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
of L /

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.

Acer buergerianum Miq.

Lush vegetation in Lancang plantations

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

APP China Forestry's Key Biodiversity Conservation Measures

Only commercial forestland defined by the government is accepted.

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.

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.

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.

Increase awareness of wildlife protection.

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

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 understory 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 understory 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 environmental in two plantations in Guangxi. The project results showed that eucalyptus plantations did not significantly reduce the species diversity index of plant understory colonies compared with the control group, *Pinus massoniana* Lamb. forest. Besides, there was no significant difference in species richness of understory 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.

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.

[illegible]tions Grown | **Raw Material Acquisition** | **Research & Development** | **Production** | **Transportation** | **Public Advocacy**

Est blish and c ousl / ove the **biodiversit g, -**

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

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