

中国企业境外可持续森林培育指南

A Guide on Sustainable Overseas Silviculture
by Chinese Enterprises

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前 言

为维护全球生态环境，促进生态、社会和经济可持续发展，指导中国企业境外进行森林培育活动，国家林业局、商务部组织制定《中国企业境外可持续森林培育指南》（简称《指南》，下同）。《指南》为中国企业境外森林培育活动提供行业规范和自律依据。

一、《指南》由范围、定义、法律法规框架、营造林、生态保护和社区发展及附录 A、附录 B 8 个部分组成。附录 A 列出中国签署的具有约束力的相关国际公约、协定与宣言；附录 B 为《指南》用词说明。

二、《指南》由中华人民共和国国家林业局提出，国家林业局植树造林司归口。《指南》由国家林业局植树造林司、商务部对外经济合作司负责解释。

三、《指南》起草单位：国家林业局调查规划设计院、营造林质量稽查办公室。在《指南》制定过程中，得到中国科学院科技政策与管理科学研究所、中国光大集团光大（柬埔寨）百利木业有限责任公司、云南鸿宇集团、全球环境研究所（GEI）、世界自然基金会（WWF）等单位的大力支持。同时，金洪根、郑重、于百川、王毅、金嘉满、王爱民、王连春等同志提出了宝贵意见，在此一并致谢。

四、《指南》主要起草人：李怒云、刘道平、翟洪波、陈嘉文、刘德晶、张志、闫平、陈勇、石田、桑轶群、周志峰。

五、《指南》审核专家：蒋有绪、李育材、魏殿生、孙贺、翟明普、赵中南、李智勇、张艳红、靳芳、张忠田、韩崢。

六、《指南》经国家林业局、商务部批准，2007年8月27日首次发布施行。

七、《指南》英文版由外交部翻译室翻译。

Preface

In order to protect the world's ecological environment and to promote ecologically, socially and economically sustainable development by taking the lead in regulating Chinese overseas forestry enterprises, the State Forestry Administration and the Ministry of Commerce have developed *A Guide on Sustainable Overseas Silviculture by Chinese Enterprises* (hereafter referred to as the *Guide*). The *Guide* will provide Chinese overseas forestry enterprises with industry standards for silviculture activities and basis for self-regulation.

1 The *Guide* is divided into eight parts which include: scope, definitions, legal frameworks, afforestation, ecological protection, community development and Appendix A&B. Appendix A puts forth the related international convention, agreements and protocols which China has signed, and appendix B provides explanations of the terminology.

2 The *Guide* is put forth by the State Forestry Administration of the People's Republic of China. The document will be eventually managed by the Department of Afforestation and Silviculture of the State Forestry Administration. The *Guide* will be responsible for explaining by the Department of Afforestation and Silviculture of the State Forestry Administration, and the Department of Foreign Economic Cooperation of the Ministry of Commerce.

3 Parties who contributed to the drafting of the *Guide* include: Academy of Forest Inventory and Planning and the Quality Management Office of Afforestation of State Forestry Administration. In the process of formulating the *Guide*, the authors received generous support from the following parties: the Institute of Science and Technology Policy and Management of the Chinese Academy of Sciences; the Baili Wood Limited Corporation of Chinese Everbright Group (Cambodia), the Hongyu Group of Yunnan; the Global Environmental Institute (GEI); and the World Wildlife Fund (WWF), and so on. At the same time, the authors would also like to thank a number of individuals who made valuable contributions to the document including: JIN Honggen, ZHENG zhong, YU Baichuan, WANG Yi, JIN Jiaman, WANG Aimin, and WANG Lianchun.

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6 The *Guide* has been allowed by the State Forestry Administration and the Ministry of Commerce and issued on August 27th, 2007.

7 The English version of the *Guide* is provided by the Translation Office of the Ministry of Foreign Affairs.

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中国企业境外可持续森林培育指南

1 范围

1.1 《指南》规定了可持续森林培育应遵循的基本原则，以及中国企业为实现可持续森林培育应达到的基本要求。

1.2 《指南》适用于规范和指导境外进行营造林的中国企业森林培育活动的全过程，适用于评估从事与森林培育相关的中国企业的活动，也可以用于指导提供非木质林产品及其它服务的中国企业，促进中国企业合理、有效、可持续地保护和发展全球森林资源。

2 定义

2.1 森林培育 (Silviculture)

指从林木种子、苗木、造林到林木成林、成熟的整个培育过程中按既定培育目标和客观自然规律所进行的综合培育活动。

2.2 中国企业 (Chinese Enterprises)

指具有法人资格的从事森林培育和相关活动的企业。

2.3 高保护价值森林 (High Conservation Value Forest)

高保护价值森林是一片需要维持或提高其保护价值的具有以下特征的森林区域：具有全球性、区域性或国家意义的生物多样性价值显著富集的森林区域；具有全球性、区域性或国家意义的大景观水平的森林区域；拥有珍稀、受威胁或濒危生态系统或者包含其中的森林区域；满足当地社区基本需求的重要森林区域；对当地传统社区文化特性有重要意义的森林区域。

