通过森林景观规划和国有林场改革

增强中国人工林生态系统服务功能项目

（国有林场GEF项目）

Building Climate Resilient Green Infrastructure: Enhancing Ecosystem Services of Planted Forests in China through Forest Landscape Restoration and Governance Innovation

PRC-GEF State Forest Farms Project

IUCN Environmental and Social Management System (ESMS) China Practice Report

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Table of Contents

I. IUCN Environmental and Social Management System

The IUCN Environmental and Social Management System (ESMS) refers to the institutional design led by the International Union for Conservation of Nature (IUCN) developed to manage environmental and social risks in project design and implementation. The IUCN ESMS provides a systematic procedure to check IUCN projects for potential adverse environmental and social impacts to ensure that negative impacts are avoided or minimized to the extent possible while positive impacts are stimulated. Mainstreaming environmental and social management within IUCN started in May 2016, following a two-year process of validating and updating an initial version of the ESMS that helped IUCN achieve accreditation as a Global Environmental Facility (GEF) Project Agency. The process included awareness building and training sessions among IUCN Secretariat staff and gathering first feedback. In parallel, the ESMS was tested on all projects funded under IUCN's Integrated Tiger Habitat Conservation Programme as well as on IUCN projects being prepared for GEF funding. Input from the first feedback round together with lessons learned from early ESMS application allowed for refinement and consolidation of the ESMS principles and standards and of procedures. The refined ESMS went through a final internal consultation with IUCN Secretariat staff and Commission members in February 2016 and the final version became effective in May 2016.

IUCN's mission is "to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable." IUCN projects aim to achieve positive conservation and social outcomes, including benefits for communities that depend on natural resources. However, unwanted negative environmental and social impacts may occur when projects are implemented. Within the context of its mission, IUCN's intends to ensure that appropriate measures are taken to avoid or minimize negative environmental and social impacts while stimulating positive impacts.

To put this intention into practice, IUCN has established an ESMS as an intrinsic part of IUCN's project cycle. It provides systematic steps and operational tools for managing the environmental and social performance of projects implemented or supported by IUCN. The system allows IUCN to screen potential projects for negative environmental or social impacts and develop suitable measures to avoid, minimize, or compensate for these impacts. It also ensures that the implementation and effectiveness of mitigation measures are monitored and that any impacts arising during execution of the project are addressed.

The ESMS is guided by eight overarching principles and four standards that reflect key environmental and social areas and issues that are at the heart of IUCN's conservation approach. They form the core of the ESMS Policy Framework, which governs the ESMS and determines the minimum environmental and social requirements for IUCN projects.

The ESMS principles and standards are rooted in IUCN environmental and social policies and IUCN World Conservation Congress (WCC) resolutions. They also draw on IUCN values, good practice tools developed by IUCN Secretariat programmes and IUCN Commissions and on lessons learned during IUCN's long tradition of working at the interface of conservation and social issues and human rights.

The ESMS principles and standards consolidate objectives of the Convention on Biological Diversity as well as other relevant international conventions and agreements on environmental and social issues including the Universal Declaration on Human Rights and the United Nations Declaration of the Rights of Indigenous Peoples. The human rights aspects of the principles and standards have been further shaped by the work of the Conservation Initiative on Human Rights of which IUCN is an engaged member.

The ESMS Policy Framework has also been influenced by policies and guidelines from other organizations such as the International Finance Corporation (IFC), the World Bank, World Wildlife Fund, Conservational International, the United Nations Environment Programme (UNEP), the Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Development Programme (UNDP). The ESMS is fully compliant with relevant policies of the GEF – specifically the GEF Policy for Agency Minimum Standards on Environmental and Social Safeguards and with relevant policies of the Green Climate Fund.

The role of the ESMS Policy Framework, its roots and other influencing elements are summarized in Figure 1.

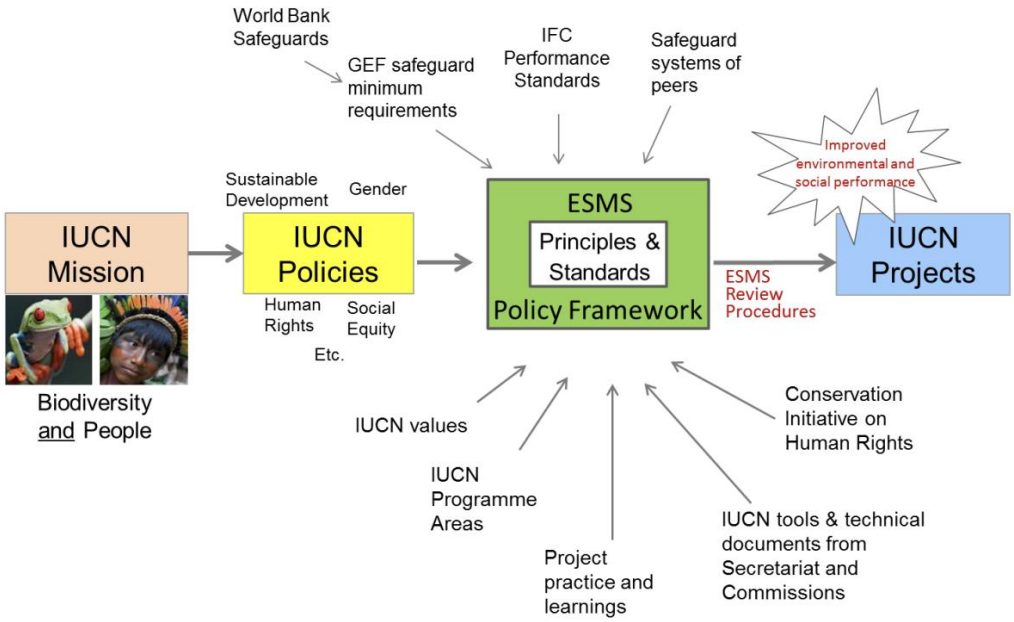


Figure 1: The role of the ESMS Policy Framework, its roots and other influencing elements

A. ESMS Policy Framework

At the core of ESMS Policy Framework are eight ESMS principles and four ESMS standards as visualized in Figure 2. The ESMS principles and standards, which are described in detail in the following sub-chapters, reflect key environmental and social areas and issues which are at the heart of IUCN's conservation approach. While these elements form the core of the Policy Framework, thematic coverage of the ESMS risk identification goes beyond these core areas to capture other possible negative social and environmental impacts and risks relevant in certain project contexts. Examples of such risk issues are shown in the outer frame of Figure 2.

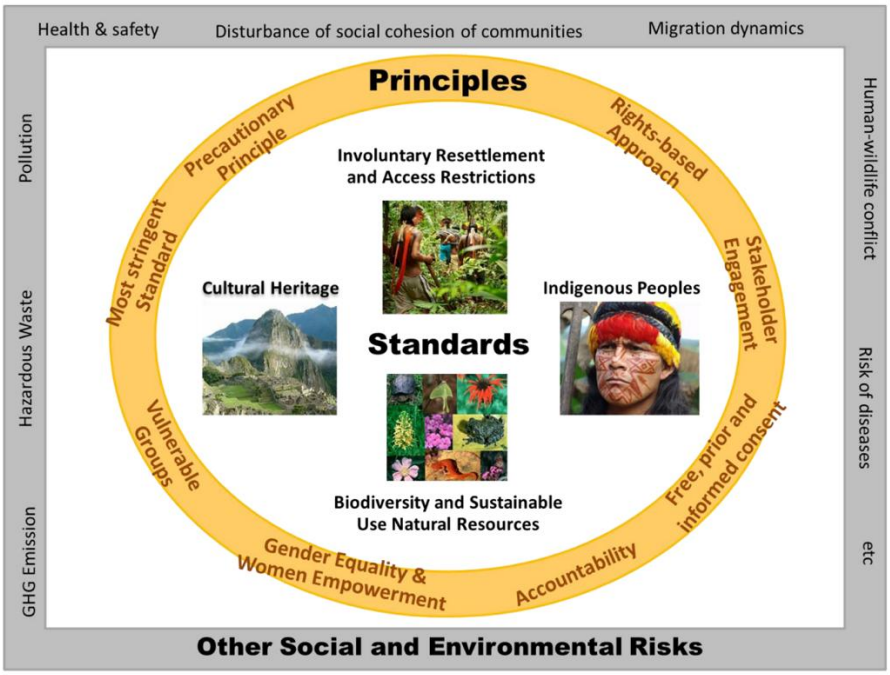


Figure 2: ESMS Policy Framework

B. The Eight ESMS Principles

The ESMS is guided by eight principles rooted in IUCN policies that provide high-level governance for IUCN projects. The role of the ESMS is to check the adherence of the design of IUCN projects to these principles. The principles also guide the implementation of ESMS activities such as the impact assessment process. The eight principles are: Taking a Rights-Based Approach; Protecting the Needs of Vulnerable Groups; Gender Equality and Women Empowerment, Stakeholder Engagement; Free, Prior and Informed Consent; Accountability; the Precautionary Principle and Stakeholder Engagement. They are described below.

Principle 1: Principle on Taking a Rights-based Approach

The rights-based approach guides an organization to respect, protect and promote the fulfilment of human rights. The Principle on Taking a Rights-Based Approach

implies the promotion of “conservation with justice”. It recognizes that activities and projects related to conservation can have both positive and negative impacts on human rights. The pursuit of conservation goals can contribute positively to the realization of many fundamental human rights such as those related to access to water, health, food and shelter. This is particularly important for indigenous peoples and rural and urban communities whose livelihoods are directly linked to nature, and many other vulnerable and/or disenfranchised groups. Likewise, secure rights – for example, land tenure and participation in decision making – can enable more effective environmental stewardship. Conversely, conservation activities can generate negative impacts if human rights and well-being are not sufficiently understood or addressed. Weak fulfilment of rights can also undermine conservation outcomes. Hence, implementing a rights-based approach makes rights and conservation mutually reinforcing.

Principle 2: Principle on Protecting the Needs of Vulnerable Groups

Protecting the needs of vulnerable groups and attention to the root causes of vulnerability is important in identifying, avoiding, and mitigating adverse social and environmental impacts and in identifying opportunities to enhance social and environmental livelihood conditions. Depending on the project context, vulnerable groups could be composed of people who are landless or displaced, elderly, or disabled, children, ethnic minorities, impoverished, marginalized, or discriminated against. Reducing vulnerability, building resilience, and promoting equity are at the core of IUCN’s approach to project design, assessment and implementation and consider the social, economic, cultural, and environmental causes of vulnerability, including climate change.

Principle 3: Principle on Gender Equality and Women Empowerment

Gender equality and women empowerment are integral to the achievement of IUCN’s mission and fundamental to realizing human rights and social justice. IUCN systematically mainstreams its commitment to gender equality and women empowerment by prioritizing gender-responsive measures throughout IUCN’s Programme and assessing the potential implications, benefits and risks for women and men of any planned action. With this approach, women’s and men’s concerns and experiences become an integral dimension to the design, implementation, monitoring and evaluation of policies and programmes, so that gender inequalities and inequities are not perpetuated or exacerbated.

Principle 4: Principle on Stakeholder Engagement

Meaningful, effective, and informed participation of stakeholders in the development and implementation of projects is an essential principle of IUCN’s project management practice. Engaging stakeholders as early as possible is important to understand their views and interests, establish a constructive relationship with relevant parties and enable stakeholders to take ownership of the project.

Figure 3 illustrates the general logic of engagement, but in practice the four levels are less clear-cut. Engagement strategies should be well tailored to individual

stakeholder groups to reflect their concerns and their rights to land and natural resources and might need to be combined with awareness building, empowering and capacity-strengthening activities. The latter are especially important for affected individuals and communities in a politically weak position (e.g., indigenous peoples or vulnerable groups) and may require special mechanisms to facilitate full participation and consultation.

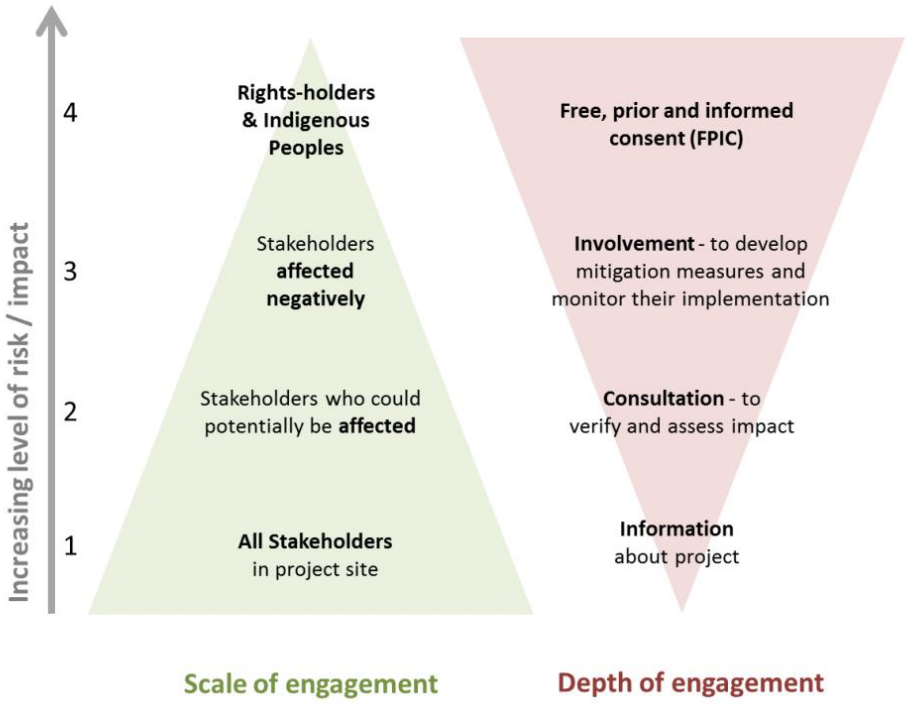


Figure 3: Scale (extent of audience reached) and depth (intensity) of stakeholder engagement

Principle 5: Principle on Free, Prior and Informed Consent (FPIC)

In IUCN's ESMS, free, prior and informed consent (FPIC) is the right of a party with legitimate rights to their lands, territories and resources to freely grant authorization to another party, within existing legal frameworks (including customary law), for the execution of certain activity that implies access to, and use of, tangible or intangible resources of the party granting authorization, or that may affect such lands, territories and resources. Often used in the context of indigenous peoples, in IUCN's ESMS FPIC applies also more broadly to other rights-holders such as local communities. This also implies that FPIC's application is not limited to countries where indigenous peoples are recognized and formal FPIC procedures are in place.

