



联合国粮食及
农业组织



全球环境基金
为地球的生存而投资



国家林业和草原局
国际合作交流中心

中国森林可持续管理提高森林应对气候变化能力项目

项目通讯（第十期）

GEF-056 Newsletter, Issue No. 10

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1、2023 年 GEF056 项目指导委员会会议召开

2023 年 9 月 4 日下午，全球环境基金“中国森林可持续管理提高森林应对气候变化能力项目”指导委员会召开视频会议。

国家林业和草原局国际合作交流中心负责人表示，中国政府高度重视森林在应对气候变化和生物多样性保护中重要作用，通过科学开展国土绿化，大力保护和发展森林资源，精准提升森林质量，改善森林结构，提高森林生态系统的稳定性和可持续性。在此背景下，全球环境基金赠款“中国森林可持续管理提高森林应对气候变化能力项目”探索了不同条件下的森林可持续经营模式，进一步增强了福建、广西、河南、海南 4 省区项目单位的森林可持续经营应对气候变化能力，为提升项目区森林生态系统服务功能价值发挥了重要示范作用。希望各项目实施单位，一如既往地加强与联合国粮农组织的密切配合，按规定用好节余资金，善始善终实施好项目活动，认真总结可复制的森林可持续经营良好实践和示范经验，并积极加以推广，为提升中国森林可持续经营水平，维护全球气候和生态安全做出积极贡献。

联合国粮农组织驻华代表处助理代表、临时代办张忠军先生在致辞中感谢项目参与各方积极配合，克服新冠疫情、机构变化等因素影响，取得了令人满意的项目成绩。希望各方在愉快合作氛围下继续按计划推进项目实施，落实好项目延期要求，扩大项目影响。

中央项目办、福建、河南、广西、海南四省（区）项目办汇报项目进展情况，项目指导委员会审议通过了 2023 年度项目工作计划、

经费预算和采购计划。

GEF-056 Steering Committee Meeting 2023 held

In the afternoon of September 4, 2023, the annual meeting of the Steering Committee of the GEF financed "Sustainable Forest Management to Enhance Resilience of Forests to Climate Change in China (GEF-056)" was held online.

The standing director of the International Cooperation and Exchange Center of the National Forestry and Grassland Administration spoke at the meeting by introducing Chinese government's priority to the role of forests in combating climate change and biodiversity conservation. Through scientific afforestation and reforestation, China has vigorously protected and developed its forest resources, precisely improved forest quality with forest structure, stability and sustainability of forest ecosystems enhanced. In this context, GEF-056 explorations of the sustainable forest management models under national typical conditions shall further enhance the capacity of project units in Fujian, Guangxi, Henan and Hainan provinces and regions to cope with climate change impact through sustainable forest management demonstrations by playing exemplary role in improving the service function of forest ecosystem in project neighboring areas. He hoped that all project implementation units shall strengthen close cooperation with FAO, make good use of the remaining funds as required for implementing project activities, conscientiously summarize replicable good practices and experiences regarding sustainable forest management for dissemination to make greater contributions to improving the level of sustainable forest management in China and maintaining global climate and ecological security.

Mr. Zhang Zhongjun, Assistant Representative of FAO Representative Office in China thanked all participants for their active cooperation in overcoming the impact of COVID-19 epidemic, institutional changes and other factors to achieve satisfactory project results. He hoped that all parties will continue to jointly implement the project as planned in integral atmosphere of cooperation, strengthen the project extension to expand the impact of the project.

The NFGA Central Project Management Office, provincial project management offices of Fujian, Henan, Guangxi and Hainan provinces (autonomous regions) reported their project implementation progress and the project steering committee participants reviewed and approved the 2023 project work plan, funding budget and procurement plan.

