

生物碳基金

Bio Carbon Fund

中国广西珠江流域治理再造林项目实践

**Practice of Facilitating Reforestation Project for
Guangxi Watershed Management in Pearl River Basin**

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中国广西珠江流域治理再造林项目实践

Practice of Facilitating Reforestation Project for Guangxi Watershed Management in Pearl River Basin

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一、背景和意义 Background and Significance

- 1、项目背景
- 广西地处珠江的中、上游地区，是珠江流域的重点治理区。该区域的生态保护与建设对珠江流域经济圈有着举足轻重的作用。但目前流域范围的森林植被破坏严重，森林质量较差，水土流失、石漠化等生态问题突出。
- 1. Background
- Guangxi is located in the middle and upper reaches of Pearl River, it is the key area of ecological protection and has high significance to the Economic Circle of Pearl River.
- However, forest and vegetation is seriously disturbed, forest quality is poor, it faces the problem of soil and water erosion, and stone desertification etc.

一、背景和意义 Background and Significance

- 由国际复兴开发银行生物碳基金支持，建设规模4000公顷
- 布局在珠江中、上游的广西环江毛南族自治县和苍梧县，每县2000公顷。

Supported by the support of Bio Carbon Fund, the project with the scale of 4,000 ha.

2,000 ha for each of Huanjiang Maonan Autonomous county and Cangwu county in the middle and upper reaches of Pearl River.

一、背景和意义 Background and Significance

- 2、项目意义
- 2.1、本项目是中国乃至全球第一个获得CDM执行理事会注册的林业碳汇项目。
- 2.2、项目的基线方法学和监测方法学是第一个被CDM执行理事会批准的林业碳汇项目的方法学
- 2.3、随着该项目的实施，将会吸引更多的发达国家到我国开展林业碳汇项目

- 2. Significance
- 2.1 It is the first forest carbon sequestration project registered at CDM Executive Board in the World.
- 2.2 The baseline methodology and monitoring methodology of the project is the first one approved by CDM Executive Board.
- 2.3 It will attract more developed countries to develop forest carbon sequestration project in China.

一、背景和意义 Background and Significance

- 2.4、有利于推动我国森林生态效益补偿机制的实施进程
 - 2.5、有利于促进贫困边远山区林业和社会经济可持续发展
 - 2.6、有利于改善项目区的生态环境
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- 2.4 It will promote the implementation of forest ecological benefit compensation mechanism in China
 - 2.5 It will promote the sustainable development of forestry and social economy in remote and poverty area.
 - 2.6 It will improve the ecological environment of the project area.

二、项目活动 Project Activities

• 1、项目区位置

- 环江毛南族自治县：830公顷邻近广西木论国家级自然保护区和九万山国家级自然保护区，1170公顷位于两个保护区之间；
 - 苍梧县：2000公顷在水土流失严重地区。
 - 共涉及苍梧县4个镇的13个村，环江县6个镇的14个村，5000多农户，52块造林地
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- 1. Location of the project area
 - Huanjiang county: 830 ha is adjacent to Mulun Nature Reserve and Jiuwanshan Nature Reserve, 1,170 ha is between the two nature reserves.
 - Cangwu county: 2,000 ha at the area with serious water and soil erosion.
 - More than 5,000 households, 27 villages, 10 townships and 52 pieces of land involved.

二、项目活动 Project Activities

2、项目实施主体

- 注册单位：广西环江兴环营林有限责任公司
- 具体实施的主体：
- 苍梧县康源林场、苍梧县富源林场、环江县绿环林业开发有限公司、环江县兴环林业开发有限公司（3560公顷）
- 和18个农户小组、12个农户（440公顷）
- county
- 2. Project implementation entities
- Registered unit: Guangxi Huanjiang Xinghuan Forest development Co.,Ltd
- Specific implementation entities and households
- 2 forest farms, 2 forest development companies (3,560 ha)
- 18 households groups and 12 individual households (440 ha)

二、项目活动 Project Activities

- **3、树种的选择**

- 遵循适地适树原则，并尊重农民的意愿，同时考虑树种的碳吸收能力、生物多样性保护以及相关林产品的价值等因素。确定造林树种为马尾松、杉木、枫香、荷木、大叶栎和桉树。

- **3. Species selection**

- Following the principle of plant trees in suitable land, respecting the opinions of farmers and taking the objective such as carbon sequestration capacity, biodiversity protection, water and soil conservation and values of forest products etc. into consideration, mason pine, Chinese fir, maple, schima, broad leaf oak and eucalyptus that is the only exotic species.