2.4 森林监测 (Forest Monitoring)

对森林状况、经营活动及其环境和社会影响进行持续不断或定期的测定与评估。

2.5 森林破碎化 (Forest Fragmentation)

指任何导致连续的森林覆盖转化为被非林地分割的森林斑块的过程。

2.6 入侵物种 (Invasive Species)

指同时具备下列条件的物种：①通过有意或无意的人类活动而被引入一个非本源地区域；②在当地的自然或人造生态系统中形成了自我再生能力；③给当地的生态系统或地理结构造成了明显的损害或影响。

3 法律法规框架

3.1 应遵守我国和所在国签署的相关国际公约和协议。

应遵守我国和所在国所签署的与森林培育有关的国

际公约和协议的有关条款（见附录 A）。

3.2 应遵守我国政府主管部门制定的关于企业对外经济技术合作的有关法律、法规、部门规章和相关文件的规定。

3.3 应遵守所在国相关的法律、法规。

3.3.1 应备有所在国现行的与森林培育活动相关的法律、法规文本。

3.3.2 森林培育活动应符合所在国有关法律、法规的要求。

3.3.3 管理人员和职工应了解有关法律、法规的要求。

3.3.4 应了解所需缴纳的税费，并应依法按时缴纳税费。

3.3.5 应依法采伐，严禁毁林和其它未经许可的活动。

3.3.6 应依法保护林地，严格保护高保护价值森林，严禁非法转变林地用途。

4 营造林

4.1 应制定和执行森林培育方案，确定森林培育的目标和措施。

4.1.1 应根据当地林业主管部门制定的林业长远规划以及当地条件，制定和执行森林培育方案。

4.1.1.1 应具有适时、有效的森林培育方案。

4.1.1.2 应以本单位掌握的最新森林资源清查数据编制森林培育方案。

4.1.1.3 森林培育方案及其附属文件应包括以下内容：

(1) 森林培育活动目标，包括调查资源结构和优化培育模式；

(2) 自然社会经济状况，包括森林特别是高保护价值森林资源、环境限制因素、土地利用及所有权状况、社会经济条件、社会发展与主导需求、森林培育活动沿革，以及邻近土地的概况；

(3) 林业生产的总体布局；

(4) 森林培育体系和营林措施，包括种苗生产、更新造林、抚育间伐、林分改造等；

(5) 森林采伐和更新规划，包括年采伐面积、采伐量、采伐强度、出材量、采伐方式、伐区配置和更新作业等；

(6) 森林和环境保护规划，包括森林有害生物防治、森林防火、水土保持、化学制剂和有毒物质的控制，以及林地占用等；

(7) 野生动植物保护规划，特别是珍稀、受威胁及濒危物种；

(8) 多种经营和林产品加工规划设计；

(9) 重要非木质林产品培育、保护与利用的经营规划和措施；

(10) 基本建设和林道规划；

(11) 森林培育活动效益和风险评估；

(12) 森林生态系统的监测措施；

(13) 与森林培育有关的必要图表；

(14) 应符合所在国其它方面的具体要求。

4.1.1.4 应根据森林培育方案，制定年度作业计划。

4.1.2 应适时修订森林培育方案。

4.1.2.1 应及时了解与本地区森林培育相关的科学技术发展信息以及政策。

4.1.2.2 应根据森林资源的监测结果、新的科技信息和政策，以及环境、社会和经济条件的变化，适时修订森林培育方案。

4.1.3 森林作业与作业设计应保持一致。

4.1.3.1 应按作业设计开展森林培育活动。

4.1.3.2 在保证森林培育更有利于实现经营目标和保证森林生态完整性的前提下，可对作业设计做适当调整。

4.1.3.3 作业设计的调整内容应备案。

4.1.4 应对林业职工进行必要的培训和指导，使他们具备正确实施作业的能力。

4.1.4.1 应具有对职工进行培训和指导的机制。

4.1.4.2 应确保林业职工受到良好培训，了解并掌握作业技术。

4.1.4.3 应具有专业技术人员对职工的野外作业提供必要的技术指导。

4.1.5 应向当地社区或有关方面公告森林培育方案的主要内容。

4.2 应按照可持续发展的原则开展造林、营林生产活动，培育、保护和发展森林资源，开发多种林产品。

4.2.1 森林培育应力争实现稳定的经济效益，确保维持

森林生态系统生产力的必要投入。

4.2.1.1 应充分考虑到森林培育成本和管理运行成本的承受能力，在经济上可行。

4.2.1.2 应保证对可持续森林培育的合理投资规模和投资结构。

4.2.2 鼓励开展林区多种经营，可持续利用木材和非木质林产品，如林果、油料、食品、饮料、药材和化工原料等，促进当地经济发展。

4.2.3 对种子苗木的引进、生产及经营应遵守所在国的相应法律法规，保证种子和苗木质量。

4.2.3.1 林木种子、苗木的引进、生产及经营应符合所在国家相关法律法规的要求，如《森林法》《种子法》《植物检疫法》等。

4.2.3.2 从事林木种苗生产、经营的单位，应按照当地林业行政主管部门的规定生产和经营。

4.2.3.3 在种苗调拨和出圃前，应按所在国有关技术标准进行质量检验。

4.2.3.4 引进林木种子、苗木和其它繁殖材料，应经所在国相应林业主管部门审批。

4.2.4 应按照经营目标因地制宜选择造林树种，优先考虑当地适生树种，特别是乡土树种，慎用外来树种。造林后应对其生长情况、有害生物和对生态环境产生的影响等进行监测。