The components of "free, prior and informed consent" are described below.

Free. Consent must not be imposed or manufactured but obtained through free consultation and voluntary expressions of the communities. Consensus should be reached in accordance with indigenous peoples' or communities' norms including customary law and practices, free from any intimidation, manipulation, or coercion.

Prior. Consultation requires time and effective systems for communicating with stakeholders. "Ex ante" emphasizes the importance of starting consultations as early

as possible to inform the steps of the project cycle, thus providing sufficient time for Aboriginal peoples and communities to make their own decisions.

Informed. The principle requires that indigenous peoples or other affected communities are informed about the nature, duration and scope of the proposed project, the location of areas that will be affected, potential impacts (positive and negative) on their lands and resources and implications for their economic, social and cultural rights and well-being. Communities should also be informed about their rights under national law and under the standards and procedures of all agencies involved in the proposed intervention (including IUCN's ESMS).

Consent. Communities are asked to consent to a project or a particular activity and have the right to give their consent, withhold it or offer it conditionally. Consultation must be undertaken in good faith. The parties should establish a dialogue to find appropriate solutions in an atmosphere of mutual respect, and full and equitable participation. Indigenous peoples and communities should be able to participate through their own freely chosen representatives and customary or other institutions and access technical or legal services if needed. Consent should not be limited to individuals but should include the collective voice of indigenous communities through customary institutions, local authorities, formal organizations or collective decision-making processes. If representation is questioned by communities, complementary processes may be needed, for example grassroots consultations with affected groups taking into account both gender and age dimensions.

Principle 6: Principle on Accountability

To guarantee that the ESMS principles, standards and review procedures are consistently followed in project design and implementation, IUCN has created an organizational structure to operationalize the ESMS and mechanisms to assure internal control and enforcement of compliance. Accountability is further reinforced by actively enabling feedback from external parties. This includes establishing public disclosure requirements to assure public access to relevant information about a project and a dedicated mechanism to capture concerns or grievances related to an IUCN project's lack of compliance with the ESMS. By providing a transparent, timely and effective procedure for response and for corrective and remedial actions, IUCN assures people who fear or suffer from adverse impacts access to justice and redress.

Principle 7: Principle on the Precautionary Principle

Following IUCN's *Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management*, adopting this principle in the context of the ESMS means that if knowledge gaps or uncertainties exist about potential environmental or social impacts, a project will be conservatively assigned a higher-risk level during the ESMS screening to allow for a rigorous and participatory assessment. If, after the assessment, uncertainty about adverse social or environmental impacts persists, either major design changes will be undertaken, or the project will be cancelled. However, acting with precaution should not lead to avoiding or postponing projects and measures aimed at preventing environmental

degradation. The IUCN Guidelines state that the precautionary approach should "guide a constructive search for alternatives and practical solutions, and support positive measures to anticipate, prevent and mitigate threats. The potential benefits and threats raised by available courses of action and inaction should be assessed." Threats may be associated with any course of action and the "decisions involve a choice between 'risk and risk' rather than between 'risk and caution'. In assessing the likely consequences of alternative courses of action and inaction the technical feasibility of different approaches should be taken into account." The IUCN Guidelines also call for using an adaptive approach in the face of uncertainty and inadequate evidence about potential threats which means careful monitoring and periodic review to provide feedback, allowing decisions to be amended in the light of feedback and new information.

Principle 8: Principle on Precedence of the Most Stringent Standards

The ESMS procedures and standards will be applied in conjunction and in compliance with applicable legislation of the host country concerning environmental and/or social assessment and human rights, social and gender equity matters including laws implementing the host country's obligations under international laws. If ESMS standards and procedures are more stringent than those of national laws and regulations, or of financier standards, IUCN projects must adhere to the IUCN ESMS standards and procedures.

C. The Four ESMS Standards

IUCN's four ESMS standards reflect the environmental and social policy areas of highest concern to IUCN and address areas where IUCN projects might fall short in implementation. The four standards are: the Standard on Involuntary Resettlement and Access Restrictions; the Standard on Indigenous Peoples; the Standard on Biodiversity Conservation and Sustainable Use of Natural Resources; and the Standard on Cultural Heritage. These four standards are published as separate documents on the IUCN external website. Each document explains a standard's underlying policies, objectives and specific requirements on how to assess and manage associated social and environmental risks. The standards are summarized in Table 1.

Table 1: Summary of the four Environmental and Social Management System standards

Standard	Application
Involuntary Resettlement and Access Restrictions	Applies to projects whose conservation objectives require or imply (1) resettlement of communities or (2) restricting access to land or natural resources and could potentially cause economic or livelihood losses. It includes restricting: • access to and use of natural resources by communities, groups or individuals; • physical access to areas of occupation or use; or • access to social services such as education of health services by

	prohibiting or limiting physical access to those places. Assures that projects will not lead to negative impacts on the rights and livelihoods of peoples.
Indigenous Peoples	Applies whenever indigenous peoples are present in or have collective attachment to a proposed project area or could be affected negatively by the project (even without being present in the project site). Uses a broad definition of 'indigenous' and assures that indigenous peoples' social and cultural identity, customs and institutions are fully respected and that the project does not negatively impact their rights and livelihoods.
Biodiversity Conservation and Sustainable Use of Natural Resources	Applies to projects that may inadvertently have direct or indirect adverse impacts on biodiversity at all scales from genes to landscapes and on ecosystem functions and services. This includes projects that: • may affect biodiversity in protected areas, in areas not formally protected but important for their biodiversity value and/or are managed as such by local communities, as well as in other areas of particular importance for biodiversity conservation; • involve the introduction or reintroduction of species; • involve environmental risks when restoring or modifying of ecosystems outside protected areas, including projects impacting the hydrological cycle; • involve the use of living natural resources – harvesting wild living resources as well as cultivating plants and animals or establishing sustainable use schemes.
Cultural Heritage	Applies to projects that could adversely affect cultural heritage defined as tangible, movable or immovable cultural resources or natural features of historical, cultural, spiritual or symbolic value. Addresses the following threats or issues: • potential damage to cultural resources when undertaking small scale construction – in particular when excavations, movement of earth or flooding are involved and resources may be hidden; • access restrictions to cultural resources by communities with traditional access rights; • development and use of greater social or economic benefits from cultural heritage.

D. Steps in Forest Landscape Restoration Planning - ROAM

The Forest Landscape Restoration Opportunities Identification is a systematic design process for forest landscape restoration (FLR), following the steps provided by The Forest Landscape Restoration Opportunities Assessment Methodology (ROAM) to plan for the identification of potential environmental and social risks and the development of mitigation measures in the restoration plan. ROAM is developed by IUCN, the World Resources Institute, and others to rapidly identify and analyze the FLR potential. The methodology consists of three basic steps: First, an assessment team consisting of multi-stakeholders with diverse knowledge backgrounds is established to comprehensively assess the current status of the region and identify the objectives of forest landscape restoration. Second, it is necessary to collect

relevant data and information, prioritize regional landscape restoration approaches, produce a map of landscape restoration potentials, and analyze economic values, cost-effectiveness, critical success factors, and financing measures. Finally, stakeholders and assessment experts are invited to evaluate the analysis results together to ensure the scientific and applicability of the results.

E. Definition of risk and risk-assessment approach

The ESMS defines environmental or social risks of proposed projects as potential negative impacts: on communities and peoples' rights, livelihoods and well-being, and/or on the physical, natural, socioeconomic or cultural environment.

Scope of the risk. Negative impacts may be caused directly by the activities of a proposed project, or indirectly as knock-on effects or cumulative impacts that materialize through interaction with other developments. Further, the ESMS considers not only impacts occurring at the project site but also impacts exerted within the project's wider area of influence20, including transboundary impacts, and impacts that may be triggered after project implementation as a succession of effects.

Areas of risk. The identification of potential impacts is guided by the ESMS standards and principles that reflect key issues at the heart of IUCN's conservation approach – such as adverse impacts on women and on vulnerable groups, on people's livelihood through access restrictions or resettlement, on indigenous peoples, on cultural heritage and on biodiversity. However, the thematic coverage of the ESMS is wider than the issues covered in the principles and standards and includes other negative environmental and social impact and risk issues. Examples for social risks are

- the potential of project benefits leading to discrimination or marginalization of certain groups,
- increase in vulnerability due to economic losses of people's or community assets such as crops, livestock or infrastructure (e.g., through damages from wildlife)
- disturbances to patterns of social relations and social cohesion,
- child or forced labor,
- community health and safety issues including risks of diseases, injuries or death (e.g., through human-wildlife conflicts) and/or
- adverse impacts on public infrastructure essential for basic needs.

Risk screening also considers environmental risks not covered by the Criteria for the Conservation of Biodiversity and the Sustainable Use of Natural Resources, such as pollution, hazardous waste and greenhouse gas emissions. In some cases, risk identification should also draw on guidelines developed by other safety and security systems, e.g., industry-specific guidelines developed by the International Finance Corporation (IFC).

Risk-assessment approach. The ESMS risk management approach requires a pre-assessment of potential negative impacts (referred to as ESMS screening) at an early stage of project design. This is followed by a more in-depth Environmental and Social

Impact Assessment (ESIA) if potential issues were identified. The pre-assessment assures that the scope and quality of the ESIA process is proportionate to the complexity of the project and the nature and scale of risks: the level of effort is highest for projects that are identified during screening as high-risk projects and lesser for projects classified as moderate-risk projects; for low-risk projects, development can proceed without further assessments. This approach, explained in more detail in chapter 4, is fully compatible with the assessment procedure in Minimum Standard 1 of the GEF Policy on Agency Minimum Standards on Environmental and Social Safeguards.

II. Background of ESMS in the PRC-GEF State Forest Farms Project

A. Basic information on State Forest Farms

Forests cover about one third of the world's land area and provide a wide range of ecosystem services, such as biodiversity conservation, carbon storage and fixation, water purification, wind and sand control, sediment retention, crop pollination, recreation, and forest products. However, the ability of ecosystems to provide services is challenged by factors such as climate change, land-use change and irrational human activities, including the global phenomenon of deforestation and forest degradation. Various studies have shown that ecosystems can provide four types of services - provisioning, regulating, supporting and cultural - and that about 60 of the investigated ecosystem services have been degraded or used unsustainably, leading to a decline in the capacity of ecosystem services on which humans depend. Globally, up to 2 billion hectares of deforested or degraded forests are suitable for restoration. The degradation of the Earth's land surface because of human activities affects the well-being of 3.2 billion people and is moving the planet towards its sixth mass extinction of species. What is more, nearly a million species could become extinct within a few decades, with China being one of the most forest-dependent countries. Aware of the serious consequences of forest decline, China has in recent years invested large sums of money to implement a number of major ecological construction projects, such as the Three-North Protective Forest Project, the Natural Forest Conservation Project, and the Returning Cultivated Land to Forestry Project, in order to protect and rehabilitate forests, expand forest areas, improve forest quality, and enhance the service function of forest ecosystems. However, there are obvious shortcomings in China's forest restoration projects, such as the decline in biodiversity and the frequent occurrence of forest pests and diseases caused by large areas of plantation forest ecosystems with a single tree species.

State-owned forest farms are forestry institutions specializing in forest plantation and forest management and care, which were established by the State in the early stage of the founding of New China to accelerate the cultivation of forest resources, protect and improve the ecological environment, and to take the State's investment in key ecologically fragile areas and large areas of concentrated state-owned barren mountains and wastelands. By the end of 2021, there were 4,297 state-owned forest farms nationwide, distributed in more than 1,600 counties (cities, districts, and hoxuuns) in 31 provinces (autonomous regions and municipalities directly under the central government), with a total area of about 80 million hectares, accounting for 8% of China's total land area. State-owned forest farms have become one of the regions in China with the richest forest resources, the most beautiful forest landscapes, the most complete ecological functions and the richest biodiversity, and are a huge public product and a valuable ecological asset; they are an important part

of China's forestry industry and the backbone of ecological construction, and have become China's most important ecological barriers and strategic bases for the cultivation of forest resources, and constitute the green spine of the construction of an ecological civilization and a beautiful China. It has become the most important ecological barrier and strategic base for cultivating forest resources in China and constitutes the green spine for building ecological civilization and a beautiful China. However, for a long time, the sustainable development of state-owned forest farms has been facing serious challenges, including unclear functional positioning, unsmooth management system, inactive operation mechanism and unsound support policies. Therefore, in February 2015, the CPC Central Committee and the State Council formally issued the State-owned Forest Farm Reform Plan. The reform of state-owned forest farms requires the in-depth implementation of the forestry development strategy focusing on ecological construction, focusing on the two main objectives of protecting the ecology and safeguarding the livelihood of employees, promoting the separation of government affairs and enterprises, realizing the innovation of management and care methods and the innovation of the supervisory system, and promoting the forestry development mode from timber production to ecological restoration and construction, and from the use of forests for economic benefits to the protection of forests for the provision of ecological services. It will establish a new system for state-owned forest farms that is conducive to the protection and development of forest resources, the improvement of ecology and people's livelihood, and the enhancement of the vitality of forestry development, to make greater contributions to the safeguarding of national ecological security, the protection of biodiversity, and the construction of an ecological civilization. By 2020, the ecological functions of state-owned forest farms will be significantly enhanced, production and living conditions will be markedly improved, and the management system will be comprehensively innovated. Forest landscape restoration refers to the process of restoring ecological functions and enhancing human well-being in deforested or degraded forest landscapes. Forest landscape restoration focuses on restoring the entire landscape to meet current and future needs, provide multiple benefits, restore ecosystem functions, and promote economic and social development. However, forest restoration is much more than just planting trees or increasing forest area or improving stand quality.

