV monitoring. APP China Forestry monitors the HCV conditions in our plantations on a quarterly basis and set up HCV groups. The value of HCV forests mainly lies in six areas, namely biodiversity, landscape-level ecosystems and ecosystem mosaics, ecosystems and habitats, basic ecosystem services, necessities of local communities, and cultural significance. As of the end of 2022, 51% of our plantations completed HCV assessments.

In recent years, we have discovered the national second-class protected plant, *Alsophila spinulosa*, in the plantations of Hainan BU and Lancang BU in Yunnan. We have also found native tree species, *Acer buergerianum* Miq., and Oriental Garden Lizard in the plantations of Hainan BU. In 2022, there were herds of Indian bison and Asian elephants passing through plantations in June and October, respectively, sighted by Lancang Huiming forest farm.

²Native tree species refer to protected tree species below the national and provincial levels.



Alsophila spinulosa

Acer buergerianum Miq.
(a native tree species)



Oriental Garden Lizard (locally called "Leigongma")

Implementing Biodiversity Conservation Initiatives

We have integrated biodiversity conservation into various aspects of forest management, including forestland selection, afforestation planning, pre-operation, forestry activities, and daily patrols, to minimize the disturbance to local ecosystems and biodiversity caused by forestry operations. When a national/provincial (RTE included) protected wildlife is found in or near our plantations, we will immediately take protective measures and make HCV identification in accordance with the *High Conservation Value Identification and Management Procedures*. If it belongs to HCV species, specific measures will be taken for protection and management.

To protect biodiversity and maintain ecosystem stability, we attach great importance to forest fire prevention and control. Hainan BU set a target of controlling the fire hazard rate within 0.2% , and strove to prevent fire hazards and minimize the possible damage to the ecosystem caused by fire through measures such as enhancing the construction of firebreaks and conducting inter-tillage weeding. Through these efforts, there was no incident of fire during the year in all six major forest farms in Hainan.

We actively try to reduce the use of chemicals, such as chemical fertilizers and pesticides, in plantations by using bio-fertilizers, microbial-rich fertilizers, and organic fertilizers, etc. By practicing reasonable crop rotation and intercropping, the nitrogen content in the soil can be increased and the possibilities of diseases and pests can be reduced, thus improving soil fertility. We actively promote mechanized operations and have independently developed equipment such as the "integrated tillage and fertilization equipment", which enables precise fertilization through quantitative, spaced, and targeted methods, thereby improving fertilizer efficiency and avoiding excessive fertilizer runoff and water and soil pollution caused by rainfall, and ultimately reducing the impact on the ecological environment. In addition, we recycle 100% of the chemical packages in the warehouse and hand them over to qualified organizations for safe disposal.

In our Lancang BU in Yunnan, part of eucalyptus plantations overlap with natural woodlands, and we have identified that there are Indian bison living in the forest. To better protect them, we stopped using pesticides and chemicals for weeding in adjacent eucalyptus forest, left more vegetation for them to graze by using manual weeding in forest with trees younger than three years, and stopped weeding afterwards.



Lush vegetation in Lancang plantations



Protecting the Asian Elephant Herd and Building a Harmonious Home for Humans and Elephants



In October 2022, after receiving the report that Asian elephants were witnessed in the plantation, Lancang Huimin forest farm immediately participated in the protection activities of the local government.

The forest farm joined the local "Asian Elephant Alert Group" to stay informed, actively cooperated with local forestry administration in awareness raising and protection activities, and strengthened training and awareness raising in operations, such as strictly prohibiting harming or killing of Asian elephants and paying attention to safety precautions; carried out public safety and wildlife protection awareness-raising activities in villages along the route of the herd.

Furthermore, we actively sent Asian elephant monitoring personnel to participate in the training on information management of Asian elephant monitoring organized by local government to improve the relevant skills; cooperated with government agencies and arranged personnel to be on duty on holidays to monitor the Asian elephants along their route to help prevent major safety accidents or injuries to the animals.