4.2.4.1 应根据经营目标和适地适树的原则选择造林树种。

- 4.2.4.2 应优先选择乡土树种造林。
- 4.2.4.3 应监测外来物种成活率、保存率、有害生物和环境影响。
- 4.2.5 应在符合当地立地条件和经营目标的前提下，开展造林设计和作业。**
- 4.2.5.1 造林设计应符合经营目标并规定合理的造林、抚育、疏伐、主伐和更新计划。
- 4.2.5.2 应严格按照造林设计进行施工作业并进行全过程监控。
- 4.2.5.3 宜采取下列一种或多种森林培育措施，促进林分结构多样化和加强林分的稳定性：
- (1) 使用多树种，合理营造混交林；
 - (2) 经营设计避免短期内集中砍伐；
 - (3) 多龄级或分期造林；
 - (4) 合理配置林种比例；
 - (5) 营造防护林带。
- 4.2.5.4 森林培育活动宜有利于景观和生境多样化。
- 4.2.5.5 森林培育布局和规划宜有利于维持自然景观的价值和特性。
- 4.2.5.6 森林培育宜促进同龄林逐步向异龄林和多种生境结构转化。
- 4.2.6 应依法进行森林采伐和更新，木材和非木质林产品消耗率不得高于再生能力。**
- 4.2.6.1 应依据用材林年消耗量低于年生长量，以及合理经营和可持续利用的原则，制定年采伐计划和年采伐

限额，报相应林业主管部门审批。

4.2.6.2 应具有年木材采伐量和采伐地点的记录。

4.2.6.3 对森林进行采伐和更新应符合所在国家有关森林采伐作业规程的要求。

4.2.6.4 对非木质林产品的利用不应超过其可持续利用所允许的水平。

4.2.7 应有利于天然林的保护与更新。

4.2.7.1 应采取有效措施促进恢复和保护天然林。

4.2.7.2 不宜将天然林转化为人工林经营。

4.2.8 应尽量提高对森林资源的有效利用。

4.2.8.1 应采用对环境影响有益的森林培育作业方式。

4.2.8.2 应提高木材采伐和造材过程中的综合利用率。

5 生态保护

5.1 生物多样性保护

5.1.1 应制定保护珍稀、受威胁和濒危动植物物种及其栖息地的措施。

5.1.1.1 应确定出森林培育范围内需要保护的珍稀、受威胁和濒危动植物物种及其栖息地，并在图上标注。

5.1.1.2 应根据具体情况，划出一定的保护区域，作为保护珍稀、受威胁和濒危动植物物种的栖息地。若不能明确地划出保护区域，则对每种森林类型应保留足够的面积。对上述区域的划分应考虑到野生动物在森林中的迁徙。