There are dynamic and complex interactions between humans, natural resources and the multiple land uses that make up the landscape, and it is important to look at this issue from a landscape and ecosystem perspective, integrating local and global, immediate and long-term, development and conservation. Forest landscape restoration is a systematic, landscape-level approach to managing such complex relationships.

B. PRC-GEF State Forest Farms Project

Under the background that the China National Forestry and Grassland Administration (NFGA) was successfully awarded the GEF-funded “Building Climate Resilient Green

Infrastructure: Enhancing Ecosystem Services of Planted Forests in China through Forest Landscape Restoration and Governance Innovation" (referred to as the "PRC-GEF State Forest Farms Project") in 2018. The NFGA is serving as the domestic executing agency and IUCN is serving as the international executing agency. The implementation area is Chengde City in Hebei Province, Ganzhou City in Jiangxi Province, and Bijie City in Guizhou Province. The overall objective of the project is to strengthen the policies, practices, and evidence base of FLR in China through a series of project activities to reducing land degradation, conserving biodiversity, and adapting to climate change.

The three core tasks of the project are: Firstly, to select seven pilot state forest farms, namely Caoyuan State Forest Farm of Fengning County in Hebei Province, Anzidong State Forest Farm in Jiangxi Province, Guihua Sate Forest Farm of Zhijin County in Guizhou Province, Gonglongping Sate Forest Farm in Qixingguan District in Guizhou Province, Huangtuliangzi State Forest Farm of Pingquan City in Hebei Province, Mulan State Forest Farm in Hebei Province, and the Jinpenshan State Forest Farm in Jiangxi Province, utilizing the historical opportunity of the state-owned forest farm reform, drawing on the international innovative concepts such as FLR, compiling forest management plans for pilot farms, and exploring and formulating the mechanisms and institutions that can effectively improve the governance capacity of state forest farms and precisely enhance China's plantation ecosystem service function . The second is to explore the preparation of the forest-oriented mountain-water-forest-farmland-lake-grass-sand plans (i.e., the FLR plans) in the selected two counties and one city. Thirdly, the project explores to integrate the FLR concepts into China's forestry policy and put forward policy recommendations to promote the green development of state-owned forest farms. At the same time, the project will strengthen monitoring, enhance publicity and communication, demonstrate, and play the leading role as international projects.

The project has an implementation period of over four years from 2019 to the end of 2023. It is one of the 11 global child projects of The Restoration Initiative (TRI), which is a joint global programme to restore and manage degraded forest landscapes, supported by GEF funds, and implemented jointly by IUCN, FAO, and UNEP. The objective is to promote and innovate forest landscape restoration to conserve biodiversity, improve ecosystem services, combat land degradation, and enhance resilience to climate change. As a child project of TRI, the PRC-GEF State Forest Farms Project will inject China's power into global forest restoration actions, contribute with China's solutions, and show China's new sustainable forestry development on the international platform.

C. ESMF for PRC-GEF State Forest Farms Project

During the project preparation and approval process, the ESMS experts of IUCN developed the Environmental and Social Management Framework (ESMF) for the project based on the pre-assessment information of the project. To ensure that the preparation of the pilot forest farm management plans and the forest-oriented

mountain-water-forest-farmland-lake-grass-sand plans, as well as the formation of relevant policy recommendations are in line with the principles and standards of the ESMS, the framework proposes key points for screening, assessing, and managing the risks of the project activities. The ESMF proposes a guideline with a five-step ESMS-enhanced ROAM process for the application of the ROAM, which takes into account the principles of the ESMS.

The work of ESMS is carried out for the preparation and implementation of forest management plans in pilot state forest farms, and guidance is provided on the principles and applicable standards of ESMS, as well as specific measures in risk screening, risk management, and risk tracking.

In terms of possible environmental and social impacts, the ESMF also states the following:

Environmental impacts: Since the activities designed by the project are based on a comprehensive analysis of ecologically specialized information, the expected environmental impacts are very positive.

Social impacts: As forest restoration and management activities are implemented, there may be some social risks due to change of use rights. Social risks can be effectively avoided if the ROAM steps are followed during the forest restoration planning process at the municipal and county level and based on stakeholder consultation. As the scope of forest management plans preparation and implementation in the pilot forest is within the state forest, there is no boundary change. Therefore, by conducting risk screening, developing annual plans for risk management, and strengthening risk tracking and management in accordance with the principles and standards of the ESMS, this type of risk can be controlled at a low level, thus ensuring that the objectives of the management plan are achieved.

In general, the project should be of a relatively low environmental and social risk. However, according to IUCN's criteria for classifying the risk level of a project, since the total investment of the project is USD 642 million, which is more than USD 500,000, the risk level was temporarily classified as "Moderate Risk" at the time of the project's initiation. With the project implementation, if the environmental and social impacts are found to be relatively large, then the risk level will be adjusted upward. If the risk level is found to be high, in addition to set up an ESMS and manage and track the risk during project implementation, it is necessary to carry out an Environmental and Social Impact Assessment (ESIA) and implement an Indigenous Peoples Plan (IPP), etc. See the table below for the risk analysis conducted during project preparation and approval:

Table 2: Risks and Mitigation Measures During Project Preparation

Risks	Likelihood	Consequences	Classification	Mitigation Measure
1. Risks to the project				
Unforeseen natural	Possibly	Severity	High	Check that partner agencies and state forests have emergency preparedness and response

disasters (e.g. fire)				plans; Clarify management responsibilities; Apply advanced site selection and site preparation (e.g., ecosystem-based disaster risk reduction) tools to minimize disaster risk; Improve biodiversity and select tree species that mitigate disaster risks ; Identify high-risk areas and locate project activities away from locations where natural hazards are common; Increase fire suppression efforts (firefighting equipment and tools, fire suppression funding);
Pest/pathogen outbreaks	Possibly	Moderate	High	Improve monitoring skills; Strengthen scientific research and its application; Enhance mitigation measures (equipment and finance); Increase biodiversity;
Logging and smuggling of forest trees (in Jiangxi Province)	Almost certainly	Negligible	High	Review the relevant legislation and its implementation and make recommendations for improvement.
Encroachment or expropriation of forest land (in Jiangxi Province)	Almost certainly	Negligible	High	Review the relevant legislation and its implementation and make recommendations for improvement; A clear understanding that the project will not fund activities that may result in the expropriation of forest land;
Equipment that destroys the monitoring system	Unlikely	Comparatively small	Low	Take risks into account when setting up monitoring systems; Setting up more monitoring points to reduce risk;
Policy risks (from national level: e.g., reduction in number of projects/investments; logging quotas interfering with projects)	Possibly, even almost certainly.	Severe or even catastrophic	High or even extreme	Obtain support from the central government through the National Forestry Authority; Receive support from the provinces and municipalities; Develop and implement regulations for the management of state-owned forests to buffer changes brought about by external policy changes; Negotiate policy exemptions (e.g., logging quotas) for pilot projects in state-owned forests; Negotiate an increase in ecological compensation standards at the national,

				provincial and district levels; Centralized management of state-owned forests;
High turnover of staff and participants in state forest and county/municipal programs	Possibly	Moderate	Moderate	Ensure stability of state forest and county program staff; Train more people to minimize the impact of employee turnover; Plan for handovers and new hire/participant orientations;

III. Applications and Practices of ESMS

Since the beginning of the project implementation, especially in the past two years, the project has carried out ESMS-related work for the forest-oriented mountain-water-forest-farmland-lake-grass-sand plans and the preparation of the forest management plans for pilot farms. The implementation progress is summarized as follows:

A. Forest-Oriented Mountain-Water-Forest-Farmland-Lake-Grass-Sand Plans (FLR plans)

One of the core tasks of the project is to prepare FLR plans (hereinafter referred to as "plans") for Bijie City in Guizhou Province, Fengning County in Hebei Province and Xinfeng County in Jiangxi Province. During the preparation of the Plans, particular consideration was given to landscape-level ecological protection and restoration planning, and Forest Landscape Restoration Opportunities Assessment Methodology (ROAM) was utilized for the first time in China, with multi-stakeholder inputs and suggestions consolidated.

In accordance with IUCN's Forest Landscape Restoration Opportunities Assessment Methodology (ROAM), the preparation of forest-oriented mountain-water-forest-farmland-lake-grass-sand plans were carried out in one city and two counties in the project area. The ESMS Enhanced-ROAM process was applied in the planning with the following steps:

Step 1: Encourage participation of the key stakeholders. Through official documents, media publicity and distribution of project briefs, stakeholders were made fully aware of the objectives, scope, requirements and natural conditions of the project, and the relevant departments and units were encouraged to actively participate in the planning process of the project. During this period, the " Forest Landscape Restoration Opportunities Assessment Methodology (ROAM)" was translated and published, and the concepts, methods and guidelines of FLR were popularized**.**

Figure 4: Translated and published Forest Landscape Restoration Potential Assessment Methodology Guide (ROAM)

Step 2: Ensure that there are no major tenure disputes within the planning area. Planning activities do not involve changes in tenure or conversions and respect the interests of all stakeholders in the planning area.

Step 3: Conduct comprehensive socio-economic analysis. The socio-economic analysis process focused on the community's dependence on natural resources and incorporated the needs of the local economy and community development into the planning objectives.

Step 4: Co-develop the FLR Plans. Consultations and discussions were held with different stakeholders during the planning process, and more than 10 participatory planning workshops were organized, with 335 stakeholders attending.

Figure 5: Photo of the ROAM participatory planning training workshop

Step 5: Co-implement and update the FLR plan. The project has established a mechanism for multi-stakeholder collaboration as the basis for its implementation.

The forest-oriented mountain-water-forest-farmland-lake-grass-sand plans introduce the international cutting-edge Forest Landscape Restoration (FLR) concept, which is both a concrete practice of the FLR concept in China and a useful exploration of the concept of community of life in the pilot area. The preparation of the plan was innovative, exploratory, and challenging, but it embodies the spirit of China's practice in the field of landscape restoration. Through the effective participation of all stakeholders, the sense of ownership of the plan by all parties was enhanced, and a plan that is both scientifically logical and grounded was prepared.

The preparation process of this plan, through the implementation of the above ROAM steps, has focused on the principle of multi-stakeholder participation in terms of the ESMS principles, and has emphasized women's participation in the participatory process. The percentage of female participation in the project's comprehensive socio-economic assessment analysis and planning training workshops was higher than in other similar plans. About 350 women, or 25% of the total number of participants, attended the project planning training seminars.

B. Forest Management Plans for Pilot Farms

The innovative forest management plans incorporate the FLR concept with the goal of enhancing ecosystem services. The forest management plan is based on the traditional forest management plans, focusing on establishing the FLR concept and enhancing the ecosystem services of the forest management unit. The plan preparation process, compared with the conventional ones, is supported by detailed scientific background data; and in-depth socio-economic assessments were carried out in the seven pilot forest farms and a consultation mechanism with the community was established to identify the risks that may arise from the management activities. The needs of local communities and other stakeholders are taken into account in the setting of management plan’s objectives. Regarding the establishment of ESMS, the project has carried out the following work:

1. Community Socio-Economic Baseline Assessment

The pilot areas of this project are in three different hilly mountain ecosystem zones in North China, East China, and Southwest China, including seven pilot state forest farms, as shown in the table below:

Table 3: Location of pilot forest farms

Provinces	City	Ecological Zone	Pilot Forest Farm	County
Hebei	Chengde	Broad-leaved deciduous forest ecoregion in the mountains of North China; border area	Mulanweichang Forest Farm	Weichang Manzu-Mengguzu autonomous county

		between the fragile ecoregion of the agro-pastoral zone in the southeastern part of the Inner Mongolia Plateau	Grassland Forest Farm	Fengning Manzu autonomous county
			Huangtuliangzi Forest Farm	Pingquan County
Jiangxi	Ganzhou	Hills Agro-Ecological Region in South Central China	Jinpenshan Forest Farm	Xinfeng county
			Anzidong Forest Farm	Anyuan county
Guizhou	Bijie	Guangxi-Guizhou Karst Region Fragile Ecological Zone	Guihua Forest Farm	Zhijin county
			Gonglongping Forest Farm	Qixingguan district

In accordance with the project's Socio-Economic Impact Assessment Guidelines, the following activities were carried out to provide a more comprehensive picture of the socio-economic environment where each forest farm is located, to analyze potential environmental and social impacts, and to provide a basis for subsequent community and other stakeholder engagement strategy development and risk screening. The socio-economic assessment focused on:

- **Development of state forest farms:** including the management system, operation mechanism, forest resources, improvement of people's livelihood and industrial development of state-owned forest farms.

