

## Environmental and Social Data Sheet

### Overview

Project Name: CFFL- Fujian Forests

Project Number: 2015-0096

Country: China

Project Description: The project is to afforest 7,730 ha of barren forestland with *Sapindus* and Chinese fir and to rehabilitate 2,320 ha of existing stands in Fujian province, China. The goal is to establish continuous cover forestry on previously barren lands and to improve productivity of soap nut trees that provide valued saponins for the biochemical industry.

EIA required Yes

Project included in Carbon Footprint Exercise<sup>1</sup>: Yes

### Summary of Environmental and Social Assessment, including key issues and overall conclusion and recommendation

The project is to establish new forests on barren, cut-over lands and to improve existing forest stands in mountainous areas of Shunchang County in Fujian Province. The investment also diversifies forest habitats by planting mixed stands of Chinese fir and broad-leaved *Sapindus* trees. The latter species produce soap nuts that contain saponins, a valuable natural raw material for chemical and cosmetic industry.

The planted trees sequester greenhouse gases and store carbon, while protecting steep slopes against harmful soil erosion. Sustainable forest management practices are implemented so as to comply with internationally accredited forest management systems. The State Forest Farm, which is one of the two project implementing entities, already has FSC certificate for its forest management. The other project implementing entity, which is a private Company, is upgrading its management systems to comply with certification standards and, once the project advances, it will apply for forest certification.

The EIA (Environmental Impact assessment) and the SIA (Social Impact Assessment) were prepared in 2015. The assessment covers all 171 villages involved in the project.

The project county of Shunchang belongs to subtropical climate zone with mild temperature and abundant rainfalls, good hydrothermal condition, ideal for tree growing. It is located in the Northern Fujian Province (North latitude 26°38'-37°12' and East longitude 117°29'-118°14').

From an environmental point of view, the key concern is soil erosion, especially in the soil scarification and road building, leaching of nutrients due to fertilizing and potential pest invasions, draughts or fires. Appropriate mitigation measures are integrated in the project implementation. They include, among others, promotion of mixed stands of Chinese fir and *Sapindus* that diversify the habitat structure, and buffer zones to protect soils and biodiversity. Advanced information systems are built as grounds for sustainable and professional forest management. The systems include digital mapping of individual project sites, their special characteristics and records of measures implemented on the sites.

<sup>1</sup> Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO<sub>2</sub>e/year absolute (gross) or 20,000 tons CO<sub>2</sub>e/year relative (net) – both increases and *savings*.

## Environmental and Social Assessment

### Environmental Impact and Mitigation

The project will have a positive climate impact through establishing and improving forest stands in the region. Long term vegetation increases carbon storage in the region, and the carbon footprint remains large positive despite small increased emissions from transport and fertilizing. The result is compatible with the PR China 12<sup>th</sup> Five Year Plan and China's National Climate Change Program (CNCCP) that have the target to increase the forest areas up 21.7% ratio by 2015. The CNCCP also confirmed the important role of China's forestry sector in reinforcing the capacity to absorb greenhouse gases, and to support ecological protection and development.

The project is expected to improve the environment by establishing new resilient mixed forests with soap nut (*Sapindus mukorossi*) and Chinese fir (*Cunninghamia lanceolata*). The established forests will form a permanent forest cover and supply high value saponins for industrial use and wood for local consumption. The project advocates the use of improved varieties and management regimes that would assure healthy stands with high yields and conformity to international sustainability standards. The forest stands with a long rotation period will improve the adaptation to climate change, e.g. to heavy storms, rains or droughts.

The project sites are established on cut-over or burnt land, or abandoned low productivity agricultural lands. The afforestation of mixed stands of *Sapindus* and Chinese fir will have positive impacts on biodiversity and soil protection. Only high quality seedling material is used and the project supports identification and grafting of resilient and highly producing *Sapindus* clones. *Sapindus* and China fir are both native to China and the Fujian province.

The following environmental risks have been identified and will be taken into account:

- Planting requires removal of existing vegetation and soil scarification which increases the risk for erosion and species loss especially during the first year.
- Fertilization increases risks for nutrient run off to waters resulting in water contamination.
- Plantations may be prone to attacks of pests and diseases and uncontrolled fires. Application or storage of pesticides will cause environmental and health risks. Restricted genetic diversity in planted trees (3 clones per site) may also increase the risks for pests.