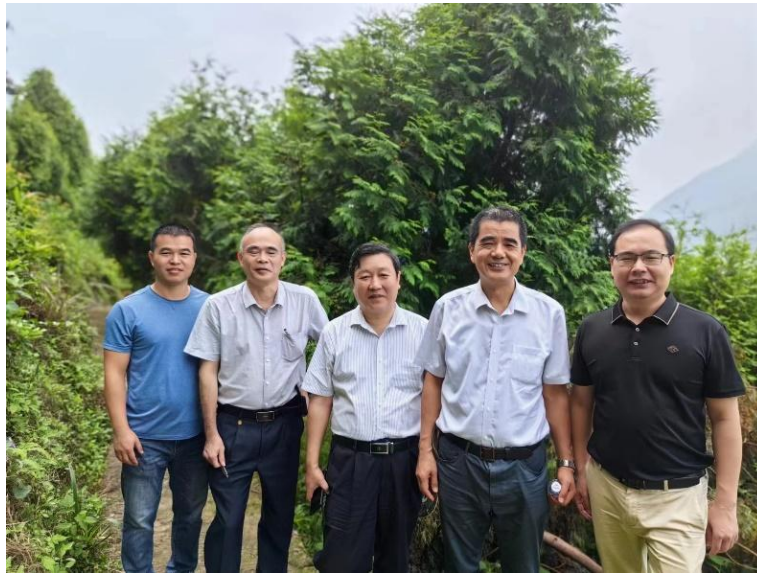
(Central Project Management Office)

2、首席专家团队赴福建调研森林可持续经营

2023年9月17-20日，GEF-056首席技术顾问、中国林科院资源信息研究所所长王宏和森林增汇减排首席专家李海奎研究员，先后到福建省泉州市丰田国有林场，三明市将乐国有林场、顺昌县国有林场，就推进森林可持续经营应对气候变化，GEF-056项目技术示范推广、项目良好实践总结等进行实地调研指导。福建省林业局 GEF 项目办一级调研员钱国钦陪同调研。

首席专家团队在丰田国有林场考察了福建柏人工林经营技术应用情况，前往全国唯一的福建柏种植资源保存基地，福建柏-桉树混交林、福建柏-火力楠近自然林以及木荷大径材培育基地等，对林场

坚持特色经营、通过“省-地-场”融资参与改善林道等营林基础设施



的做法表示肯定。

图 1 CTA 专家团队组在福建国有林场实地调研

在将乐林场，调研组抽查了经 GEF-056 检查验收的减少环境影响的采伐（RIL）项目实施小班，对林场结合楠木套种实施疏伐和杉木大径材培育，设立对比样地开展科研监测以及通过发行碳票提升项目经济效益的创新实践表示赞赏。

在顺昌林场，首席专家团队考察了 GEF-056 项目实施的杉木纯林改培为珍贵树种混交林的示范点、国家储备林质量精准提升示范林、林场与顺昌县人民检察院联合建立的“林业碳汇生态公益诉讼检察保护基地”，以及由顺昌林场率先发起的“一元碳汇”项目基地。

调研组分别与三个林场进行了会议交流，就 GEF-056 实施进展及问题、林业碳汇方法学、人工林生物多样性保护、国家储备林可持

续经营等对相关人员进行培训。

CTA Team Visited Fujian to survey Sustainable Forest Management

During September 17-20, 2023, Wang Hong the Chief Technical Advisor of GEF-056 and Director of the Institute of Forest Resources Information Techniques of the Chinese Academy of Forestry and Li Haikui the Chief Expert of Forest Carbon for Emission Reduction went to Fujian Fengtian State-owned Forest Farm of Quanzhou City, Jiangle State-owned Forest Farm and Shunchang State-owned Forest Farm in Sanming City to promote sustainable forest management for climate change by surveying the good practices with field research and guidance. Qian Guoqin the First Consultant of GEF Project Office of Fujian Forestry Bureau accompanied the team for survey.