- **Community participation:** understand the participation of communities around the project pilot farms and forestry production and management activities, including the type of participation, the number of participating households, and the approach and frequency of participation.

- **Farm-community relationships:** understand relationships between state forest farms and communities, mainly in terms of forest land tenure and natural resource utilization, including tenure conflicts, land/natural resource utilization conflicts, livelihood dependence and restrictions, mitigation/resolution of conflicts and mechanisms for resolving them; and cooperation in natural resource protection and utilization, mechanisms for cooperating, and effectiveness.

- **Community development:** monitor the impact of state forest farms on the development of surrounding communities, including demonstration of community employment and income generation, community culture, landscape restoration (ecological construction and protection), changes in forest rights, protection of the rights and interests of forest farmers, socialized services, and integration with national strategies.

- **Gender equality:** understand the gender equality status of state forest farms and neighboring communities, including the percentage of female workers in state forest farms, the positions and percentage of female workers, the average salary of

female workers and its comparison with the average salary of male workers, the supportive role of females in the operation of state forest farms, the percentage of females involved in community participation, and the supportive role of females in the development of forest areas, and so on.

- **Awareness and capacity development:** understand the role of state forest farms in the comprehensive awareness and capacity development of the neighboring communities. The areas covered by these awareness and capacity enhancement include livelihood production, ecological protection, forest management, land use, communication and participation, and community governance.

2. Community Participation and Stakeholder Engagement Strategies

Through the analysis of the socio-economic assessment data, and based on the ESMS principles, the project team developed appropriate engagement strategies for community and key stakeholder engagement for each pilot farm separately. See figure below:

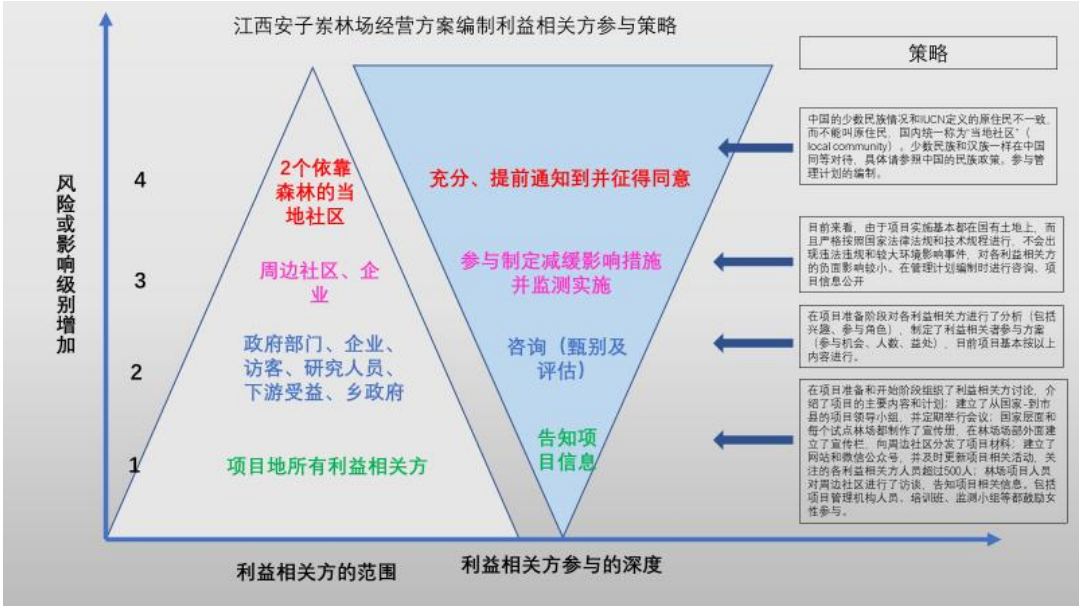


Figure 6: Stakeholder Engagement Strategy Diagram for the Forest Management Plans

According to the project focus and the risk screening report during the project design, the risks of the project are mainly on the pilot state forest farms, especially the preparation and implementation of the forest management plan in the pilot farms. Therefore, the main target of the project risk screening and the development of the management plan are centered on the state forest farms and their neighboring communities.

C. Risk Screening Tools

The environmental and social risk screening of the ESMS is a risk screening exercise based on the project activities designed for each forest farms after the preparation of forest management plans. The risk screening tools is the IUCN Environmental and Social Risk Screening Form (ESRF). The form integrates the eight ESMS principles and four ESMS standards into a semi-structured outline for assessment interviews, according to which the screening is carried out on a case-by-case basis.

The screening form was designed with four sections: A. Project Summary; B. Social and Environmental Impact Assessment; C. Standard-Related Impacts and D. Implementation of ESMS Principles. Each section consists of 5 to 36 questions. See the Environmental and Social Risk Screening Question Structure Table below:

Table 4: Environmental and Social Risk Screening Question Structure Table

Sections	List of Semi-Structural Questions
A. Summary of project activities	Types of forest management activities, scope, characteristics, etc.
B. Social and Environmental Risk Identification	B1 Negative impacts related to gender equality B2 Risks affecting vulnerable groups B3 Risk of injury to persons B4 Risks to community health, safety and security B5 Risks affecting labor and working conditions of project staff B6 Resource efficiency, pollution, waste, chemicals and greenhouse gas emissions B7 Environmental or social risks in the context of climate change B8 Other environmental or social risks
C Standards-related risks	C1 Implications of involuntary migration and access restriction criteria C2 Implications of Indigenous Peoples Criteria C3 Implications of cultural heritage standards C4 Implications of biodiversity conservation and sustainable use of natural resources criteria
D Issues related to the implementation of the ESMS principles	D1 Whether a stakeholder analysis is conducted D2 Whether a disparity analysis of vulnerable groups, by gender and class, has been conducted D3 Whether stakeholder consultations were conducted D4 Whether vulnerable groups or individuals have been consulted D5 Whether equal opportunities are provided for men and women to participate in activities and decision-making D6 Is information on gender analysis and assessments available for

	gender-responsive design, implementation, monitoring and evaluation? D7 Explain how to improve gender equality and women's empowerment D8 Explain how to provide opportunities for people with disabilities to participate in projects and benefit from them D9 Explain how the interests of rights-holders are implemented D10 Explain the project's compliance with national laws and regulations

D. Screening steps

1. Training on screening forms. Conduct ESMS training for farm staff, including concepts, principles, and standardized methods.

Figure 7: ESMS online and offline training

2. Set up a screening team at the forest farm consisting of farm leaders, technical staff in charge of forestry management, and community liaison staff to carry out the screening in the form of group discussions.

Figure 8: Risk Screening Group Discussion

3. Describe and analyze the impacts on stakeholders of planned project activities in the management plan and document them.

4. Discuss and evaluate each item according to the screening form.

5. Complete the ESMS risk screening form based on the results of the discussion (see Annex 1: ESMS risk screening form for pilot forest farm)

E. Risk Management Plan Development

The project plan managers should receive the screening risk analysis and the corresponding risks and countermeasures are integrated into the overall project implementation and monitoring plan to form an ESMS management report. Based on the ESMS screening form, an annual plan ESMP for the corresponding risk management for the screened risks is developed (see Annex 2: Annual Plan Form for Risk Management in the Pilot Forest Farms).

Through the initial practice during late 2021 and early 2022, each forest farm has conducted a comprehensive screening of the activities of the innovative forest management plan and has basically mastered the practical application of the eight ESMS principles and four ESMS standards. From 2021 onwards, each pilot forest farm has established an ESMS system that will screen the activities in the management plan once a year to identify new risks and update the annual risk management plan (ESMP) and risk tracking form. This system makes it possible to track the impact of environmental and social risks on the implementation of the innovative forest management plan to a low level and to ensure that no major environmental and social risk events occur.

In the process of preparing the forest management plan for pilot forest farms, the principles and standards for the ESMS implementation are summarized as follows:

among the eight principles, the principle of “Free, Prior and Informed Consent” (FPIC) is easy to be simplified. A single policy document or notification is often used as a form of implementation of this principle. The implementation of this principle should be based on specific activities, through systematic communication and exchanges with specific stakeholders, and finally reach a real consensus. Therefore, the implementation of this principle often involves the use of a range of Participatory Rural Appraisal (PRA) tools, including community meetings, to demonstrate the compliance with the FPIC principle. This process is also more time-consuming and can often be weeks to months or more.

Regarding the rights and interests in natural resources in implementing “Principle on Taking a Rights-based Approach”, the use right, income right and disposal rights should also be considered in the community assessment, in addition to ownership. It includes not only material, but also cultural and spiritual rights and interests, as well as traditional and practical rights and interests. Only when communication and exchange with the community or other stakeholders is based on a clear understanding of these rights and interests and a consensus is reached can it be demonstrated that the planning and implementation of the project reflects respect for the "rights-based" principle. The use of screening forms is currently plagued by insufficient contextualization after translation. Users are prone to greater ambiguity in understanding the questions, which directly affects the quality of the screening, and thus the implementation of the ESMS standards. After one year of application, full contextualized modifications are required based on feedback. Currently, one such screening activity was completed at the farm managers’ level. Additionally, there are 1-2 management staff in each forest farm with a basic understanding of ESMS principles and standards, which lays the foundation for the next step of ESMS contextualization.

Regarding the preparation of forest management plans, the implementation of the eight ESMS principles and standards in the planning process is the most effective way to demonstrate the application of innovative concepts, methods, and the mechanisms in the forest management plan in addition to the application of innovative concepts such as the landscape ecology theory. A forest management plan that includes these new concepts, methods and mechanisms is the only way to demonstrate the essence of the forest governance in forest management agencies.

1. Development of Environmental and Social Risk Management Guideline for State Forest Farms

After two years of practice, the Environmental and Social Risk Management Guidance for State Forest Farms was compiled from the introduction of the IUCN ESMS Manual, through translation, continuous training and practice, and contextualization.

The guide provides a systematic description of environmental and social risks in

terms of concepts, scope, management principles and standard, management steps and operational key points for reference and use by state forest managers or other forms of forest management agencies.

The contextualization in the Guidance includes:

1. The wild harvesting is prevalent in state forest farms, and the problem is easy to identify. However, there is no specific information on how to address the sustainability of wild harvesting in the IUCN guidelines. Therefore, we have added "fair trade" to the contextualized guideline so that state-owned forest farms can manage wild harvesting from environmental, social, economic and biodiversity perspectives, and promote the sustainable use of forest resources.
2. State-owned forest farms always encounter some environmental problems in the management process, for example, small-scale infrastructure construction, localized soil erosion during afforestation, use of biological and chemical agents for pest management, use of fertilizers for understory planting, and the disposal from forestry worker and tourists. To address these problems, "Pest Management Guidelines" have been added to the Guideline.
3. There is no systematic information collection and analysis regarding socio-economic assessment and stakeholder analysis for the state forest farms. As environmental and social risk management is based on socio-economic information and stakeholder analysis, the more specific “Stakeholder Engagement Guidance” and “Socio-Economic Assessment Guidance” have been added for the use of readers.

IV. ESMS Practical Examples

After nearly two years of practice, each forest farm has orderly promoted the work of ESMS and explored and practiced in environmental and social management. The practice cases are summarized in the following table:

Table 5: Summary of ESMS cases

Case Name	Name of State Forest Farm	Principle Followed	Standard Application	Major Group
1. Sustainable rotational grazing in Caoyuan State Forest Farm	Caoyuan State Forest Farm of Fengning County in Hebei Province	Establishment of the ESMS system; Free, Prior and Informed Consent; Stakeholder Engagement;	Indigenous Peoples Standard; Access Restrictions Standard; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	Ethnical minority herders with grazing needs in state forest areas around forest farms
2. Farms and villages to share the benefits of forest conservation and restoration	Anzidong State Forest Farm in Jiangxi Province	Stakeholder Engagement; Consultations with Vulnerable groups; Free, Prior and Informed Consent;	Access Restrictions Standard; Biodiversity criteria; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	Communities with land tenure disputes; communities neighboring the forest farm areas
3. Enhancing local people's sense of ownership and access - the practice of establishing innovative forest management objectives	Guihua Sate Forest Farm of Zhijin County in Guizhou Province	Analysis of vulnerable groups; Providing opportunities for women's participation	Indigenous Peoples Standard; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	Women's Working Groups in Communities Neighboring Forest Farm
4. Protecting water sources together to ensure safe drinking water - strengthening water source conservation in forest	Gonglongping Sate Forest Farm in Qixingguan District in Guizhou	Stakeholder Analysis; Opportunities for stakeholder participation in design and	Indigenous Peoples Standard; Access Restrictions	Towns and communities that depend on forested water sources for their livelihoods

management.	Province	decision-making; Stakeholder participation in design and monitoring;	Standard; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	
5. Supporting sustainable resource utilization by communities - Considering the choice of tree species for community livelihoods in forest management plans	Huangtuliangzi State Forest Farm of Pingquan City in Hebei Province	Stakeholder Analysis; Analysis of vulnerable groups; Providing opportunities for women's participation	Indigenous Peoples Standard; Access Restrictions Standard; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	Women worker's groups and enterprises in edible mushroom production around the forest farm
6. Implementing close-to-nature forest management measures to ensure biodiversity enhancement and community livelihood needs - close-to-nature forest management	Mulan State Forest Farm in Hebei Province	Stakeholder Analysis; Analysis of vulnerable groups; Provide opportunities for women to participate; Health and safety of employees and workers	Indigenous Peoples Standard; Access Restrictions Standard; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	Farmers practicing wild-harvesting in neighboring community and farmers with winter wood-burning demand, and farmers with cattle
7. Enforcement of the strictest logging standards - a practical case for ensuring the safety of logging workers	Jinpenshan State Forest Farm in Jiangxi Province	Enforcement of the strictest logging safety; Standard Vulnerable Group Analysis; Provide opportunities for women to participate; Health and safety of employees and workers	Indigenous Peoples Standard; Access Restrictions Standard; Biodiversity Conservation and Sustainable Use of Natural Resources Standard;	Forestry workers; Community groups of women harvesting mushrooms, herbs and wild vegetables

A. Practices of Environmental and Social Management Contributing to Achieve Forest Management Objectives - Sustainable Rotational Grazing in Caoyuan Forest Farm

1. Distribution of forests and grasslands

The total area of Caoyuan Forest Farm is 8,685.81ha, and the total area of forest land is 5,447.67ha, accounting for 62.72% of the total area, of which: arboreal forest, open forest and special dwarf forest account for 34.35%, 7.32% and 6.78% of the total farm area respectively. Among the non-forest land, the pastureland area is the largest 2699.86ha, accounting for 31.08% of the total farm area; the area of cultivated land is 279.2ha, accounting for 3.21% of the total farm area; the water area is 238.77ha, accounting for 2.75% of the total farm area. The current land use status of each township in Caoyuan Forest Farm is detailed in the table below.