Protection of the National Second-Class Protected Plant - *Alsophila spinulosa*



Alsophila spinulosa is a national second-class protected plant in China. They belong to the fern family and are the only surviving tree fern on Earth. They appeared 150 million years earlier than dinosaurs. Because of their important protection value and scientific research value, they are known as the "giant panda" and "living fossil" in the plant kingdom. The International Union for Conservation of Nature has listed all species of the *Alsophila spinulosa* family in the International Red List of Threatened Species.

In 2019 and 2021, we identified the *Alsophila spinulosa* for times in the plantations in Hainan and Lancang, Yunnan, and took prompt action to set up protective signs and buffer zones around them. In 2022, we continued to monitor and protect the *Alsophila spinulosa*, designating a 100-hectare area of plantations around them as habitat for rare species to protect them from human disturbance or damage.

APP China Forestry's Key Biodiversity Conservation Measures

01

Forestland selection stage

Only commercial forestland defined by the government is accepted.



02

Afforestation planning stage

Conduct biodiversity monitoring and the afforestation planning survey. Onsite administrators must communicate with local forestry bureaus, forestry stations, and village committees to learn whether any protected wildlife is ever detected in the forestland; any wildlife detected shall be clearly marked on the planning map and documented.

Any wildlife nests and key protected plants detected shall be clearly marked on the field topographic map, with noticeable signs placed on site for identification and protection.



03

Before operations

Forestry personnel train contractors and operational workers in biodiversity conservation, operation techniques, safety of working spot, etc.

Prohibit contractors and workers from using fire for production in the forestland, such as burning vegetated land or performing controlled burns.



04

During forestry activities

Prohibit contractors and workers from hunting or trading wild animals, indiscreetly gathering or digging protected wild plants, or destroying the habitats of wild animals.

Rare, threatened, or endangered wildlife identified in forestland shall be reported to relevant government agencies promptly and placed under appropriate protection measures.



05

During daily patrols

Increase awareness of wildlife protection.

Take immediate action to stop any illegal hunting, digging or picking activities of protected wildlife in forestland.



06

Ecological monitoring

Engage in long-term cooperation with universities and research institutions in carrying out ecological monitoring of plantations and conducting plant biodiversity surveys, and strengthen protective measures or modify forest management practices in accordance with the monitoring results.



Biodiversity Impact Assessment

APP China attaches great importance to ecological monitoring of plantations and has long-term cooperation with universities and research institutions to monitor and track the impact of forest management activities on ecosystems and biodiversity. In 2022, we cooperated with the Institute of Ecological Industry of Guangxi Academy of Sciences, Guangdong Eco-Engineering Polytechnic, and School of Earth Sciences of Yunnan University to carry out plantation ecological monitoring projects in the fields of plant diversity, forest growth, soil fertility, runoff field water quality, and water and soil erosion, and conducted a special monitoring project on plant diversity, recording and calculating the understorey plant species richness in eucalyptus plantations to analyze the impact of eucalyptus plantations on plant diversity.

APP China Forestry carries out the certification work of CFCC/PEFC-FM forest certification and ISO14001 Environmental Management System certification every year, using both internal and external audits to identify projects that do not meet the certification standards for rectification, to improve forest management models and enhance sustainable forest management. Biodiversity conservation is one of the important aspects of the national standard *Forest Certification in China - Forest Management* (GB/T 28951-2021), which covers the protection of precious, rare, and endangered plant and animal species, as well as the conservation of forest ecosystems and other related indicators. 2022 was the first year that audits were carried out in accordance with the new standard. The Sustainability Department of APP China Forestry organized employees to deeply study the new standard and its interpretation in early 2022, and conducted internal audits of all aspects of their forest management operations in accordance with the new standard to identify and rectify any deficiencies. In 2022, 12 APP China Forestry companies received CFCC/PEFC-FM certification audits, and three new companies initiated their certification process.