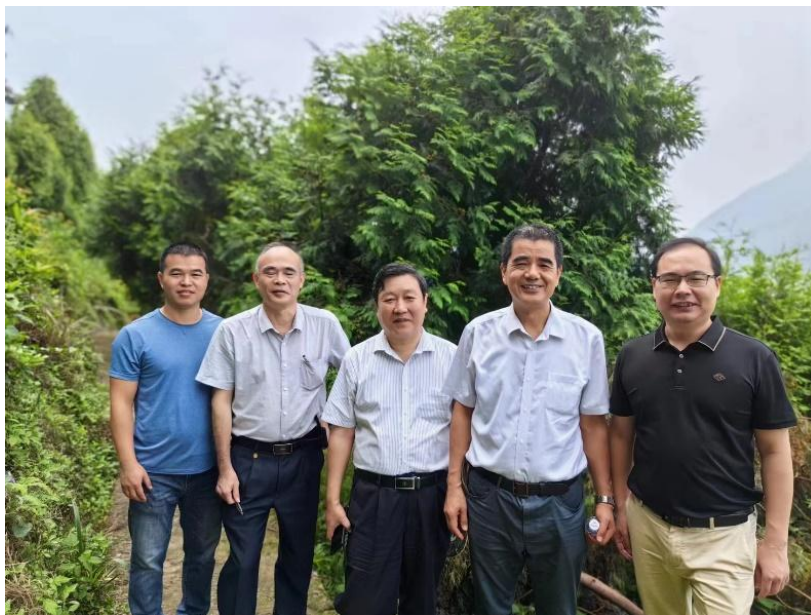


Figure 1 CTA Team's Field Survey in Fujian State owned Forest Farms

The CTA team inspected the application of Fujian cypress (*Fokienia hodginsii*) plantation management in Fengtian State-owned Forest Farm by site

studying the only Fujian cypress germplasm resources conservation base in China, Fujian cypress and eucalyptus mixed forest, Fujian cypress and *Michelia macclurei* close-to-nature forest and *Schima superba* large diameter timber forest plantation base and affirmed the characterized management practices of participatory improvement of forestry infrastructure of forest roads through "government financing and self-financing.

In Jiangle Forest Farm, the team conducted a random check on the environmental impact reduction logging (RIL) SFM pilot demonstration activity that had been inspected and accepted under GEF-056, and commended the forest farm for its innovative practices of thinning for large diameter timber cultivation of Chinese fir in combination with mixed planting with *Phoebe bournei*, setting up comparative plots for research monitoring and adding forest owners' income for forest management by issuing "forest carbon ticket".

In Shunchang County Forest Farm, the team inspected a pilot demonstration site for transforming Chinese fir monoculture plantation into mixed forest of precious species under GEF-056, the demonstration forest for precisely improving the quality of national timber reserve forest, the "Forest Carbon Ecological Public Interest Litigation Inspection and Protection Base" jointly established by the Shunchang County Forest Farm and the People's Procuratorate of Shunchang County, and "1-yuan for Forest Carbon project" innovated by the farm.

The team held office meetings with and offered training of relevant personnel of above three forest farms by exchanging information and observations regarding the implementation progress and problems of GEF-056, forestry carbon methodology, plantation biodiversity conservation and

sustainable management of national timber reserve forests.

(Qian Guoqin, Zhao Bing)

3、将乐国有林场通过“碳票”实现森林碳汇价值

“碳票”是地方林业主管部门为林地林木发行的载明经第三方机构监测核算、专家审查、林业和相关部门审定后的林地林木碳存储量，可用于交易、质押、兑现、抵消等权能的凭证。2014年以来，GEF-056项目试点单位将乐国有林场在县委政府的指导和支持下，利用高校院所人才技术优势，积极探索林业碳汇制度改革路径，开发林业碳汇项目、碳托管和碳监测计量、碳金融服务，开展碳汇项目方法学研究，推动森林“碳票”项目开发、交易、碳收储、碳司法和碳中和等的健康发展，推进实现生态产品价值及林农、企业增收和森林应对气候变化的“双赢”。



图2 将乐林场与福建兴业银行签订碳票购买协议

根据《三明市林业碳票管理办法（试行）》，“碳票”由市发展改革委、自然资源、生态环境、林业、金融监督管理等部门联合印发，包括制发、评估、质押、流转、交易等环节，任何森林经营主体都可以申请“碳票”。按照当今的林业碳汇项目方法学，生态公益林、天然林、重点区位商品林等不能开发碳汇项目，而“碳票”的开发主体则宽泛很多，只要是权属清晰的林地、林木都可以申请“碳票”。另外，“碳票”针对森林自然生长条件下每年的净固碳量，而碳汇项目则指的是每年新增的额外碳储量。

自2021年8月将乐国有林场首次出售“碳票”以来，将乐国有林场分别与三明市毅君机械铸造有限公司、兴业银行股份有限公司三明分行签订3500吨、2000吨森林碳票转让协议，合计转让费用8.25万元。迄今，将乐县已开发森林碳票项目面积5.5万亩，签发碳票总量17.17万吨，实现碳票交易2.6万吨，交易总金额达到58.06万余元。

作为响应国家应对气候变化行动，将林业生态价值转换为经济价值的“碳票”，符合国家绿色金融改革创新的要求，是中国核证减排量（CCER）和国际自愿碳标准（VCS）实现碳汇价值实现渠道的有益补充，对于进一步发挥森林在推动实现碳中和愿景，实现“好生态就有好收益”“不砍树也致富”“好空气越来越值钱”广大林农的普遍共识，有创新示范带动作用。