5.1.1.3 应制定被保护区域内的相应保护措施，对职工进行相关培训和教育。

5.1.1.4 必须保护所在国法律、法规和国际公约明令保护物种的栖息环境。

5.1.2 不得开展不适宜的采集活动。

5.1.2.1 采集活动应符合所在国有关野生动植物保护方面的法规。

5.1.2.2 采集活动应采用可持续利用资源的方法，最大限度地减少对当地资源的破坏。

5.1.3 应保护森林培育区域内典型的森林生态系统类型，维持其自然状态。

5.1.3.1 应通过调查，确定森林培育范围内典型的森林生态系统类型。

5.1.3.2 应制定出保护典型生态系统的措施。

5.1.3.3 应实施保护措施，保持典型生态系统的自然状态。

5.1.4 应采取有效措施恢复、保持和提高生物多样性。

5.2 环境影响

5.2.1 应考虑森林培育活动对环境的影响。

5.2.1.1 应根据森林培育的规模、强度及资源特性，对森林培育作业进行环境影响评估。

5.2.1.2 应根据评估的结果调整森林培育作业方式，减少采伐、集材、运输等活动对环境的影响。

5.2.2 应采取各种保护措施，维护林地的自然特性，避免地力衰退，保护水资源。

- 5.2.2.1 应采取有效措施最大限度地减少整地、造林、采伐、更新和道路建设等人为活动对林地的破坏，维护森林土壤的自然特性及其长期生产能力。
- 5.2.2.2 减少森林培育作业对水资源质量、数量的不良影响，控制水土流失，避免对森林集水区造成重大破坏。
- 5.2.2.3 宜在溪河岸边，建立足够宽的缓冲区，保持水土。
- 5.2.2.4 宜利用有机肥和生物肥料增加土壤肥力，减少化肥使用量。
- 5.2.3 应严格控制化学制剂的使用，减少因使用化学制剂造成的环境影响。**
- 5.2.3.1 不得使用所在国法律、法规和国际公约明令禁止使用的农药。
- 5.2.3.2 应提供适当的设备和技术培训，减少使用化学制剂对环境的污染和对人类健康的危害。
- 5.2.3.3 应采用符合环保要求的方法处理化学制剂的废弃物和容器。
- 5.2.4 应严格控制 and 监测外来物种的引进和入侵，避免其造成不良的生态后果。**
- 5.2.4.1 应在经过检疫，确保对环境和生物多样性不造成破坏的条件下引进外来物种。
- 5.2.4.2 应对外来物种的使用进行记录，监测其生态影响。
- 5.2.4.3 应制定并执行控制外来有害物种入侵的措施。
- 5.2.5 应维护森林生态服务功能。**

5.2.5.1 应了解并确定森林培育区内森林的生态服务功能，如森林旅游、教育、科研、渔牧资源、水源涵养等。

5.2.5.2 应采取措施维护森林特别是高保护价值森林的相关价值和服务功能。

5.3 森林保护

5.3.1 应制定森林有害生物防治计划，以营林措施为基础，采取有利于环境的生物、化学、物理等措施，进行有害生物综合治理。

5.3.1.1 森林有害生物治理应符合所在国法律、法规的要求。

5.3.1.2 有条件时，应开展有害生物的预测预报，评估森林潜在的有害生物影响，制订相应的防治计划。

5.3.1.3 应采取营林措施为主，生物、化学、物理等防治相结合的有害生物综合治理措施。限制在森林中使用化学农药，避免或减少化学农药对环境的影响。

5.3.1.4 应采取有效措施，保护森林内的各种有益生物，提高森林健康水平。

5.3.2 应建立健全的森林防火制度，制定并实施防火措施。

5.3.2.1 应根据所在国的相关法律、法规，建立森林防火制度。

5.3.2.2 应对森林培育区域划定森林火险等级区。

5.3.2.3 应制定和实施森林火情监测和防火措施。

5.3.2.4 应建设森林防火设施，建立防火组织，负责本企业的森林防火和扑救工作。

5.3.2.5 应进行森林火灾统计，建立火灾档案。

5.4 森林监测

5.4.1 应建立适宜的森林监测制度和森林资源档案，对森林资源进行连续的或定期的监测。

5.4.1.1 应进行森林资源调查，建立森林资源档案制度。

5.4.1.2 应根据本单位的森林培育活动的规模和强度以及所在地区的条件，建立适宜的监测制度和监测程序，确定森林监测的方式、频度和强度。

5.4.1.3 应按监测制度连续或定期开展各项监测活动。

5.4.1.4 应对监测结果进行比较和评估。

5.4.1.5 应在制定或修订森林培育方案和作业计划中体现监测的结果。

5.4.2 森林监测应包括资源现状、森林培育状况及其社会环境影响监测等内容。

森林监测应包括以下内容：

- (1) 主要林产品的储量、产量和资源消耗量；
- (2) 森林结构、生长、更新及健康状况；
- (3) 动植物的种类及其变化趋势；
- (4) 采伐及其它经营活动对环境与社会的影响；
- (5) 森林培育的成本和效益；
- (6) 年度作业计划的执行情况。

6 社区发展

6.1 宜为林区及周边地区的居民提供就业、培训及其它社会服务的机会。

6.2 应保障劳工合法权益，鼓励社区居民参与森林培育活动的决策。

6.3 不得侵犯当地居民对林木和其它资源所享有的法定权利。

6.3.1 应采取适当措施，防止森林培育活动直接或间接地威胁和削弱原住民的资源及使用权。

6.3.2 当地居民自愿把资源经营权委托给中国企业时，双方应签订协议或合同。

6.4 应建立与当地社区的协商机制。积极与原住民协商，划定和保护对原住民具有特定文化、生态、经济或宗教意义的林地，尤其是在多民族聚居区。

6.5 应根据需要，在信息保密的前提下，公布森林监测结果概要。

附 录 A

(资料性附录)

相关国际公约、协定和宣言

- A. 1** 生物多样性公约
- A. 2** 保护臭氧层维也纳公约
- A. 3** 气候变化与生物多样性公约
- A. 4** 联合国气候变化框架公约
- A. 5** 国际植物新品种保护公约
- A. 6** 保护野生动物迁徙物种公约
- A. 7** 濒危野生动植物种国际贸易公约
- A. 8** 关于特别是作为水禽栖息地的国际重要湿地公约
- A. 9** 国际鸟类保护公约
- A. 10** 植物检疫及其虫害与疾病防护合作协定
- A. 11** 保护候鸟及其栖息环境协定
- A. 12** 国际热带木材协定
- A. 13** 关于环境与发展的里约宣言

附 录 B

(规范性附录)

《指南》用词说明

为便于在执行《指南》条文时区别对待，对于要求严格程度不同的用词说明如下：

- B.1** 表示很严格，非这样做不可的：
正面词采用“必须”；反面词采用“严禁”。
- B.2** 表示严格，在正常情况下均应这样做的：
正面词采用“应”；反面词采用“不应”或“不得”。
- B.3** 表示允许稍有选择，在条件许可时首先应这样做的：
正面词采用“宜”或“可”；反面词采用“不宜”。

**A Guide on Sustainable Overseas Silviculture
by Chinese Enterprises**

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A Guide on Sustainable Overseas Silviculture by Chinese Enterprises

1 Scope

1.1 The *Guide* prescribes the fundamental principles to observe in sustainable silviculture, and the basic requirements for the Chinese enterprises engaged in realizing sustainable silviculture.