Project has defined mitigation measures to tackle the possible environmental risks and to strive for sustainable and certifiable forest management. The listed mitigation measures include, among others:

- Appropriate mapping of project sites and assurance on that they are not part or linked to valuable or protected forest areas.
- Leaving of buffer zones and stripes of natural vegetation.
- Mixed stand structure.
- Appropriate timing and implementation of soil preparation, planting fertilizing and pest control.

### Social Assessment

The direct beneficiaries are Shunchang State Forest Farm and a Shunchang Sanqing *Sapindus* Biotechnology Co. Ltd (The Company). The Company will process the soap nuts to saponin powder. The two parties contract land from village collectives and individual farmers in the villages. A total of 171 villages and 6 000 households are involved in the project. Due to the long rotation periods of the two species, the land leasing contracts are made for 30 years. The beneficiaries and farmers have long term experience in cultivation of Chinese fir and *Sapindus*.

In the social impact assessment, independent experts consulted farmers in all villages to find out the concerns, possible mitigation measures and potential risks for project success.

The major social risks for successful implementation of the project include:

- Benefit sharing where especially poor households or minority people are unintentionally marginalized.

- Labour shortage, especially in nut collection season. Rural labour force is typically dominated by elderly people and women due to high migration rate of young men to cities. Migrant workers may be recruited to work on plantations which would require development of additional social services.
- The provincial plan to double the soap nut production may lead to over production and unfavourable price development of the nuts.

To mitigate the identified risks, the project will develop mechanisms to track and minimize unintended social and socio-economic disadvantages to different groups of people, especially poor households, women and minority groups.

The village committees have been given a key role to inform farmers and defend their rights in land leasing. The State Forest Farm has established standard long term contracts together with village committees on utilization of collective village lands. The Company makes a preliminary contract on land leasing with village committees, but a more detailed contract is negotiated and signed with individual farmers that allocate their tenure right to the Company. Land lease contracts and especially the price indexing, exit clauses and benefit sharing have been scrutinized during the appraisal and all parties are aware of the requirements for long term contracting under time and inflation.

In case of conflicts related to lease contracts, households can appeal to Village Committees and township/county level arbitration bureaus.

The project takes measures to improve labour safety and gender equality. It does not threaten the interests of particular minority groups and does not include resettlement.

### **Public Consultation and Stakeholder Engagement**

A participatory consultation in each village was carried out in early 2015. The consultation provided information on the planned project and discussed options for its implementation (species selection, management principles, impacts on land use, etc.). Consultation also contributed to the identification of farmers willing to lease their land to the project. During the consultation, farmers were also informed about contractual terms on land leasing. Their participation in the project is voluntary. Village committees in the participating villages have made the decision to support the participation to the project.

During the mission in April 2015, the villagers, farmers and other stakeholders were well aware of the project, its benefits and risks for the participants.

### **Carbon footprint**

The project implementation increases carbon sequestration to tree stands but on the other hand transportation and decomposing of nitrogen fertilizers cause greenhouse gas emissions.

However, the project has a net carbon sequestration balance due to long-term sequestration of carbon in growing trees. The calculation method used in the project takes into account the biomass accumulation to whole tree included branches and roots. Sapindus trees will grow up to 90-100 years and they will not be felled during the project cycle which increases the net carbon sequestration rate of the project.

The carbon balance calculations in the project are done according to the "*Guides to Calculating and Monitoring Carbon Sink of Forestation Project*". During the project period of 25 years, the forest stands remaining at the end of the project cycle will store carbon about 919 000 tons, which corresponds to the sequestration of 3.34 million tons of CO<sub>2</sub> during the project cycle. In average sequestration rate of CO<sub>2</sub> is about 135 000 tons per annum.

The project's CO<sub>2e</sub> emissions are small and they consist of fertilization and transportation. The baseline emissions without the project are estimated at 20% of the fertilizing and transportation emissions with the project. As a result, the net carbon sequestration is estimated at 126 000 tonnes of CO<sub>2e</sub> per year.