Table 6: Current land use status in Caoyuan forest farm

Area: ha

Villages	Forest Land							Non-Forest Land					Total
	Arboreal Forest	Open Forest	Special Dwarf Forest	Young Forest	Supplementary Forest	Unproductive Land	Failed Land	Transport Infrastructure	Settlements and Industrial and Mining Sites	Water Area	Farmland	Pasture	
Caoyuan Village	265.78	4.67	37.86	8.79		31.49	43.77	0.72		12.94	216.73	152.5	775.25
Waigoumen Village	2540.58	630.12	521.21	85.41	6.36	1055.67		13.03	6.55	225.83	56.76	2459.0	7600.53
Wanshengyong Village	176.93	0.74	30.2			8.09					5.71	88.36	310.03
Total	2983.29	635.53	589.27	94.2	6.36	1095.25	43.77	13.75	6.55	238.77	279.2	2699.86	8685.81

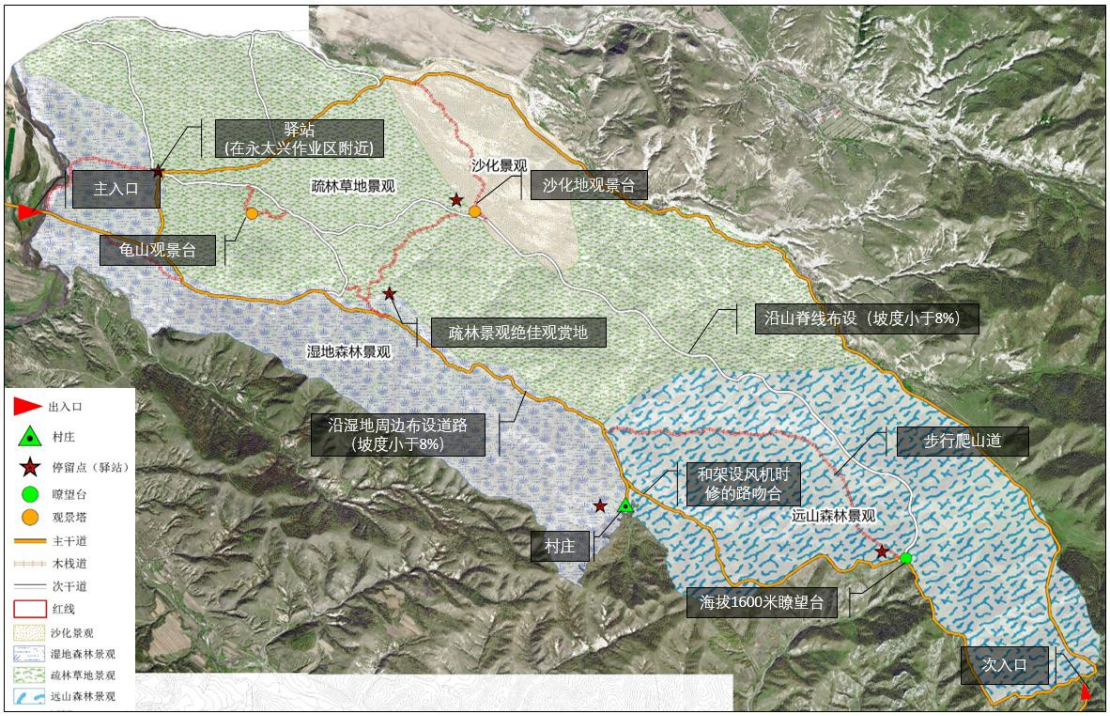


Figure 9: Distribution of Degraded Land and Open Forest Land

Figure 10: Open Forest Landscape

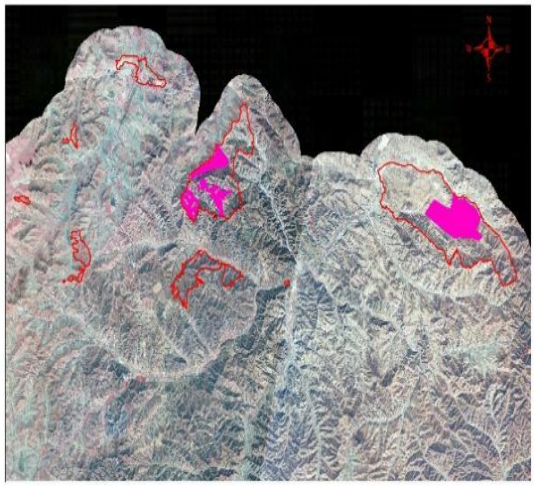
2. Potential risks identified by screening

Using information from the initial project preparation and socio-economic assessment, designed activities in the innovative forest management plan were analyzed one by one using the ESMS screening form. The finding suggests that the

local community livelihood activity of grazing is more dependent on the open forests and grasslands. According to the ESMS principles and standards, free grazing in forest areas is one of the risks affecting the achievement of the management plan objectives due to historical reasons. If the grazing activities were completely banned, it would lead to some impacts on the livelihood activities of pastoralists.

3. Community Consultations

In accordance with the ESMS principles and standards, the forest farm conducted an in-depth assessment of the community's grazing activities. Based on the available resources and the grazing intensity, a proposal for rotational grazing was made to the community. As shown in the figure below:

<table>
<tr>
<td> 
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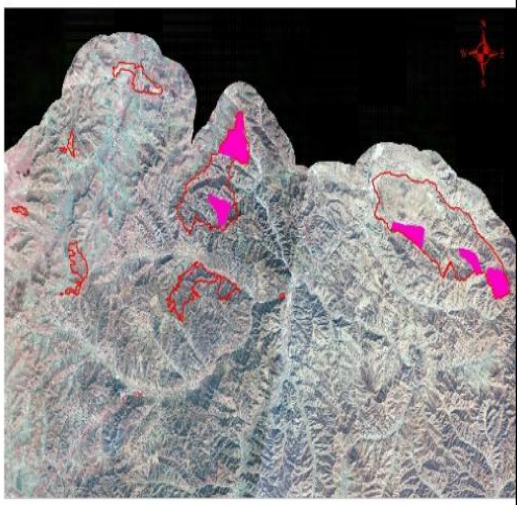
<td> 
</td>
</tr>
<tr>
<td>Areas within the red line are the planned grazing rotation areas in 2019; the pink areas are the actual rotational grazing areas in 2019</td>
<td>✓ Areas within the red line are the planned grazing rotation areas in 2020
✓ The pink areas are the actual rotational grazing areas in 2020</td>
</tr>
</table>

Figure 11: Rotational Grazing Areas

In accordance with the principle of “Free, Prior, and Informed Consent (FPIC)”, a consensus was reached on the arrangement of rotational grazing activities based on thorough exchanges with the community, and a co-management agreement on fire prevention and forest protection was signed.

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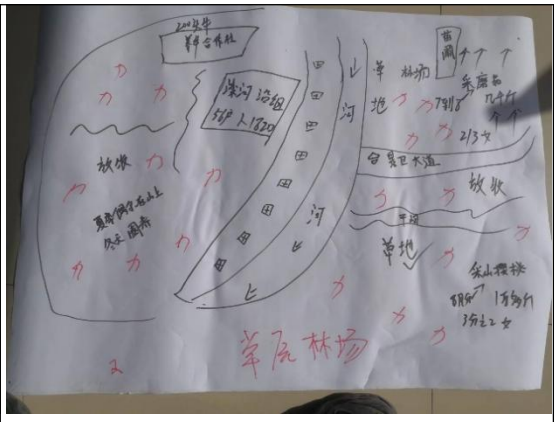
<tr><td>  </td><td>  </td></tr>
<tr><td>The ESMS coordinator of Caoyuan Forest Farm went into the community to interview pastoralists and discuss the feasibility of rotational grazing. An assessment of the community's natural resources and livelihoods provided an understanding of the historical reasoning for the community's livelihoods and the current status of natural resource utilization. The communities were carefully consulted on the open forest grazing management.</td><td>Community interviews were conducted to understand the natural resources utilization in the communities around the forest farm:
Using pastures in the forest farm for grazing is one of the important sources of community livelihoods and is mostly undertaken by men.
Each household has at least one member who receives a more stable income from participating in nursery, forest plantation and its management.
Wild mushrooms and mountain cherries are collected during July to August each year as seasonal income. Two-thirds are wild harvesting by women in the community.</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Consultation meetings with representatives of pastoralist communities</td><td>Signing of rotational grazing agreements</td></tr>
</table>

Figure 12: Community Consultation and Reaching Consensus

Agreement Document for 2019	Agreement Document for 2020

Figure 13: Co-Management Agreement

	
Rotational pastoral landscapes	Patrol inspection checks

Figure 14: Rotational Grazing and Inspections Checks

Along with the maturation of animal husbandry farming and the continuous improvement of ecological recreation, Caoyaun Forest Farm will become the core zone of grassland excursion in the suburbs of Beijing, which can be used for animal husbandry cultural experiential activities based on the actual conditions, including herding simulation, horseback riding in the grassland and handmade roasting goat, etc. All these services are provided by the pastoralists to make promising incomes.

The forest farm will also evaluate the effectiveness of rotational grazing on an annual basis and continue to improve the rotational grazing system. It is believed that through the project, the implementation of the forest management plan in Caoyuan Forest Farm will fully demonstrate the compliance to the ESMS principles and standards.

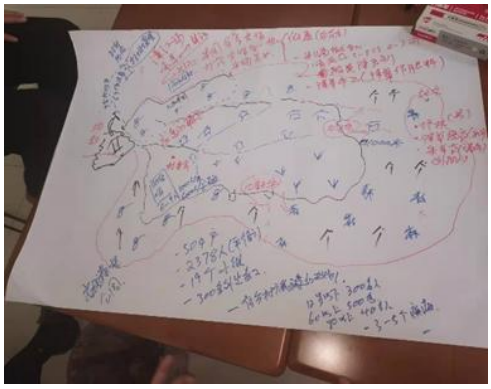
This case provides a comprehensive demonstration of how the principles of FPIC and right-based approach have been applied under the involuntary migration and restricted access standard. The case shows that the forest management staff respected the traditional forms of natural resource utilization and entitlements, prepared appropriate maps to provide sufficient information to the community, consulted with community representatives through meetings before making decisions, and finally reached a consensus to form an agreement, and strengthened monitoring and evaluation during implementation. Regarding the project cycle management, the above information provides an important basis for the update and adaptive management of the innovative forest management plan.

B. Farm-Village Joint Construction and Sharing the Benefits of Forest Conservation and Restoration - Practice from Anzidong Forest Farm

In 2021, Anzidong Forest Farm started to be the focal point for Guanxi Village to help "rural revitalization." And in 2022, the farm started to carry out the "Farm-Village Joint Construction and Integrated Development" activities with Guanxi Village, in which the village committee integrates the village collectives and farmers' forest land and cooperates with the forest farm according to the mode of "forest farm + village collectives", "forest farm + farmers", and "forest farm + village collectives + farmers". 60% of the management revenue is distributed to the forest farm, and the rest 40% to the village collectives and farmers. The distribution to village collectives proceeds by issuing "forest tickets" to the farmers as shareholders, so that the farmers can benefit.

Guanxi Village has 3650 mu of collective forest land, and farmers retained 8000 mu of forest land. The farm set up a special “Farm-Village Joint Construction and Integrated Development” office at the village committee, using the resources from the village and farmers and capital, talent, technology, and management advantages from the forest farm. The farm planed the forest land and its operation and management scientifically in the village according to the principle of “prioritizing ecology and green development." And it changed the "scattered, chaotic, poor" status quo due to the lack of management in the village forest. The main activity of the forest farm's plan is to implement “farm-village joint construction”, including 2,000 mu of off-site afforestation, 1,000 mu of large diameter timber cultivation, 1,000 mu of bamboo cultivation, 1,000 mu of renovation for low-quality and low-efficiency forest, 1,000 mu of forest tourism recreational areas, 1,000 mu of non-timber forest-based planting, 100 mu of oil tea seedling cultivation, and 200 mu of abandoned orchards ecological restoration.