1.2 The *Guide* applies to regulating and guiding the whole process of the overseas activities of Chinese enterprises in silviculture, to evaluating the Chinese enterprises' activities pertinent to silviculture, to guiding the Chinese enterprises in providing non-timber products as well as other services, enabling them to protect and develop the global forest resources in a rational, efficient and sustainable way.

2 Definitions

2.1 Silviculture

The comprehensive activities conducted during the entire cultivation process of tree seeds, seedlings, afforestation and forest maturity following the set cultivation goals and objective order of nature.

2.2 Chinese Enterprises

The qualified corporations engaged in silviculture and relevant activities.

2.3 High Conservation Value Forest

A high conservation value forest refers to a forest region, the conservation value of which needs maintaining or enhancing, and it is characterized by: a forest region rich in biodiversity of global, regional or national significance; a forest region with spectacular (landscape) of global, regional and national significance; a forest region possessing precious, rare, threatened or endangered ecological system or being encircled in such a system; a forest region being able to meet the basic needs of the local communities; a forest region playing a significant role in traditional community and cultural identities.

2.4 Forest Monitoring

Tests and evaluations made continuously and regularly

on the forest situation, and relevant business operations and environmental and social impacts.

2.5 Forest Fragmentation

Any process that causes the forest coverage to be dissected by non-forestland into forest fragments.

2.6 Invasive Species

The species that are simultaneously characterized by the following: ① introduced to a non-native region due to intentional or unintentional human activities; ② forming self-reproduction capabilities in the local natural or man-made ecological system; ③ causing obvious damages to or impacts upon the local ecosystem or geographical structures.

3 Legal Framework

3.1 The relevant conventions and agreements signed by China and the host country shall be observed.

The relevant clauses of the conventions and agreements pertinent to silviculture (see Appendix A) shall be observed.

3.2 The laws, statutes, departmental regulations and relevant documents, made or issued by competent government agencies on the companies involved in foreign economic and technological cooperation, shall be observed.

3.3 The laws and regulations of the host country shall be a-

bided by.

3.3.1 The companies concerned shall be equipped with the current texts of laws and regulations concerning the activities related to silviculture of the host country.

3.3.2 The silviculture activities shall be in conformity with the requirements of the specific laws of the host country.

3.3.3 The laws and statutes shall be made known to the managers and staff.

3.3.4 To find out the fees and taxes payable and make payments on the timely basis according to the law.

3.3.5 Logging shall be conducted according to the law. Forest destruction or any other unauthorized activity shall be strictly prohibited.

3.3.6 Forestland shall be protected according to law. The high conservation value forest shall be strictly protected and no illegal transformation of forestland for other purposes shall be tolerated.

4 Afforestation

4.1 A silviculture planning shall be formulated and implemented. Goals and measures of silviculture shall be confirmed.

4.1.1 The appropriate silviculture scheme shall be formulated and implemented in accordance with the long-term plan-

ning set up by the local competent forestry department as well as the local conditions.

4.1.1.1 A timely and effective silviculture shall be formulated.

4.1.1.2 The silviculture shall be compiled on the basis of the latest checking statistics obtained by the organization itself.

4.1.1.3 The silviculture planning and its accessory documents shall include the following:

(1) The purpose of silviculture activities, including investigation of resource structure and optimum silviculture model;

(2) The natural and socio-economic situation, including forest, high conservation value forest in particular, limited environmental factors, the situation of land use and ownership, socio-economic conditions, social progress and predominant demands, evolution of silviculture as well as the survey of adjacent land;

(3) The overall arrangement of forestry production;

(4) The silviculture system and afforestation measures, including seedling production, regeneration planting, tending and selective thinning, forest evaluation and transformation, etc.

(5) Forest logging and renewal planning, including logging area, harvest volume, logging intensity, yield volume,

logging methods, logging area configuration and renewal operations, etc.

(6) Forest and environment protection planning, including prevention and treatment of harmful forest living organisms, forest fire prevention, water and soil conservation, control of chemicals and toxicants, occupation and expropriation of forestland, etc.