Special Topic

The Eucalyptus Plantation Ecological Impact Monitoring Project

As one of the world's three fast-growing tree species, eucalyptus has many advantages, such as rapid growth, strong adaptability, high yield, mature planting technology, etc., and has become the most important raw material tree species of the papermaking industry in the world and China. Eucalyptus has been introduced into China for 130 years. After years of artificial domestication, breeding, and improvement, eucalyptus has become one of the best localized exotic fast-growing and high-yielding timber forest species in China. According to statistics of the China Eucalyptus Research Center of the National Forestry and Grassland Administration, more than 70% of the raw materials for papermaking wood pulp in China come from eucalyptus.

Research results of various scientific research institutions show that the ecological impact of eucalyptus plantations can be effectively reduced through scientific management methods, and the water utilization rate of eucalyptus is higher than that of pine and acacia.

Over the years, APP China has collaborated with multiple research institutions to carry out eucalyptus ecological and environmental monitoring in various forest farms. By monitoring the biodiversity, soil fertility, and tree growth of eucalyptus plantations and other forest systems, and analyzing the biodiversity indicators such as the importance value and species diversity indicator of understorey plants, as well as quantitative indicators such as plant density, frequency, and coverage, the research team evaluated the impact of eucalyptus plantations on biodiversity and ecosystems.

In 2022, APP China Forestry collaborated with Guangdong Eco-

Engineering Polytechnic to carry out a eucalyptus plantation biodiversity monitoring project in four plantations in Guangdong. Through the analysis of the survey data, it was concluded that the biodiversity conditions in eucalyptus plantations were relatively high, and the biodiversity indicators showed a rapid upward trend compared with the previous year, and it did not appear that eucalyptus plantations had significant impact on the biodiversity of understorey shrubs and herbs. APP China Forestry also cooperated with the Institute of Ecological Industry of Guangxi Academy of Sciences and carried out the long-term monitoring program of eucalyptus ecological environment in two plantations in Guangxi. The project results showed that eucalyptus plantations did not significantly reduce the species diversity index of plant understorey colonies compared with the control group, *Pinus massoniana* Lamb. forest. Besides, there was no significant difference in species

richness of understorey vegetation colonies, soil bulk density, and soil microbial community diversity between eucalyptus plantations and the control forest.

In China, eucalyptus serves as both timber forests and economic forests, as well as shelter forests, scenic forests, ecological forests, and energy forests. Regarding the eucalyptus plantations of APP China, besides providing the raw material for production, they also serve as ecological forests, public welfare forests, and shelter forests. In the future, we will continue to strengthen sustainable forest management measures to further reduce the ecological impact of eucalyptus plantations while fully developing the ecological benefits of eucalyptus forests.

Long-term practical experience shows that taking a variety of scientific afforestation measures can effectively maintain the fertility of eucalyptus plantations, including:

- Interplanting and species rotation;
- Keeping the remaining logging residues, not removing tree stumps, avoiding burning operations, and not taking away dead branches and fallen leaves;
- Carrying out soil testing and formulated fertilization, implementing balanced fertilization, improving fertilizer utilization, and maintaining soil health;
- Applying organic fertilizer and micronutrient fertilizer to increase soil microbial content;
- Implementing rational management, and scientific site control and genetic control to improve soil fertility and maintain soil ecological balance.



Biodiversity Conservation Training

We provide knowledge training on the identification and protection of wildlife to various functional departments and forestry personnel. We have developed illustrated list and posters of national and provincial protected wildlife, which were put up on the operation site before forestry operation starts, to provide on-site training and awareness raising for forestry personnel. APP China Forestry Hainan BU has developed a manual of key national and provincial protected animals and plants, and distributed them in print to all employees to raise their awareness about the protected wildlife in Hainan. In 2022, the Lancang BU invited experts from Yunnan University to conduct training on plant diversity for its employees.