The forest socio-economic information monitors went to communities that wish to participate and conducted community assessments using participatory tools.



Semi-structured interview outline	Key messages reflected in the resource map:
• Population and distribution of farm households • Land use conditions • Distribution of water systems and water sources • Distribution of houses • Boundary with the forest farm • Scope of community activities • Community livelihood strategies • Key forest management measures • Non-timber forest-based collection activities • Status of women's activities in forest areas • Requirements for farm-village co-construction • Roads for forest patrolling	1. Women account for more than 30% of the cut and forest clearance measures; 2. NTFP collection is dominated by women and contributes significantly to household income in the village 3. High level of women's participation in orchard management (weeding, pest control, fruit harvesting, etc.) 4. Forestry technicians provide regular guidance on safe application, weeding, pruning, etc. 5. The forest has no substantial restrictions on access to the forest by community farmers, and farmers are aware of the extent of the forest. 6. Feral pigs and snakes are common and require environmental management guidelines to regulate behavior. 7. Rangers often use motorcycles, and there is a need for a safety code for the higher risk of patrolling during the storm season. 8. Intertwined boundaries of state and collective forests 9. The joint construction of farm and villages is conducive to "setting aside disputes" for joint development.

Figure 15: Utilization of PRA Community Assessment Tool

Community assessments have confirmed the willingness of the community to participate in the farms-villages co-development, forest land to be used, and community capacity to provide the labor needed. Especially, women in the community have high expectations on working close home. The joint construction is conducive to address the historical disputes over forest rights and boundaries issues, so as to achieve common development by "setting aside disputes". It fully demonstrates that in forest management, the forest farm pays attention to the development needs of vulnerable groups, and ensures the community's right to information, decision-making and benefit when making major decisions. The farm-village co-construction is conducive to the overall forest landscape restoration, to improve biodiversity restoration quality at the landscape scale, and to increase the connectivity.

This case illustrates how forest managers have implemented the principles of "needs of vulnerable groups" and "gender equality and women's empowerment" under the “Biodiversity Conservation and Sustainable Use of Natural Resources” Standard. To this end, the forest managers used the Participatory Community Assessment (PRA) tools to conduct an in-depth community assessment, and through interviews with the women in the community, it shows that women in the community have invested more time in natural resource utilization in multiple ways. Therefore, the management plan will provide space through spatial planning for community with

interests to achieve the joint development.

Once the demonstration sites were constructed, the ecological and economic benefits of the forest land will be enhanced comprehensively, at the same time, the overall development of the forest farm will be enriched, which further lead to the active participation of neighboring farmers, increase their own income and the collective income of the village, and contributing to the rural revitalization.

The staff of Anzidong Forest Farm called for a meeting of the two committees with village group representatives of Guanxi Village for "off-site collaborative afforestation".

Anzidong Forest Farm and village committees formally signed an off-site afforestation contract with an area of 4,474.11 mu.

	
Field Visits	**Cultivate high-quality oil tea seedlings**
	
Camellia sinensis plantation	**Oil tea afforestation sites and soil erosion prevention measures**

Figure 16: Examples of Farm-Village Joint Development

C. Enhancing Local People's Sense of Ownership and Access – Practice of Establishing Innovative Forest Management objectives in Guihua Forest farm

1. Problem Formulation

Machang Area and Luoluoping Area in Guihua Forest Farm locate at the south of Zhijin County, with an average distance of less than 5 km from the county and the S209 provincial highway at the intervening. With convenient transportation, the conditions are superior for developing forest recreation and tourism. Thus, there is a clear demand for the further construction of two areas to create ecological forest recreation for over 200,000 residents in Zhijin County. In addition, it is the inherent

needs for developing the forest farm itself to improve the service function and value of forest resources, develop and use existing forests and forestry land resources rationally, continue to explore and develop multi-functional forest management pattern. As the overall material and cultural living standard is ever-growing, there are higher requirements for forest recreation and leisure. Guihua Forest Farm is adjacent to the county with good and sufficient forest and forest land resources, which forms a good basis further development. However, there is mainly monotonous coniferous forest without many landscapes for sightseeing, which cannot meet the recreation and leisure demand. Additionally, due to the insufficient capacity, people in the neighboring communities cannot benefit from the outcomes of forest management.

2. Main Management Objective

From the analysis of the farm location, available forest resources and management needs, the main objective of forest management in Guihua State Forest Farm is to build the capacity for forest recreation and leisure, mainly improving from the following aspects:

- ✓ Increase the number of visitors for forest recreation from the current 10,000 to 50,000 per year.
- ✓ renovate 565.6186 hectares of recreational forests and increased the area of standardized recreational forests from the current 451.6936 hectares to 1017.3122 hectares.
- ✓ Build 88.8 kms of new roads for tourists in recreation areas, including 58.2 kms of new roads and 30.6 kms of walking trails.

The forest recreation and leisure areas cover the entire area of the former Guihua Forest Park, which is close to the county and has excellent natural climate, soil, and other conditions. The main vegetation is coniferous pure forest, coniferous and broad-leaved mixed forest, evergreen and broad-leaved mixed forest, deciduous and broad-leaved mixed forest, etc. During the management cycle, the forest stand was gradually transformed with more colorful and polyphenolic tree species to meet the sightseeing requirements. There are more accessible facilities constructed and the recreational conditions of the forest was rapidly improved. The improvement of recreation capacity can provide good employment opportunities for people in the neighboring communities and improve their sense of ownership and pride of the forest management outcomes.

With an in-depth socio-economic assessment, the forest restoration and management objectives were established with reference to the ESMS principles and standards and consultation with stakeholders and communities as follow:

Table 7: Objectives and Outcome Indicators of the Forest Management Plan in Guihua Forest Farm

Objective	Indicator	Unit (of	Status Quo	Early Phase	Later Phase

		measurement)		2021-2025	2026-2030
Capacity building for forest recreation and leisure	Annual forest recreation visits	Ten thousand people	1	3	5
	Area of recreational forests	hectares	451.6936	852.8595	1017.3122
	Roads in recreation area	kilometers	62.2	91.3	120.4
	Forest walking trails	kilometers	0	15.3	30.6
Water conservation capacity	Conserved water	Cubic meters per hectare per year	73.7	82.8	86.5
	Proportion of mixed forests	%	44.2	54.8	65.4
	Area of stands with reasonable level of cover	hectares	1396.5407	1818.1101	2248.1235
Soil and water conservation capacity	Quantity of soil and water conserved	Tons/ha per year	12.6	13.4	13.9
	Percentage of compound forests	%	4.3	18.6	49.7
Other goals	Conservation of special plantation communities	hectares	108.9569	108.9569	108.9569
	Total standing tree stock	cubic meter (unit of volume)	325482.92	378676.71	431870.5
	Volume per unit area	cubic meter (unit of volume)	129.9	137.2	156.5
	Forest area	hectares	2577.3846	2832.1798	2832.1798
	Forest land area	hectares	2922.508	2922.508	2922.508
	Forest cover	%	86.87	95.46	95.46

As can be seen from the management objectives and chosen outcome indicators, the forest farm considered the needs of local development based on forest restoration and left room for neighboring communities to access the forest for the sustainable natural resource utilization. From the table, these management objectives cannot be achieved by the forest farm alone but requires the joint efforts of many stakeholders. In terms of sharing the forest management benefits, local governments, nearby residents, neighboring communities, tourists, small business owners, etc. can all benefit in addition to the forest managers as direct beneficiaries. Especially, there will be many stable employment opportunities from the recreation and leisure industry and the precise forest landscape management. For example, the Guihua Forest farm, in collaboration with the Wumeng Limin Eco-Agriculture Company, has used about 7,000 mu of forest land to build an eco-tea plantation and carry out

nature-experiencing activities in accordance with the objectives of the New Forest Management Program, which provides diversified opportunities for the employment of disadvantaged groups, such as women in the community.

	
Overview of the ecological tea plantation	To maintain soil and water, no herbicides are used, the turf of the ridges is preserved, and weed shrubs affecting the growth of tea trees are removed by hand and planted with trees.
	
To ensure the biodiversity of the tea plantation, distant isolation zones of native vegetation have been preserved	According to the green food standards and under the guidance of professional organizations, tea gardens use bio-pesticides and are operated by trained staff in strict accordance with the protocols.

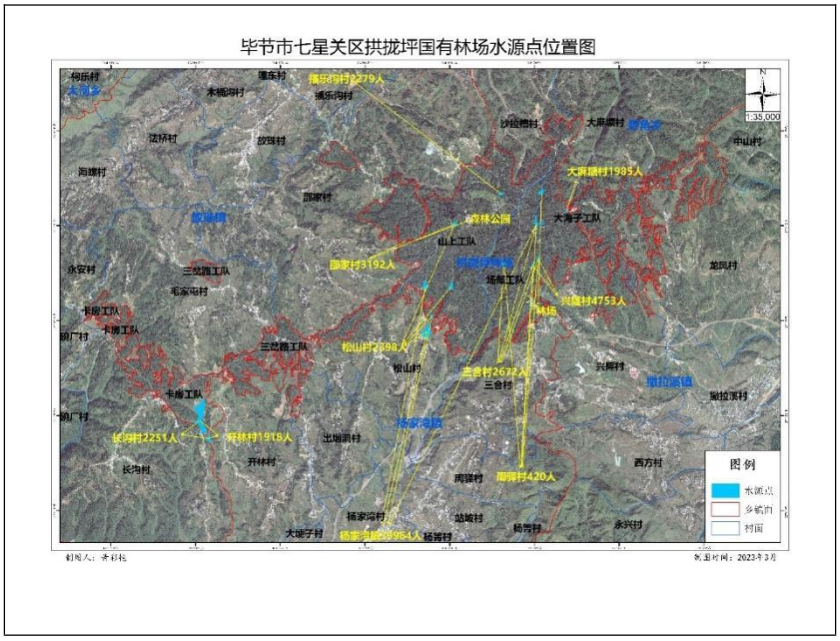
Figure 17: Construction of Ecological Tea Plantation in Guihua Forest Farm

In this case, the forest managers set up the goals and targets for the management

plan based on the "Indigenous Peoples' standard" and the “Biodiversity Conservation and Sustainable Use of Natural Resources” Standard, and in accordance with the principle of stakeholder participation, through multi-stakeholder consultations, and considering the demands of the local community and other stakeholders. The management plan also includes opportunities for local communities to participate in the workforce. According to the assessment statistics, currently there are around 3,500 people from the nearby community picking tea leaves at a daily basis at the 7,000 mu of eco-tea plantations during the annual harvesting season from March to May. Each of them can pick 8 kgs of fresh tea per day at a price of CNY 50 per kg. The daily salary is CNY 150-180. More than 90% of the tea picking laborers are women, of which 45-65 years old are the majority, and those over 65 years old account for 30%. From this point of view, the social benefits of the ecological tea plantation are enormous, especially for women in the neighboring communities to receive a relatively stable income.

D. Protecting Water Sources Together to Ensure Safe Drinking Water - Strengthening Water Source Conservation in Forest Management in Gonglongping Forest Farm

During the environmental and social risk screening of Gonglongping Forest Farm, the socio-economic monitors found that the community is very dependent on the water sources in the forest area, and that the local farmers are not too interested in accessing the forest area for wild harvesting, while they are very aware of the water sources. The monitoring team then mapped the water sources and utilization within the forest area and found that the local community's need for water in the forest area came first, with very little other forms of resource utilization. See the map of water utilization analysis in the forest area below.



The two maps above reflect the fact that there are as many as 12 water sources in the two areas within the forest management area, providing quality drinking water to approximately 50,000 to 80,000 people in neighboring communities and towns. Although there has been essentially no effective rainfall since the winter of 2022 to March of 2023, the water sources in the forest area remain adequate to meet the needs of the communities. It is understood that the water source in the forest area is the only water source for the nearby townships and communities, and it is highly unlikely that water can be diverted from elsewhere.

Figure 18: Water source points and neighboring communities in Gonglongping Forest Farm

Through further community visits, it was found that the community has a high awareness of the forests and water sources conservation. They believe that forest in the farm is necessary for water conservation, and the community has traditionally organized itself to conserve water source in the forest and to maintain and manage water supply facilities.

Through interviews with the villagers, the community wants the forests in the forest farms to be protected so that they can have enough high-quality drinking water.

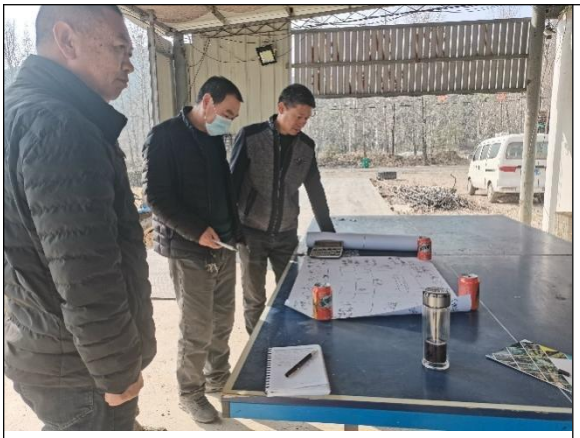
Figure 19: Water Point at Gonglongping and Community Interviews

Through environmental and social risk screening and consultation with the community, water source conservation has been taken as one of the special goals of forest management in the innovative forest management plan: the farm is located in the basin of the Yunchong River, the main stream of the Wujiang River, and its ecological location is very essential as an important water source conservation area. Thus, the management of water-source conservation forests has also been taken as one of the special objectives of forest management in the current managerial period. In terms of management measures, the major activities for the forests at each water source and its waterlogged area are mainly protective and restorative with less disruptions. Also, there is no ecological planting and chemical control of tree pests and diseases in the forest farm. In terms of management and maintenance, the farm works with communities for water sources patrols and monitoring, while encouraging them to carry out activities to reduce water losses and practice conservation.