Forest Carbon Monetized through "Carbon Ticket" in Jiangle

"Carbon ticket" as a certificate issued by the local competent authority for

forest indicates the carbon storage of forest as monitored and accounted by third party experts and approval by forestry and relevant authorities for purposes of trading, pledge, cashing and offsetting rights. Since 2014, under the guidance and support of the local county government, the GEF-056 pilot unit Jiangle State-owned Forest Farm has actively made the forestry carbon sequestration system reformative explorations by pilot developing forestry carbon sequestration projects, carbon trusteeship, carbon accounting, carbon financing with cooperative methodological researches on carbon sequestration to promote the development, trading, carbon storage healthy development of carbon judicature and carbon neutrality for monetization of forest ecological products and "win-win" of forest farmers, enterprises and forest management in response to climate change.



Figure 2 Jiangle Forest Farm signed forest carbon purchase contract with Fujian Industrial Bank Co., Ltd

According to the local official document Sanming City Forestry Carbon Ticket Management Measures (for trial execution), "carbon ticket" is jointly issued by the governmental agencies of municipal development and reform, natural resources, ecological environment, forestry, financial supervision and management departments, including the production, issuance, evaluation, pledge,

circulation, trading etc. All forest owners are eligible for applying for issuing of "carbon ticket". While the current forestry carbon sequestration project methodologies, carbon sequestration projects should not be developed for ecological public welfare forests, natural forests, key regional commercial forests, the "carbon tickets" has covered broader types of forests as long as the ownership of forest land and trees is clear. In addition, the "carbon ticket" refers to the annual net carbon sequestration under the natural growth conditions of forests while the prevailing forest carbon projects refer only to the annual additional carbon accumulated.

Since the first sale of "carbon tickets" by Jiangle Forest Farm in August 2021, the farm has signed forest carbon ticket transfer agreements for 3,500 tons and 2,000 tons with Sanming Yijun Machinery Casting Co., Ltd. and Sanming Branch of Fujian Industrial Bank Co. Ltd respectively with a total income of 82,500 yuan. So far, the forest carbon ticket project developed in Jiangle County have covered forest area of 55,000 mu, with a total of 171,700 tons of carbon tickets issued in which 26,000 tons were transacted for income of 580,600 Yuan.

The "carbon ticket" that contributes to climate change impact mitigation with forest ecological services monetization meets closely the policy requirements of national green financial reform and innovation so a useful complement and alternative to the available channels for China certified emission reduction (CCER) and international voluntary carbon standards (VCS) to realize forest carbon value. Carbon ticket in addition to promoting carbon neutrality helps materialize the general consensus of forest farmers of "Good ecology leads to good benefits", "Less cutting leads to more wealth", "Good air is becoming more valuable" so having mobilizing and demonstrating social impacts.

(Wang Hong, Li Haikui)

4、顺昌县国有林场开展“一元碳汇”项目

为解决近年来森林碳汇市场上集体和个人的林地林木难以参与

碳汇项目实施及交易的问题，补充现有碳汇方法学及 CCER、福建森林碳汇（FFCER）等相关规则下的森林碳汇贸易实践，GEF-056 试点示范单位顺昌县国有林场在 2019 年创立并编制完成了《“一元碳汇”项目方法学》，在全国首创“一元碳汇”试点项目。

“一元碳汇”项目通过一个 APP 软件平台，通过向公众推介顺昌林场的“乡村振兴”以及“公益版块”和“旅游版块”为林地和森林业主的森林经营活动融资，其中，“公益”版块将辖区内公益林以及城市公园等城区绿化产生的碳汇向广大公众和企业销售，并为其提供“在线植树”的场景，使其可以足不出户地为地球增绿和生态保护贡献一份力量。成立的“顺昌县零碳环保公益基金会”作为“公益”版块交易资金的承接方，所得资金用于绿色低碳发展、乡村振兴、生态产品价值实现等领域；“旅游”版块将辖区内旅游风景区的林地林木纳入碳汇资源库，并通过旅游场景认购实现碳汇价值，引导大众“绿色低碳”生活，所得资金用于支持森林旅游事业的发展和生态环境的保护。