Organizing Thematic Training on Biodiversity

In September 2022, APP China Forestry Guangxi BU conducted a thematic training on biodiversity for all employees through a combination of online and offline ways. During the training, employees studied the requirements of international conventions and relevant national laws and regulations such as the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix I, II, and III*, the *China's Red List of Biodiversity: Higher Plants*, and the *China's Red List of Biodiversity: Vertebrates*, and familiarized themselves with the catalogues of key protected animals and plants in different regions in Guangxi to improve their biodiversity identification capability.

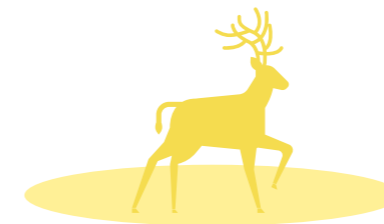
During the training, the company also introduced the specific requirements for biodiversity survey, and provided detailed information on the identification and protection methods for HCV wildlife, as well as biodiversity conservation measures in forestry operations.

The training strengthened employees' awareness of biodiversity conservation and provided effective guidance to forestry personnel on operational compliance and biodiversity conservation in plantations.

Value Chain Management

Regarding raw material procurement, we have formulated a series of relevant requirements and regulations for suppliers, such as guaranteeing that all wood chips come from plantation forests, adopting appropriate forest management activities to protect HCV forests in source forests of timber, and forbidding the use of waste and wood residues that are not on the list of the International Union for Conservation of Nature (IUCN) and the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix I*. In 2022, we focused on increasing the procurement of wood pulp with forest certification. We procured a total of 1,547,188.90 tons of certified wood pulp and 2,625,433.95 tons of certified wood chips, accounting for 20.55% and 18.88% of total wood pulp and wood chips procurements, respectively.

The China Forest Certification Council (CFCC) and the Programme for the Endorsement of Forest Certification (PEFC) achieved mutual recognition in 2014, marking CFCC's formal integration with the international standards and playing a positive role in enhancing the competitiveness of domestic timber products. As a strong supporter and promoter of the mutual recognition of two forest certification systems, APP China has been actively engaged in CFCC/PEFC forest certification labeling work and the promotion of forest certification concepts for many years. We have also launched a variety of green and low-carbon products to promote the concept of forest conservation to consumers and call on the public to support forest conservation through sustainable consumption.



Promoting China Forest Certification System

From September 26th to October 1st, 2022, the nationwide roadshow "China Forest Certification in Action" co-hosted by APP China, China Forest Certification Council (CFCC), and Programme for the Endorsement of Forest Certification (PEFC) was held in Guangzhou. The event aimed to promote and raise the public awareness of China forest certification system and allow more people learn about forest certification as a reliable reference regarding the sustainability information of paper products for consumers to make their purchase decisions.

At the symposium during the event, experts of the Forest Certification National Innovation Alliance's members, including Guangdong Academy of Forestry, PEFC China Office, and APP China, etc., provided the audience with a series of well received sharing on promoting high-quality forestry development with forest certification, PEFC and sustainable forest management, and sustainable development of enterprises and forest certification practices. The event also promoted the China forest certification system in campuses, communities, and office buildings in Guangzhou through face-to-face communication, and conducting questionnaire surveys, etc., aiming to offer people tissue-related everyday tips and promote healthy and environmentally friendly ways to use tissue.



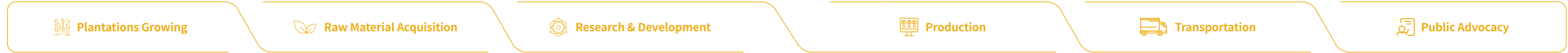
"China Forest Certification in Action" nationwide roadshow

Biodiversity Conservation - a Systematic Endeavour

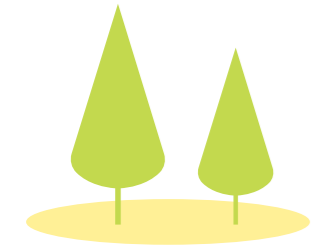
Mankind and mountains, rivers, forests, farmlands, lakes and grasslands are a community of life. To conserve biodiversity also means to protect the ecological environment, promote green development, and foster harmony between humanity and nature. In addition to forest management, we also strictly control other operational aspects in our value chain to minimize the impact of our business operations on the ecological environment, actively contributing to biodiversity conservation.