(7) Wild fauna and flora protection planning, including the rare, threatened as well as endangered species;

(8) Diversified operations and planning and designs of forest product processing;

(9) Operational planning and measures of silviculture, protection and utilization of non-timber forest products;

(10) Planning of infrastructure and forest road network;

(11) Evaluation of the benefits and risks of silviculture activities;

(12) Measures for monitoring the forest ecosystem;

(13) Necessary charts pertaining to silviculture;

(14) Meeting other requirements of the host country.

4.1.1.4 An annual operation plan shall be set up in accordance with the silviculture plan.

4.1.2 The silviculture planning shall be revised on the timely basis.

4.1.2.1 The company shall learn on the timely basis the information of scientific and technological development and

policies relevant to the local silviculture.

4.1.2.2 The silviculture planning shall be revised in accordance with the monitoring results of the forest resources, new scientific and technological information and policies, and the changes of environment and socio-economic conditions.

4.1.3 The forest operations shall be in consistent with the operation designs.

4.1.3.1 The silviculture shall be conducted in accordance with the operation designs.

4.1.3.2 The operation designs can be appropriately readjusted on the prerequisite condition that the silviculture is more conducive to realizing the operational objectives and ensure the integrality of the forest ecology.

4.1.3.3 The readjusted contents of the operational designs shall be put on records.

4.1.4 The forestry employees shall receive necessary training and guidance so that they are able to perform properly as operators.

4.1.4.1 There shall be a mechanism for training and guiding the employees.

4.1.4.2 The company shall ensure that the forestry employees can be well-trained, learn and have a good command of the operational guidance.

4.1.5 The local community and the departments concerned shall be informed of the main contents of the silviculture

planning.

4.2 Afforestation and relevant business operations shall be conducted to afforest, protect and develop the forest resources and exploit the diversified forest products in accordance with the sustainable principle.

4.2.1 The silviculture shall strive for stable economic benefits, ensuring the necessary input in order to maintain the productivity of the forest ecosystem.

4.2.1.1 The sustainability of silviculture cost and management and operation cost must be taken into full consideration, and it shall be economically feasible.

4.2.1.2 The company shall ensure the rational investment scope and structure of the sustainable silviculture.

4.2.2 The company shall encourage diversified business operations in the forest region, and then it shall be able to continuously utilize timber and non-timber products, such as fruit, oil plants, foodstuff, drinks, medicinal materials and in turn, promote the local economic growth.

4.2.3 The company shall abide by the relevant laws and regulations of the host country when introducing seeds or seedlings or conducting production or transactions, and ensure the quality of the seeds and seedlings.

4.2.3.1 The introduction, production and transactions of seeds and seedlings shall be in conformity with the requirements of the laws and regulations of the host country, such as

forest law, seeds law, law on plant quarantine, etc.

4.2.3.2 The organizations must practice its production and transactions of forest seeds or seedlings in accordance with the requirements of the competent local forestry departments.

4.2.3.3 Prior to dispatch of seeds or seedlings and outplanting, the quality inspection shall be conducted in accordance with the technological standards of the host country.

4.2.3.4 The introduction of seeds, seedlings and other reproductive products shall be conducted after obtaining the approval of the competent forestry department of the host country.

4.2.4 Gear the selection of afforested tree species to the local conditions in accordance with the operational objectives. The optimum local tree species, the native ones in particular, shall be the top priority for considerations. Be cautious in using exotic tree species. The growth of the afforested trees, harmful organisms as well as the impact of afforestation upon the ecosystem shall be monitored.

4.2.4.1 The afforested tree species shall be selected in accordance with the operational objectives and the principle of optimum trees suitable for local conditions.

4.2.4.2 The native tree species shall be taken as top priority for afforestation.

4.2.4.3 The survival rate, preservation rate, harmful living organisms and impacts upon environment of the exotic

species shall be monitored.

4.2.5 The afforestation designs and operations shall be conducted on the prerequisite condition of conforming to the local conditions and operational objectives.

4.2.5.1 The afforestation designs shall be in conformity with operational objectives and shall stipulate rational plans for afforestation, forest tending operations, thinning, final cutting and renewal.

4.2.5.2 Operations shall be conducted in accordance to the strict afforestation designs and the whole procedure shall be monitored.

4.2.5.3 The following single or mixed measures of silviculture shall be taken to promote the diversity of the forest structure and strengthen the stability of forest structure:

(1) use manifold tree species and rationally plant mixed forest;

(2) design operations will be avoided over-concentrated logging over a short period of time in management design;

(3) deploy multi-age structure and periodic afforestation;

(4) rationalize and collocate the proportion of forest species;

(5) afforest the protection forest belt.

4.2.5.4 The silviculture should be conducive to landscaping and biological diversification.

4.2.5.5 The layout and planning of silviculture should be conducive to maintaining the value and characteristics of natural landscape.

4.2.5.6 The silviculture should be conducive to promoting the gradual transformation from the even-aged forest to uneven-aged forest and diversiform living environment.

4.2.6 The forest logging and renewal shall be conducted in accordance with the law, the consumption of timber and non-timber products shall not be higher than the regeneration ability.

4.2.6.1 The annual harvest planning and harvest quota shall be established on the basis of the principles of the annual consumption of timber forest being lower than annual growth, rationalized operations and sustainable utilization. The planning and quota shall be submitted to the competent forest departments for approval.