图 3 平均生长量 15 立方米/年.亩以上的杉木林、5-6 年可采收的毛竹林是顺昌国有林场储碳产材的优势

“一元碳汇”项目从“乡村振兴”碳汇开发破题，建成了覆盖全县 12 个乡镇（街道）28 个脱贫村、1404 户脱贫户的森林“碳库”，将 11.5 万亩林地林木策划实施 12 个碳汇项目，30 年项目活动期总碳汇量 142.5 万吨，首期 10 年核证上线 47.5 万吨。碳汇项目实施所产生的碳汇量通过微信小程序扫码方式，以 1 元 10 千克的价格向社会销售，既是森林生态产品价值实现的新路径，又是巩固脱贫攻坚成果、助力乡村振兴的长效机制，实现了习近平生态文明思想与脱贫攻坚重要论述的有机融合。

基于顺昌国有林场的前期实践经验，2023 年 2 月，南平市林业局、发改局、生态环境局等五部门联合印发《南平市“一元碳汇”开发及交易管理办法（试行）的通知》，开始在南平全市推广“一元碳汇”项目。截止目前，“一元碳汇”顺昌微信平台已有 10427 人次认购了 8064 吨的碳汇量，认购额 80.64 万元，惠及林农 769 户，成为全国森林碳汇创新示范的又一典型案例。

Shunchang Lunched "1-yuan for Forest Carbon Project"

In order to solve the problem that collective and individual forest owners found hard to participate in forest carbon market trading projects in recent years, and to supplement the existent carbon methodology and trade practices under relevant rules of CCER, Fujian Forest Carbon Sequestration (FFCER), the GEF-056 pilot demonstration unit Shunchang County State-owned Forest

Farm innovatively compiled for pilot use the 1-Yuan for Forest Carbon Methodology in 2019 to lunch the first "1-yuan for Forest Carbon Project" in China.

In the above project, a developed APP software platform named "One-yuan for Forest Carbon Project" is used for promoting the "Rural Revitalization", "Public Welfare" and "Tourism" of Shunchang County Forest Farm for the public to donate forest management activities of woodlanders and forest owners. Specifically the "Public Welfare" section sells carbon generated by public welfare forests, urban park forests and other city vegetation to the general public and enterprises, with the visual online "tree planting" so that they can contribute to the greening of the earth and ecological protection off-site. The Shunchang County Zero Carbon Environmental Protection Public Welfare Foundation established as the receiver of the transaction funds of the "public welfare" section help use the funds obtained for actual green and low-carbon development, rural revitalization, ecological product value realization etc. In the "Tourism section", the forest in the tourism scenic spots are included in the carbon pool and the carbon value is realized by subscribing tourism scenes leading the public to live a "green and low-carbon" life, and the funds mobilized thereby are used to support the development of forest tourism and the protection of forest ecology.



Fig. 3 The advantages of carbon and timber of Shunchang lie mainly in the Chinese fir with average growth of over 15m³/a.mu and the *Phyllostachys pubescens* forest that can be harvested within 5-6 years

The "1-Yuan Forest Carbon project" actually enlivened the "rural revitalization" carbon development by building a forest "carbon pool" covering 28 poverty-stricken villages and 1,404 poor households in 12 townships of the county with planning and implementing 12 carbon projects for 115,000 mu of forest equivalent to carbon storage of 1.425 million tons in the 30-year project activity period, and 475,000 tons certified online in the first 10 years. The amount of carbon generated by the implementation of the carbon project is sold to the society at a price of 1 Yuan for 10 kg through WeChat software platform two-dimensional code scanning, a new way to realize the value of forest ecological products and a long-term mechanism to consolidate the achievements of poverty alleviation and rural revitalization to realize the organic integration of ecological civilization and poverty alleviation.

Based on the early practices and experience of Shunchang State-owned Forest Farm and in February 2023, five governmental departments of Nanping City including the Forestry Bureau, the Development and Reform Bureau, the

Ecological Environment Bureau formally issued the Notice on the Management Measures for the Development and Trading of "One-Yuan Forest Carbon of Nanping City (for trial execution) to promote the "One-Yuan Forest Carbon project in Nanping City. So far, the Shunchang WeChat platform of "One-Yuan for forest carbon" has 104,27 person times subscribed for 8,064 tons of forest carbon, with a subscription amount of 806,400 yuan to benefit 769 forest farmers so another typical case of national forest carbon innovation demonstration.