二、项目活动 Project Activities

- **4、利益分配形式**

- 本项目有两种投资方式：（1）农户（组）提供土地，公司、林场出资造林；（2）农户（组）完全自主经营。对第一种形式，林木收成4：6分，碳汇受益6：4分；第二种形式，当然是林木与碳汇收益都全部归农户（组）。

- **4. Forms of benefit allocation**

- There are two forms of investment: (1) households (group) provide land, and forest companies/farms invest plantation cost; (2) households (group) invest for their own land. For the form one, the share of households (group) and companies /farms is 4:6 for forest product and 6:4 for carbon sequestration income. As for form two, all benefits from forest products and carbon sequestration income go to households (group)

二、项目活动 Project Activities

- 6、项目活动采用的主要技术
 - 6.1 林地清理和整地
 - 6.2 树种配置
 - 6.3 抚育及施肥
 - 6.4 森林管理
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- 6. Main technologies
 - 6.1 Land cleaning and site preparation
 - 6.2 Species arrangement (pure and mixture)
 - 6.3 Tending and fertilization
 - 6.4 Management

二、项目活动 Project Activities

- 7、项目活动时间表
- 项目建设期为2006~2008年，主要是造林与抚育。
- 运行管理期为2009~2037年，包括森林病虫害防治、防火、护林、采伐、更新造林、管理、减排量监测等。
计入期为30年固定期。起始日期为2006年4月1日。

7. Schedule

- The plantation establishment lasts from the beginning of 2006 to the end of 2008. Mainly planting trees and tending.
- The management period will last till year 2037. Mainly pest and fire control, harvesting, replanting, management and monitoring.
- Credit period is 30 years and the start date is April 1, 2006

三、土地的合格性和额外性

Eligibility and additionality of land

- **1、土地的合格性**
- 项目造林地自1989年以来一直为严重退化的低生产力荒地，尽管有小面积的土地上有少量树木，但其树冠郁闭度远低于20%。有1989年和1999年广西森林资源调查的土地利用和土地覆盖图证明，通过对当地农民和社区的访问调查得到确认。
- **1. Eligibility**
- The project sites have been seriously degenerative wasteland with low productivity since 1989. Some sites covered with few trees but the crown much less than 20%. This can be proved with the Land Use Maps obtained from the forestry inventory done in 1989 and 1999, and be confirmed through the interviews with local communities and households.

三、土地的合格性和额外性

Eligibility and additionality of land

- **2、土地的额外性**
- 2.1 项目造林地属林业用地，只能用于林业用途。
- 2.2 由于造林地偏远，立地条件差，并存在资金、技术、机构障碍和市场风险，最大的可能是维持现有的退化荒地状态。

- **2. Addidionality**
- 2.1 The project sites are forestry land and can be only used for forestry purpose.
- 2.2 Due to the remote distance, poor site condition, lack of fund and technology, institutional barriers and market risks, it is most possible that these sites would be kept their current status as degraded wasteland for a long time.

三、土地的合格性和额外性

Eligibility and additionality of land

- 2.3 项目活动的财务分析显示，其内部收益率，在有碳汇收益和没有碳汇收益的情况下，分别是15.02%和8.53%（按照每吨CO₂4美元的价格，30年的计入期计算）。
 - 因此，项目活动不进行碳汇贸易时，是没有经济吸引力的。
 - 2.4 这些地方不是国家发展计划或私企投资考虑的区域
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- 2.3 Financial analysis showed that the IRR of the project is 15.02% and 8.53% respectively with and without carbon sequestration income (the calculation based on 4 US\$ CO₂ per ton and 30 years credit period). Therefore the project is not attractive in economy without carbon sequestration trade.
 - 2.4 This area will be not considered by government development plan or private enterprises.

四、碳汇价格 Price of carbon sequestration

- 在2005年5月27日与国际复兴开发银行（生物碳基金托管人）签订的项目碳汇购买意向书中，价格是4.00 US \$ /tCO₂。
- 而在2006年4月3日与国际复兴开发银行关于项目排放减量购买协议的技术性谈判中，国际复兴开发银行同意将价格提高到4.35 US \$ /tCO₂。
- 对正准备付诸实施的广西二期项目,谈判价为 5 US \$ /tCO₂。
- It was 4.00 US \$ /tCO₂ in the Intent Letter signed with IBRD (Trustee of Bio Carbon Fund) on May 27, 2005.
- IBRD agreed to rise the price up to 4.35 US \$ /tCO₂ during the technical negotiation on Emission Reductions Purchase Agreement on April 3, 2006.
- For the second project, the negotiation price is 5 US \$ /tCO₂