For example, in terms of research and development, by reducing the chemical substances in the raw material formula, and developing degradable materials, etc., the environmental footprint of products can be effectively reduced. Regarding the wastewater, exhaust gases and solid waste produced in the pulping

and papermaking process, they may cause problems such as water pollution, air pollution, and soil pollution if the chemicals, organics, and toxic matters within are not treated properly, causing impact on the surrounding ecosystems and biodiversity. The combustion of fossil fuels in production and logistics will emit greenhouse gases. By strengthening the utilization of renewable and clean energy, improving energy efficiency, and adopting advanced energy-saving technologies and facilities, good synergistic effects of both pollution reduction and carbon emission reduction can be achieved. Furthermore, when transporting hazardous materials, it is necessary to strictly prevent a series of ecological risks including damage to biodiversity caused by the leakage or spill of hazardous materials.



- **Implement scientific planting** of plantations to provide a suitable environment for the survival for native plant and animal species, especially endangered species.
- Continuously expand the areas of plantations, and enhance the ecosystem carbon sink capacity, contributing to mitigating and adapting to climate change. As of the end of 2022, the carbon stock of our plantations reached **44.84** million tons of carbon dioxide, with a net increase in carbon sinks of **2.45** million tons of carbon dioxide.



- Establish and continuously improve the **biodiversity conservation system and monitoring procedures**, adopt multiple protection measures, and comprehensively prevent the risk of biodiversity loss in our plantations and surrounding regions.
- Suppliers shall guarantee that all wood chips come from plantation forests. **100%** of raw wood materials supplied by our plantations to our pulp mills are CFCC/PEFC-FM-certified.
- Protect HCV forests in source forests of timber, and **51%** of our plantations are HCV-assessed.

- Conduct research related to **pulp cooking** project, to cultivate wood with a **high pulp yield rate**, decreasing the consumption of forest resources, and effectively reducing the consumption of water, chemicals and other resources in the production process.
- Conduct research on forward-looking technologies and their application, and develop **green and healthy products** such as ultra-high bulk, zero plastics, and zero carbon products, contributing to forest protection and ecological environmental restoration.



- Continuously improve the construction of green mills, and **five** mills have obtained national "Green Factory" recognition.
- Continuously intensify the resource utilization and comprehensive utilization of non-hazardous solid waste such as fly ash, sludge, wood chips, and slurry. The comprehensive utilization rate of non-hazardous solid waste reached **99.37%**.
- Adopt advanced water-saving equipment and technology to improve water use efficiency. The average industrial water reuse rate has reached **95%**.
- Eliminate outdated production capacity, and strengthen the utilization of green energy such as photovoltaic power, wind power, purchased green electricity, and biomass energy. Renewable energy accounts for **25.63%** of our total energy consumption.

- Build a smart transportation system focusing on **new energy, new technology, new management, and new models**.
- Encourage carriers to use new energy vehicles. As of the end of 2022, the proportion of energy-saving vehicles in fleet of some carriers of Jiangsu Base of Bohui Paper reached **20%**.
- **Optimize logistics routes** and improve logistics efficiency.
- **Increase the loading capacity of containers**, reducing shipment frequency.



- Launch green and environmentally friendly products such as **Bio-Based Composite** at CIEE, providing green living solutions for consumers.
- Actively promote the **China Forest Certification system**, raise the awareness on forest protection, and advocate consumers to promote forest protection with green consumption behaviors.
- Promote **carbon neutral products** to educate the public on the concept of low carbon and environmental protection. A number of tissue, cultural paper, and industrial paper products have obtained "carbon neutral" certification.