(Zhong Zhaoquan, Wang Hong)

5、《碳汇型国家储备林经营指南》开始编制

为规范以固碳增汇为主要目的国家储备林的经营管理活动，充分发挥人为管理措施在森林应对气候变化和服务国家“双碳”目标中的作用，确保国内碳汇造林和营林增汇项目所产出的碳汇达到中国核证减排量（CCER）所要求的可测量、可报告和可核查，推动国内森林项目自愿性碳减排交易，根据国家林草局的建议，中国林科院正在编制以促进国家储备林“储材+储碳”双重目标的《碳汇型国家储备林经营技术指南》。

据《碳汇型国家储备林经营技术指南》编制项目的负责人、中国林科院资源所林业增汇减排专家李海奎研究员介绍，该指南考虑了《联合国气候变化框架公约》（UNFCCC）关于清洁发展机制（CDM）下有关林业活动的要求，参考和借鉴了政府间气候变化专门委员会（IPCC）《2006年国家温室气体清单编制指南》（2019年修订版）和《土地利用、土地利用变化与林业优良做法指南》、国际自愿减排市场林业项目相关方法学和要求，同时结合我国实施大规模国土绿化行

动和《国家储备林建设规划（2018-2035年）》等战略工程的理论和实践，着眼于森林生态系统全组分碳库，贯穿从人工林营造到收获利用的整个过程，对相应的人为管理和经营措施等给出明确的规范，最大限度地发挥森林的碳库作用，保证本指南既符合国际规则又适合我国林业实际，具有科学性、合理性和可操作性。预计《碳汇型国家储备林经营技术指南》计划于2023年底发布实施。

根据国家林业和草原局发布的数据，作为GEF-056项目国内配套工程的国家储备林建设工程实施十余年来，累计落实建设资金1,400多亿元，建设面积9,200多万亩，累计产材约1.5亿立方米。“十四五”期间，计划建设国家储备林3,600万亩以上，增加蓄积7,000万立方米以上，在提高中国木材自给率的同时为森林发挥“碳中和”作用应对气候变化做出积极贡献。

Carbon Guide Developed for National Timber Reserve Forest

In order to regulate the planted forest management operations of national timber reserve forests for increased carbon sequestration to adapt to climate change to achieve the central government "double carbon goals" through the carbon storage produced by afforestation, reforestation and forest management carbon enhancement projects to meet the requirements of China Certified Emission Reduction (CCER) that can be measured, reported and verified, to promote voluntary carbon emission reduction trading of domestic forest projects, according to the NFGA instructions, the Chinese Academy of Forestry Sciences is now preparing the Technical Guide for Carbon Sequestration of National Timber Reserve Forest Management to switch forest management targets of the National Timber Reserve Forests to "both timber and carbon" .

According to Li Haikui the researcher of forest carbon for emission

reduction in the Institute of Forest Resources Information Techniques of Chinese Academy of Forestry Sciences, the guide shall take into account the requirements of the United Nations Framework Convention on Climate Change (UNFCCC) on forestry activities under the Clean Development Mechanism (CDM), refer to and drawn lessons from the Intergovernmental Panel on Climate Change (IPCC) Guidelines for the Preparation of National Greenhouse Gas Inventories in 2006 (Revised in 2019), the Guidelines for Good Practices in Land Use, Land Use Change and Forestry, and the relevant methodologies and requirements of forestry projects in the international voluntary emission reduction market. At the same time, the Guide shall consider the theory and practice of China's implementation of large-scale afforestation and reforestation actions and the National Timber Reserve Forest Construction Plan (2018-2035) that focus on the full-component carbon pool of the forest ecosystem covering the whole process from planting to harvesting and utilization, giving clear specifications for corresponding human management measures maximizing the role of forest carbon pool. To ensure the scientific, reasonable and operable attributes, the Guide shall conform to international rules as well as China's forestry practices. It is expected that the Guide be released for execution at the end of year 2023.

According to the data released by the NFGA, the national timber reserve forest construction project as the national counterpart project of the GEF-056, has been implemented for more than ten years, with total construction fund input more than 140 billion yuan, and for construction area over 92 million mu and total timber output about 150 million cubic meters. During the 14th Five-Year Plan period, it is planned to add national timber reserve forest 36 million mu for additional forest standing stock more than 70 million cubic meters to improve China's timber self-sufficiency while making contributions to forest role of "carbon neutrality" to combat climate change.

(Wang Hong, Li Haikui)