4.2.6.2 The annual timber harvest and logging sites shall be put on records.

4.2.6.3 The forest harvest and renewal shall be in conformity with the requirements of the relevant forest operating rules of the host country.

4.2.6.4 The utilization of the non-timber forest products shall not exceed the limits of the level permitted by the sustainable development.

4.2.7 Operations shall be conducive to the conservation of the natural forest and renewal.

4.2.7.1 Efficient measures shall be taken for the restoration and conservation of natural forest.

4.2.7.2 Natural forest should not be turned to man-made forest to operate.

4.2.8 The efficient utilization of the forest resources shall be enhanced as much as possible.

4.2.8.1 The environmentally friendly operation mode of silviculture shall be adopted.

4.2.8.2 The comprehensive utilization ratio shall be improved during timber harvest or bucking.

5 Ecological Protection

5.1 Protection of biodiversity

5.1.1 Measures shall be formulated for the purpose of protecting the precious, rare, threatened or endangered fauna and flora species as well as their habitat.

5.1.1.1 The precious, rare, threatened and endangered fauna and flora species as well as their habitat that need protection shall be ascertained within the scope of silviculture and be lined out on the map.

5.1.1.2 Certain conservation zones shall be lined out as the habitat of the precious, rare, threatened and endangered fauna and flora species according to the specific local conditions. If such an area can not be clearly lined out, sufficient

area shall be reserved for each forest type. The migration of the wild fauna within the forest shall be taken into consideration for above-mentioned partition.

5.1.1.3 Certain protection measures shall be formulated accordingly within the conservation area, and employees shall be trained and educated with the relevant knowledge as well.

5.1.1.4 The habitat of the species, whose protection has been clearly prescribed by the laws and regulations of the host country, and international conventions, must be protected.

5.1.2 No inappropriate collection activities shall be allowed.

5.1.2.1 All the collection activities shall be in conformity with the statutes pertaining to the protection of wild fauna and flora of the host country.

5.1.2.2 All the collection activities shall adopt the methods of sustainable utilization of resources, minimizing the damage of the local resources.

5.1.3 To protect the typical forest ecosystem within the silviculture area and maintain its natural status.

5.1.3.1 The typical forest ecosystem shall be ascertained within the silviculture area through investigation.

5.1.3.2 Measures of protecting typical forest ecosystems shall be formulated.

5.1.3.3 To implement protection measures and maintain the natural status of typical ecosystem.

5.1.4 To take effective measures to restore, maintain and

enhance biodiversity.

5.2 Environment Impacts

5.2.1 The impact of the silviculture activities upon environment shall be considered.

5.2.1.1 To make environment influence evaluation on the silviculture operations on the basis of the scope, intensity and resource characteristics of silviculture.

5.2.1.2 The silviculture operating methods shall be readjusted on the basis of the evaluation results, reducing the impacts of logging, skidding, transportation, etc. upon the environment.

5.2.2 To adopt various protection measures to farthest maintain the natural properties of forestland, avoid land degradation and protect water resources.

5.2.2.1 To adopt effective measures to minimize the damage of land preparation, afforestation, logging, renewal and road construction and some other human activities upon forestland, and maintain the natural properties of forest soil as well as its long-term productivity.

5.2.2.2 To reduce the negative impact of silviculture operations upon the quality and quantity of water resources, control water or soil erosion and prevent severe damages to forest water catchment.

5.2.2.3 It is advisable to establish sufficiently wide buffer zone along the banks of streams for water and soil conserva-

tion.

5.2.2.4 It is advisable to utilize the organic fertilizer and bio-fertilizer to enhance the fertility of the soil while reducing the use of chemical fertilizer.

5.2.3 To strictly control the use of chemical agents, reducing the environment impact due to the use of chemical agents.

5.2.3.1 No pesticides clearly prohibited by the law and statutes of the host country or relevant international conventions shall be used.

5.2.3.2 Appropriate equipment and technological training shall be provided to reduce the pollution caused by chemical agents on environment and harm to human health.

5.2.3.3 To adopt the methods, in conformity with the requirements of environmental protection, to handle the refuse and containers of chemical agents.

5.2.4 To strictly control and monitor the import and invasion of alien species and prevent their serious ecological consequences.

5.2.4.1 To ensure that the introduction of alien species is conducted through quarantine on condition that environment and biodiversity shall not be damaged.

5.2.4.2 The use of alien species shall be put on records and its ecological impacts shall be monitored.

5.2.4.3 To formulate and implement the measures against

the invasion of harmful alien species.

5.2.5 To safeguard forest ecosystem services.

5.2.5.1 To find out and ascertain the forest ecosystem services with the silviculture area, such as forestry tourism, education, scientific research, fishery and husbandry resources, water conservation, etc.

5.2.5.2 To adopt measures to safeguard the relevant values and services of forest, high conservation value forest in particular.