This case demonstrates that the managers of Gonglongping Forest Farm have implemented the ESMS "Principle of Stakeholder Participation" in forest management. By respecting the will of the community, making water conservation a special objective of forest management, and adopting a collaborative approach with the community, the possible negative impacts on water resources and social impacts of forest management have been minimized, thus providing a good practice for sustainable forest management.

E. Supporting Sustainable Resource Utilization by Communities - Huangtuliangzi Forest Farm Considers the Choice of Tree Species for Community Livelihoods in Forest Management Plans

Through the community assessment, there are three urgent needs for forest resources as the top priorities: firstly, as fuelwood for winter heating; secondly, as fungi wood for the edible mushroom plantation; thirdly, collecting pine needles and fallen leaves for livestock enclosure gaskets and high-quality farm fertilizer; as well as collecting wild mushrooms etc.

	
Socio-economic monitors conducting resource utilization assessments in communities	Stakeholder assessment conducted by socio-economic monitors, pictured here, interviewing community business leaders about the production of biomass pellets from discarded sticks (bags) for renewable energy supply after the production of edible mushrooms
	
Fuelwood collection and processing yardage in the community is mostly carried out by women.	Forest harvesting and restoration residues are the main fuel used by communities to heat their homes in winter.
	

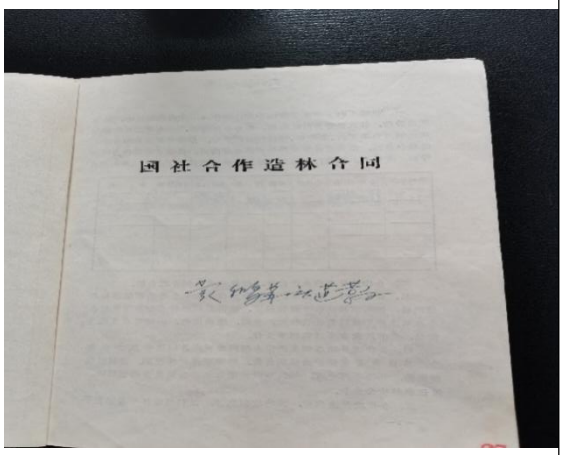
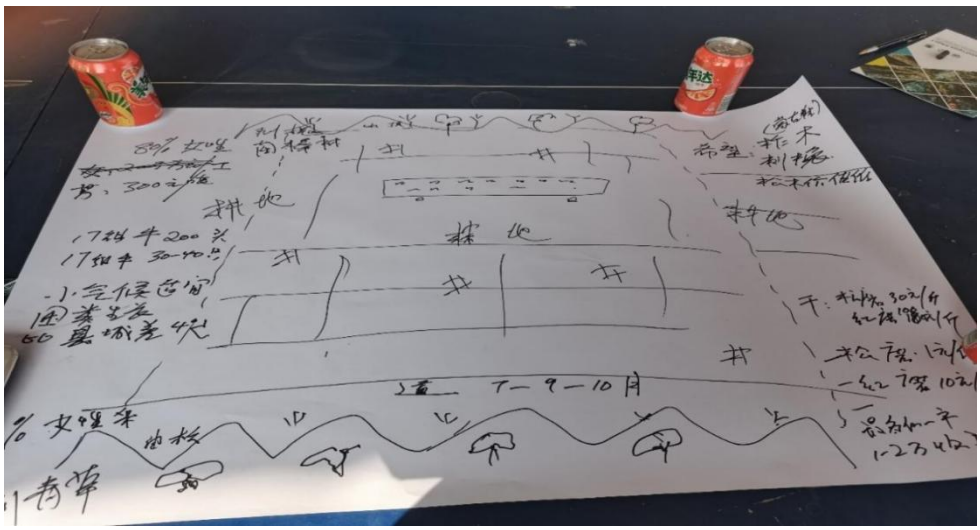
Farmers get harvesting and nurturing residues from the forest area, and pine needles can be gasketed.	Every year, farmers rake dead pine needles from the forest floor for gaskets to ensure the health of livestock, while obtaining high quality farm fertilizer and reducing the risk of fire.
	
The production of edible mushrooms requires large quantities of Mongolian oak as raw material.	Using seasonal calendar to obtain information on the distribution of labor among farm households and by gender
	
State-Community cooperative forestation is a form of land use in forest plantations	High-standard acacia scion seedling nursery

Figure 20: Community Assessment in Huangtuliangzi Forest Farm

Findings:

- ✓ The male laborers in the community basically work outside the home for long periods of time, with some returning briefly during the agricultural season.
- ✓ Women are largely prevented from leaving their villages throughout the year, with the busiest period being from May to September.
- ✓ Most of the labor inputs are used in livelihood activities related to forest resource utilization, and therefore forest management activities and policy changes have a significant impact on this group, which in turn affects the consolidation of development outcomes.

Figure 21: Gender-Specific Labor Distribution Table for Communities around Huangtuliangzi Forest Farm



Findings:

- ✓ The community is a farmer-cluster village and it's surrounded by farmland, mainly planted with corn. It's part of the river valley.
- ✓ The remote mountains are within the range of the forest farm, of which 40% are state forest and 60% are the state-community cooperative forest.
- ✓ 80% of the cattle and goats feeding is carried out by women due to the need to travel to distant mountain forests to cut grass and pick pine needles.
- ✓ Due to the favorable climate for mushroom planting, there are 4-5 larger mushroom producers in the village, which encourage women from the community to work in mushroom production. Normally, male laborers are paid CNY 300 per day and female laborers are paid CNY 200 per day.
- ✓ Wild mushrooms are collected from July to October, mainly by women in the mountains. At most, a household can make CNY 10,000-20,000 per year.
- ✓ In the past, the mushroom spawns are mainly acacia trees, and 80% are collected by local women. Recently, due to changes in edible fungus varieties, Mongolian oak (locally known as Quercus serrata) is mainly used. Currently, there is not yet a large number of Mongolian oak available in the forest farm, and the main source is still importing.
- ✓ Community demand for forest management is to plant more Mongolian oak.

Figure 22: Community Resource Utilization Map around Huangtuliangzi Forest Farm

Looking at Huangtuliang Forest Farm and its location in Pingquan County, the basis for industrial development and advantages are: first, the edible fungus industry has formed a "market-base-farmer" industrial pattern, which has a significant impact to address local employment, reduce poverty, and meet the regional consumption of forest products. At the same time, it was found that the demand of acacia as raw material for edible fungi cultivation has been decreasing in the recent years, while the demand for Mongolian oak is large. According to the assessment, the current demand for Mongolian oak as raw materials for edible fungi in Pingquan County is more than 50,000 tons per year. Thus, Mongolian oak seedling as raw material for edible fungi should be preferred in future selection of tree species.

Due to the huge demand that cannot be met by locally supplied mushroom timber, large quantities of Mongolian oak need to be imported from Shanxi, Henan and Hubei Provinces. The potential environmental risks are the invasion of alien species or the spread of forest pests and diseases. On the one hand, it increases the local quarantine workload and at the same time, it increases the cost of edible mushroom production.

The local community has a heating season of about six months per year, and currently relies mainly on branches and leaves from the forests after they have been nurtured, and mainly relies on housewives to collect and stack them. In addition, local communities use their leisure time to collect and pick up dead pine needles from the forest for livestock gaskets to ensure the health of livestock, to obtain high-quality farmyard manure, and to reduce the risk of fire.

To manage the above environmental risks, reduce the cost of edible mushroom

production, and ensure a source of livelihood and quality of life for farmers in the community, Huangtuliangzi Forest Farm has integrated the community's demand for fuelwood and mushroom timber into its forest management plan. In terms of afforestation species selection, the logging sites are designed with tree species such as acacia, white elm, and sidecar on sunny slopes. While shady slopes are planted with creosote bush, Mongolian oak, and spruce to create mixed forests. The afforestation is under the canopy of North China larch forests with an aim of creating heterogeneous mixed conifer-width complex forests. In accordance with the type of stabilized forest communities in the region, species such as Mongolian oak, white elm, and spruce are introduced. Through assessment and analysis, most of women's labor in the community is used for livelihood activities related to forest resource utilization and therefore, changes in forest management policies will have a significant impact on the livelihoods of this community. Thus, the forest farm allows local farmers to access the mountains to collect fuelwood and wild mushrooms and obtain harvesting and nurturing residuals when fire prevention requirements are ensured.

This case fully demonstrates the establishment of ESMS in Huangtuliangzi Forest Farm under the guidance of the innovative forest management plan. Through the work of socio-economic information monitors and effective communication with the community and stakeholders, the farm ensures that the forest management activities follow the ESMS principles and standards.

F. Implementing Close-to-Nature Forest Management Practices to Ensure Biodiversity Enhancement and Community Livelihood Needs - Close-to-Nature Forest Management in Mulan Forest Farm

In the baseline assessment before the preparation of the innovative forest management plan, the experts found that mixed coniferous and broad-leaved forests with spruce and oil pine as the dominant species are the zonal apex communities in Mulan Forest Farm and are also the target communities for FLR. Currently, there are only a small amount of spruce mixed coniferous and broad-leaved forests of about 200-250hm^2 in Longtoushan sub-farm and Siheyong sub-farm. The other forest stands with oil pine as the dominant species are basically pure forests, with very few oil-broad-leaved mixed forests, and most of the spruce broad-leaved mixed forests have broad-leaved dominance. The small area of the apex community leads to poor stability of the ecosystem, low level of biodiversity, weak ecological functions such as water conservation, windbreak, and sand stabilization.

At the same time, during the socio-economic baseline assessment, it was found that there are as many as 223 villages in the neighboring communities, which are traditional ethnic minority communities, mainly Manchu and Mongolian. The relationship between forest farms and communities in terms of resource utilization and tenure is more complicated. Among those villages, according to statistics, there

are 28 state-community collaborative afforestation villages (there is tenure and revenue sharing between the state forest farm and the community) and 169 villages with livelihood dependence on forest farms. During the forest management cycle, it is necessary to design reasonable institutional arrangements and strategies to achieve the goal of people-oriented social governance.

Some potential risks identified in the environmental and social analysis prior to the preparation of the forest management plan are:

1) Low level of biodiversity
2) High-quality timber continues to be an important resource for local businesses and community employment
3) Traditional culture and livelihood development strategies of the Manchu and Mongolian communities remain highly dependent on forest resources

In response to these risks, Mulan Forest Farm has proposed the concept of close-to-nature forest management in the forest management based on a landscape restoration perspective.

In the preparation of the forest management plan, the forest management principle guided by the close-to-nature forest concept is proposed, and the first two environmental and social risks are well managed through the implementation of close-to-nature forest management measures. Some examples include marking and managing habitat trees that are distributed in the water conservation and wind-sand conservation functional areas and are rare or precious or with animal residence and other special protection value. The marking and special protection in forest management will increase the biodiversity of the forest stand, maintain the structure of the forest stand, provide food or habitat for birds and other animals, and keep and manage them as the habitat trees and special target trees. Also in the innovative forest management plan, the continuous provision of timber is planned. With the continuous provision of wood, it can also provide continuous employment opportunities and indispensable wood products for small and micro enterprises in the chain of wood as raw material. See the table below:

Table 8: Functional Zoning and Forestry Measures

功能区划	经营措施	面积合计（hm^2）	2021	2022	2023	2024	2025	2026-2030
	总计	25673	4447	2295	2119	3054	2077	11682
木材生产区	合计	3939	508	346	493	341	328	1924
	封育	1886	165	228	432	110	9	943
	荒山造林	41	26		2	12	1	
	人工修复造林	974	188	22	36	14	227	487
	疏伐修复	832	70	65	22	202	57	416
	疏伐修复（块）	52	52					
	天然修复造林	155	7	30	2	4	34	77
水源涵养和防风固沙区	合计	21733	3939	1949	1626	2712	1748	9758
	封育	16613	3094	1303	1056	2000	853	8306
	荒山造林	2217	567	402	398	378	471	
	人工修复造林	1002	96	169	29	78	129	501
	疏伐修复	1552	182	66	106	231	191	776
	天然修复造林	349		9	37	25	104	175

Fifteen percent of the total functional area is arranged as timber production area. In the concept of close-to-nature forests, the necessary timber harvesting is one of the important measures to ensure the health of the forests, and at the same time, it provides the basis for stable employment of stakeholders - local small businesses and local laborers.

Adoption of the close-to-nature forest concept for coppice conversion will contribute to increased biodiversity, ensuring local demand for wood products, and the long-term

environmental and social governance.

In the concept of close-to-nature forest management, rational timber harvesting is one of the important measures to promote forest health, and at the same time, it is the material basis to drive the local industrial chain to benefit local people.

Figure 23: Mulan Forest Farm Functional Area Management Measures Planning Table and Operating Measures

Since the implementation of the innovative forest management plan, Mulan Forest farm has gradually established an ESMS, set up a socio-economic monitoring group and established the ESMS coordinator system. Some of the work has been carried out as follows:

First, a comprehensive stakeholder analysis was conducted to establish a stakeholder list and develop a stakeholder communication and cooperation strategy, as shown in Table 9.