五、项目效益与风险评估

Assessment of benefits and risks

- **1、社会经济效益**
- 1.1 为中国乃至全球林业碳汇项目的实施起到示范作用
- 1.2 增加社区农户的就业机会和经济收入
- 1.3 提高社会凝聚力
- 1.4 可持续的薪柴使用
- 1.5 技术培训示范

- **1. Social-economic benefit**
- 1.1 Demonstration for implementation of forest carbon sequestration project in China and even in the world
- 1.2 Creating work opportunity and income for local communities
- 1.3 Strengthening social cohesion
- 1.4 Sustainable fuelwood supply
- 1.5 Technical training and demonstration

五、项目效益与风险评估

Assessment of benefits and risks

- **2、环境效益**
- 2.1 增强生物多样性，提高森林覆盖率，为野生动植物提供更为适宜的栖息和繁衍场所。
- 减少当地社区因采集薪柴造成的对自然保护区的压力。
- 2.2 改善项目地区水土流失状况，缓解自然灾害。
- 2.3 改进珠江流域治理及其生态系统。
- **2. Environment Benefit**
- 2.1 Enhancing biodiversity, increasing forest coverage rate, and providing better habitat for wildlife.
- Reducing the pressure of fuelwood collection of local people on the nature reserves.
- 2.2 Improving the status of water and soil erosion, alleviating the damage of nature disasters.
- 2.3 Improving the watershed management and ecological system of Pearl River.

五、项目效益与风险评估

Assessment of benefits and risks

- **3、项目风险**

- 3.1 潜在的环境风险：主要表现在树种选择不当、整地方法不当引起新的土壤侵蚀、施用化肥和农药等对水质和自然环境产生污染等。

- 3.2 潜在的经济风险：主要表现在项目所营造的林地管理不善，比如遭到了病虫害或火灾风险，引起项目失败或带来损失。

- **3. Project risk**

- 3.1 Potential environment risk: improper selection of tree species, wrong measures of site preparation and application of fertilizer and pesticide cause new soil erosion, water and natural environment pollution etc.

- 3.2 Potential economic risk: improper management of plantation causes fire, disease and pest damage, and results loss or failure of the project.

五、项目效益与风险评估

Assessment of benefits and risks

- 3.3 市场风险和不确定因素
- 由于造林碳汇项目的方法学复杂以及其所特有的非持久性、不确定性等问题，现在很多欧盟国家对植树造林产生的碳汇还持怀疑态度而不被接受，只有意大利、加拿大、日本等少数国家购买。因此，市场需求量比较小。

- **3.3 Market risk and uncertainties**

- Many countries in EU are doubtful about forest carbon sequestration because of the complexity of the methodology, and the non-persistence and uncertainties of forest carbon sequestration. It is only purchased by few countries such as Italy, Canada and Japan.
- Therefore, the market is limited..

六、障碍分析 Analysis of Barriers

- 影响项目活动实施主要有以下四方面的障碍：
- 1、意识障碍: 农户缺乏契约意识，易受外界影响，改变主意。造林后的保存存在很大问题。
- 2、投资障碍: 当地社区收入水平低，缺乏长期投资资金，同时也难从银行获得贷款用于造林。
- 项目的前期准备工作量大、监测任务繁重。资金将是很大问题。

There are mainly 4 barriers in the project implementation:

- **1. Contract awareness:** The local households lack of contract awareness, they are easily to change minds, this makes the project plantation difficult to be maintained.
- **2. Funds barrier:** The income of local people is too low to afford for long-term investment. Meanwhile, they have difficulties to get loan from banks for afforestation.
- Too much work for the project preparation and monitoring, the cost will be a big problem.

六、障碍分析 Analysis of Barriers

- 3、技术障碍 当地农户不了解适宜当地的优质种源，缺乏生产优质苗木和在退化土地上造林的技术、缺乏管护与防治病虫害的技能。
- 4、市场障碍 木产品市场与碳汇市场。农户不了解市场，特别是边远山区的经营成本高，其产品缺乏竞争力。
- **3. Technology barrier:** The local people have very little knowledge of species selection, planting and management, pest control etc and they are especially lack of technologies for planting trees at degraded land.
- **4. Market barrier:** Forest product market and carbon sequestration market. Local people lack of market information, the cost of wood products produced from remote area is high, has no competition capacity.

谢谢!

Thank you for your attention