Looking Forward

Globally, biodiversity conservation still has a long way to go. Building a harmonious and beautiful home for all living things requires the joint efforts of all sectors of society. The "Kunming-Montreal Global Biodiversity Framework" (referred to as the "Framework"), adopted during the second phase of the fifteenth meeting of the Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity, demonstrates the willingness and determination of countries to promote biodiversity conservation. The "Framework" aims to guide the international community to join hands to curb and reverse the crisis of biodiversity loss, promote the process of biodiversity restoration, and jointly move towards a beautiful vision of harmony between humanity and nature by 2050.

Biodiversity conservation is not only an important part of corporate social responsibility, but also an important part of sustainable and high-quality corporate development. An increasing number of enterprises have joined the ranks of biodiversity conservation by setting goals and strategies to promote biodiversity conservation and sustainable utilization, carrying out ecological protection actions, and strengthening supply chain management.

In the future, APP China will continue to practice the green development concept and participate in the global biodiversity conservation campaign. We will continuously optimize our sustainable business model in accordance with the "Kunming-Montreal Global Biodiversity Framework", and work together with employees, partners, consumers, and other stakeholders to implement biodiversity conservation initiatives, aiming to promote biodiversity conservation as a social consensus and jointly move towards a naturally better world!



About APP China

Sinar Mas Group was founded by the prominent Indonesian Chinese Mr. Eka Tjipta Widjaja in 1938, with investments spanning continents like Asia, North and South America, Europe, and Oceania today. The Group has built seven business pillars: Pulp & Paper, Financial Services, Agri-Business & Food, Real Estate, Energy & Infrastructure, Telecommunications, and Healthcare.

Asia Pulp & Paper Co., Ltd. (APP), a pulp and paper subsidiary of Sinar Mas Group, was founded in 1972 and has grown into a world leader in papermaking industry. APP has dozens of pulp and paper companies and over one million hectares of fast-growing plantations in Indonesia, China, etc. APP's products and business spread to more than 160 countries, with businesses ranging from plantations and pulp to industrial paper, cultural paper, tissues, and various types of paper products. APP entered China in 1992.

APP's regional headquarters in China – Sinar Mas Paper (China) Investment Co., Ltd. - and its subsidiaries or other affiliated enterprises are collectively referred to as "APP China", which is the leader of pulp and paper industry in China. As of the end of 2022, APP China had total assets totaling RMB244.5 billion and approximately 26,000 full-time employees.

APP's investment in China can be traced back to 1992. For more than 30 years, the Company has been committed to a sustainable development strategy and practiced the green and circular economy by operationalizing the "Integration of Plantation-Pulp-Paper" approach, focusing on the Yangtze River Delta and South China. The Company has invested a huge amount of money to lay out large-scale pulp and paper enterprises of world-leading level, represented by Ningbo Asia, Gold East Paper, Hainan Jinhai Pulp & Paper, Guangxi Jingui Pulp & Paper and Bohui Paper, and invested 286,000 hectares of modern fast-growing plantations.

Currently, APP China has set up multiple functional units within the Company such as Forestry Business Unit, Pulp Business Unit, Paper Business Unit, and Tissue Business Unit, and is widely involved in chemical, real estate, paper equipment, etc. In 2022, APP China's sales revenue in China was about RMB94.3 billion.

In terms of brands, APP China has many well-known trademarks, such as the household paper brand "Breeze" and "VIRJOY", the popular cultural paper brand "Space Shuttle" and "Whale King", the industrial paper brand "Jinli" and "Siji Gui", the office paper brand "Gold Flagship" and "TOPGUN", etc.

APP China actively promotes the development of sustainable urban complexes and technology parks to diversify the allocation of resources. To date, the Company has developed two large-scale urban complexes in Shanghai: the Sinar Mas Plaza and the Shanghai Arch.

Products marketed in over **160** countries/regions across **six** continents

RMB **244.5** billion in total assets

RMB **94.3** billion in annual sales revenue

Unless otherwise stated, the data in this report are from January 1, 2022 to December 31, 2022.



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