5.3 Forest Conservation

5.3.1 To formulate the plan for preventing and treating harmful forest living organisms, adopt, on the basis of afforestation measures, biological, chemical and physic measures, which are environmentally friendly.

5.3.1.1 The treatment of the harmful forest living organisms shall be in conformity with the requirements of the law and statutes of the host country.

5.3.1.2 Conditions permitting, forecasting of harmful living organisms shall be conducted, evaluating the potential impact of harmful forest impact and formulating prevention and treatment plans accordingly.

5.3.1.3 To adopt a series comprehensive measures which mainly contain afforestation measures and combines biological, chemical and physical prevention and treatment. The use of chemical pesticides shall be prohibited in the forest,

avoid or reduce the impact of chemical pesticides upon environment.

5.3.1.4 To adopt effective measures to protect various beneficial living organisms in the forest and enhance the health level of forest.

5.3.2 To establish sound forest fire prevention system, formulate and implement fire prevention measures.

5.3.2.1 To establish forest fire prevention system in accordance with the law and statutes of the host country.

5.3.2.2 To line out forest fire risk areas within silviculture regions.

5.3.2.3 To formulate and implement forest fire monitoring and prevention measures.

5.3.2.4 To build forest fire prevention facilities, establish fire prevention organization responsible for the forest fire prevention and fire fighting.

5.3.2.5 To conduct forest fire statistics and establish fire records.

5.4 Forest monitoring

5.4.1 To establish appropriate forest monitoring system and forest resource records, continuously or regularly monitor forest resources.

5.4.1.1 To conduct forest resource investigation and establish the system of forest resource records.

5.4.1.2 To establish appropriate monitoring system and

procedure and ascertain the mode, frequency and intensity of forest monitoring on the basis of the company's own silviculture scope and intensity as well as the local conditions.

5.4.1.3 To continuously and regularly conduct various monitoring activities in accordance with the monitoring system.

5.4.1.4 To compare and evaluate the monitored results.

5.4.1.5 The monitored results shall be reflected in the formulating or revising silviculture scheme and operating plan.

5.4.2 Forest monitoring shall include the status quo of the resources, silviculture as well as its social and environmental impact monitoring, etc.

Forest monitoring shall include the following:

(1) the storage, yield and resource consumption about mainly forestry products;

(2) the forest structure, growth, renewal and health situation;

(3) the varieties of fauna and flora and their changing trend;

(4) the impact of logging and other business operations upon the society and environment;

(5) the cost and benefit of silviculture;

(6) The implementation of annual operating planning.

6 Community Development

6.1 Try to provide employment, training and other social

service opportunities for the residents in the forest area and neighboring communities.

6.2 Try to safeguard the legal rights and interests of the employees, encourage the community residents to participate in the decision-making of silviculture activities.

6.3 No infringement of the legal rights of forest and other resources enjoyed by the local residents shall be tolerated.

6.3.1 To adopt appropriate measures to prevent silviculture activity from directly or indirectly threatening or impairing the resources or the right of use of the original settlers.

6.3.2 When the local settlers voluntarily entrust their rights of resource management to a Chinese enterprise, a contract or agreement shall be signed by both sides.

6.4 To establish a consultative mechanism with the local community. Take the initiative to consult with the original settlers, line out and protect the forestland which is characterized by specific cultural, ecological, economical or religious significance to the local settlers, especially in the dwelling place of multiethnic groups.

6.5 To make the forest monitoring results, when necessary, known to the public on the prerequisite of information confidentiality.

Appendix A

(An Informative Appendix)

Relevant International Conventions, Agreements and Declarations

- A. 1** *Convention on Biological Diversity*
- A. 2** *Vienna Convention for the Protection of the Ozone Layer*
- A. 3** *Convention of Climate Change and Biodiversity*
- A. 4** *United Nations Framework Convention on Climate Change*
- A. 5** *International Convention for the Protection of New Varieties of Plants*
- A. 6** *Convention on the Conservation of Migratory Species of Wild Animals*
- A. 7** *Convention of the International Trade in Endangered Species of Wild Fauna and Flora*
- A. 8** *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*
- A. 9** *Convention for the Protection of Birds*
- A. 10** *Agreement Concerning the Cooperation on Plant Quarantine and Infestation and Diseases Prevention*
- A. 11** *Agreement Concerning the Conservation of Migratory Birds and Their Habitat*
- A. 12** *International Tropical Timber Agreement*
- A. 13** *The Rio Declaration on Environment and Development*

Appendix B

(A Normative Appendix)

Explanation of the Terminology

Used in the *Guide*

In order to distinguish the clauses of the *Guide* during its implementation, the different degrees of strictness of the phrases are explained as the following :

- B.1** Shows extreme strictness, which must be executed without any alternative;
Positive phrase: “must”; negative phrase: “strictly prohibit”.
- B.2** Shows some strictness, which shall be executed under normal circumstances;
Positive phrase: “shall”; negative phrase: “shall not” or “be not allowed”.
- B.3** Allows a little freedom of choice, which shall be executed first if condition permits;
Positive phrase: “should” or “may”; negative phrase: “should not”