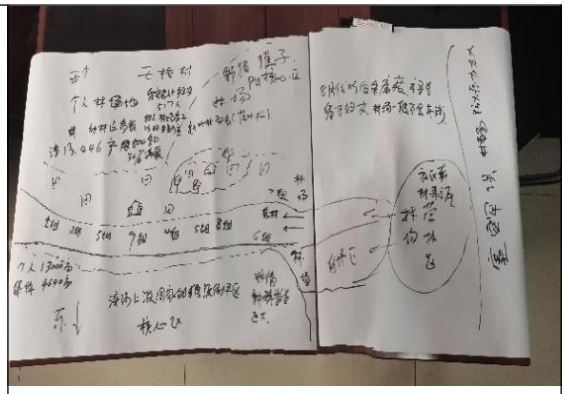
Table 9: Mulan Forest Farm Stakeholder Analysis Table

Stakeholder	Stakeholders' roles in the project, key activities, and project-related competencies/skills	Stakeholder impacts on the project	Possible impacts of the project on stakeholders	Importance (1 low

				to 5 high)
Central level	NDRC, Ministry of Finance, State Forestry and Grassland Administration	Arrange project funding; implement funds, develop policies and plans	Completion of the project tasks, enhancement of project recognition, and improved public image of government departments.	**5**
Provincial level	Forestry and Grassland Administrative Departments in Beijing, Tianjin, and Hebei; Hebei Provincial Department of Finance	Arrange project funding, formulate policies and plans, and managing Beijing-Tianjin wind and sand sources	Provide ecological protection for the Beijing-Tianjin-Hebei region, provided water sources and open spaces; completion of the project tasks, enhancement of project recognition, and improved public image of government departments.	**4**
City level	Government Department in Chengde City	Learning exchanges	Learning exchanges, local coordination	**2**
Local stakeholders	Weichang County Government	Collaborative Exchanges	Promotion of county development	**2**
County (District) Forestry;	Weichang County Forestry Department;	Approve projects, supervise and evaluate	Improve the government image, cooperation and communication	**4**
County (District) Finance Bureau	Weichang County Finance Bureau	Project procurement services	Improve the government image, cooperation and communication	**3**
Forest Farm	Mulan State Forest Farm	Main body of implementation, community management	Improvement of forest quality, enhancement of biodiversity, broadening of employees' horizons, enhancement of management concepts, and enhancement of the publicity capacity and visibility of forests (Mulan Forestry Division)	**5**
Small stakeholders (farmers)	Villagers in 34 townships (over 200 administrative villages)	Provision of labor to participate in patrols	Income generation, science education, sustainable use of forest resources	3
Small and Micro-enterprises	Timber buyers, forest product buyers, contractors	Contractual works, procurement of forest products	Revenue acquisition	**3**
Resource users	Downstream enterprise	Enhance Impact	Access to water resources and other ecological products	
Women	Long-term participation in resource utilization by stay-at-home women's groups	Provision of labor	Increased income and profits, amenities (access to infrastructure in forested areas), livelihood security (water, fuelwood, food, etc.)	**3**
Vulnerable groups	Lower income groups	Getting assistance	Increased income and profitability, livelihood security (water, fuelwood, food, etc.)	

indigenous people	Ethnic minorities (Manchu, Mongolian)	Provision of labor	Income generation and profitability, traditional knowledge, and livelihood transmission	
Other (please specify)	**Research team, including Forestry and Grassland Bureau Assessment and Planning Institute, Beijing Forestry University, Chinese Academy of Forestry, Chinese Academy of Sciences, Ministry of Ecology and Environment Environmental Planning Institute, Hebei Forestry Academy of Sciences, Hebei Agricultural University and so on.**	**Provision of technical support; participated in project design; guided the completion of forest certification audits**	**Increased awareness of forest landscape restoration concepts new forest management programs and increased experience in preparing and implementing new forest management programs; provided a platform for collaboration.**	**3**

Secondly, socio-economic monitoring and risk screening are conducted for a large number of communities, and participatory rapid assessments are conducted for representative communities. The aims are to further understand the resource utilization in the community and the differences in the ways in which male and female community laborers use the resources in different seasons, so as to accurately understand the impacts of the design of the forest management system and the implementation of the measures on different groups.

	
Forestry socio-economic monitors use participatory tools to assessment community resource utilization.	Tianqiao Village of Mulan Forest Farm: ➢ The village has about 446 households, more than 800 people, and 30% of them are Manchu or Mongolian. ➢ There are 517 elderly people and women left behind, and there are more than 80 regular forest workers, most of whom are women. ➢ There are Luanhe Upper River National Nature Reserve and Saihanba Forest Farm in the area, due to the high pressure of fire prevention in the lush forests. ➢ Forest land includes 4,640 mu of collective forests and 13,000 mu of individual forests ➢ Forests are predominantly coniferous (larch)

	➢ Around August each year, the community can go into the mountains to pick mushrooms on their own, mostly women. ➢ Community collection of fuelwoods is mainly in the northern part of the village, and fuelwood for winter heating is an important resource for farmers. ➢ Larch needles are collected for gaskets used in livestock confinement. ➢ Too many wild boar and badgers are close to the core of the reserve

Figure 24: Community Assessment of Mulan Forest Farm

Thirdly, under the premise of ensuring the implementation of forest fire prevention measures, local communities are allowed to obtain conservation and logging residues and wild mushrooms and medicinal herbs to meet their needs for a traditional way of life.

Figure 25: Collection of Fuelwoods and Timber by Communities around Mulan Forest Farm

	
Farmers collect branch lumber from forest trees after they have been nurtured, mainly for winter heating. Pine needles are mainly used for livestock penning gaskets	Small and medium diameter timber remains an important raw material for local SMEs

In carrying out ESMS practices, the Mulan Forest Farm has basically managed the whole process. Prior to the preparation of the forest management plan, socio-economic assessments are conducted to identify possible environmental and social risks; through the forest management plan preparation process, design and management are carried out with consideration of risk mitigation and avoidance of aggravation in conceptualization, objective establishment, regional planning and forest management measures. Timely socio-economic monitoring and annual risk screening was conducted in the implementation of forest management plan with focus on monitoring and assessing the impacts on communities based on the stakeholder analysis. Besides, targeted and effective measures for environmental and

social management were formulated and implemented.

G. Enforcing the Strictest Logging Standards – A Practical Case from Jinpenshan Forest Farm to Ensure the Safety of Logging Workers

According to the forest management plan of Jinpenshan Forest Farm, it is the management objective to plan for sustainable forest harvesting in the Southern Forestry Area. Ensuring the safety of logging workers is a real-life demonstration of the people-oriented forest management in this forest farm.

Logging activities should be done in strict accordance with the Forestry Industry Standard of the People's Republic of China - Forest Harvesting Operating Procedures (LY/T 1646-2005). This standard is based on a number of protocols (including logging protocols) developed in accordance with the recommendations of the United Nations Intergovernmental Working Group on Forests (IPF), and the Forestry Safety Guard Protocol published by the International Labor Organization (ILO), which was compiled in 2002 and published in 2005.

One principle of the regulation is people-oriented logging management since logging is one of the most dangerous and labor-intensive production activities. The logging process should minimize the labor intensity, strengthen the safety production, prevent, or reduce personal injury, and reduce the incidence of occupational diseases. Jinpenshan Forest Farm systematically manages logging risks from establishing professional logging teams, conducting scientific planning of the logging operation process, training based on labor types, constructing according to the process and safety standards, and conducting process supervision and quality control to ensure the safety and health of logging workers. The implementation of this logging protocol ensures that the preparation and implementation of the innovative forest management plan in Jinpenshan Forest Farm is fully in line with the principles of people-oriented, vulnerable group protection and the implementation of the strictest standards as a priority in environmental and social management.

	
On-site construction training for logging	Training of logging workers to use tools

workers	

Figure 26: On-site Construction Training for Logging Workers at Jinpenshan Forest Farm

V. Conclusion

ESMS is an important part of the project, which is written into the project framework and explicitly agreed in the agreement, and the related work needs to be evaluated and checked in the completion assessment. The ESMS is carried out during the project implementation, fully reflecting the essence of techniques, policy and environmental and social impact management advocated by the forest landscape restoration at the international level.

Through the project's promotion of the ESMS concept, the knowledge of ESMS was basically popularized among the project steering committee, national project office, provincial and municipal project offices, and the pilot forest farms. The project staff at all levels gradually carried out the work related to ESMS. The ESMS management system has been established in the whole project management and implementation process.

Among other things, the National and Provincial Project Implementation Offices have implemented many tasks such as the "ESMS Enhancement - ROAM Steps" in furtherance of the project's core mandate and have organized and coordinated multi-stakeholder planning and training workshops. These activities achieved the effective participation of stakeholders while considering the participation of women. Project staff at the pilot forest farms have been actively involved in the ESMS with an open mind. The project staff in the pilot forest farms are now practicing the ESMS standards and principles and screening tools in a comprehensive manner, developing risk management plans in line with IUCN Project Guidelines, and incorporating them into management actions. Each pilot forest farm has trained several managers in charge of specific ESMS activities, which formed the basis of the subsequent ESMS implementation. The environmental and social management cases of each pilot forest farm have demonstrated relevant ESMS activities, which lead to subsequent scale-up of the practice.

There are still some issues and challenges in implementing relevant ESMS activities to be further addressed:

1. Since the socio-economic assessment has been fully completed and the project is near completion, there is little time and resources left for further community consultation at the forestry farms. Additional resources will be needed for further ESMS implementation.

2. Currently, the ESMS principles, standards and tools are mainly translated from IUCN documents with insufficient contextualization, especially the tool templates and relevant language need to be modified and improved through practice.

3. ESMS field assessments have been limited due to various constraints, especially the impact of the COVID-19 pandemic, which has led to delays in onsite ESMS training, such as socio-economic impact assessments and monitoring activities, and community consultation, etc.

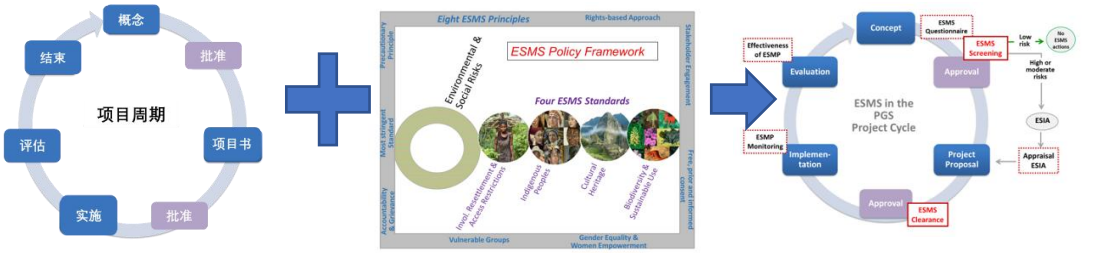
VI. Recommendations

Through the practice of the PRC-GEF State Forest Farms Project, the following recommendations are made for further development of ESMS in forestry-related programs in China:

A. Developing a "Two-Pronged Approach" for FLR Management

Throughout the long-term practice of domestic and international forest management, FLR and forest management agencies need to adhere to the management concept of "walking on two legs" to achieve sustainable forest management, one being the establishment of a policy and technical system for forest restoration and management, and the other being the management of environmental and social risks that may arise from forest restoration and management.

Only by adopting the two-pronged approach can lead forest management to the sustainable development path. In addition to considering sustainability at the technical and policy levels, the environmental and social sustainability of forest management should also be considered to achieve the goal of sustainable forest management.



Policy, technical sustainability of forest management

Environmental and social sustainability

Achieving the goal of sustainable forest management

Figure 27: Project sustainability management diagram

B. Establishing Environmental and Social Risk Coordinator System

Since the natural resource in state-owned forest farms are owned by the state, which is more of a public asset, it attracts more and more public attentions. Thus, the demands and supervision of natural resources from multiple stakeholders are increasing, and some of them are even unavoidable. Regardless of whether a formal ESMS system is established, the complicated information collected and consolidated in advance from various sources is important reference for forest farm management decision-making. Therefore, forest farms with available resources and capacity should set up a coordinator position for staff with certain levels of policy, technical, and analytical skills to manage and track information and support decision makers in designing plans. Additionally, the coordinator should be able to provide answers to ESMS related questions during project evaluation.

C. Contextualizing ESMS Principles and Standards

The State-owned Assets Supervision and Administration Commission of the State Council (SASAC) has newly set up a Social Responsibility Bureau to guide and promote enterprises to actively practice Environmental, Social and Corporate Governance (ESG) concepts, proactively adapt to and lead the development of international principles and standards, and better promote sustainable development. The ESMS principles and standards are considered as one of the international protocols in the fields of nature conservation, forest management and ecological restoration. It is believed that China's forest management agencies will be more involved in the practice of leading the implementation of international standards. Therefore, it is necessary to contextualize relevant ESMS principles and standards, so that more forest management agencies can understand, familiarize, incorporate and implement these protocols, and based on which they can design innovative protocols and lead the practice.

D. Providing References on Environmental and Social Governance for International Forestry Projects

The practical experience from this project can serve as a reference for China's forestry projects, especially for those implemented overseas, when considering environmental and social governance activities in the full project management cycle of planning, design, implementation, and evaluation and making corresponding risk management plans and resource mobilization in accordance with the ESMS principles and standards.