

Environmental and Social Data Sheet

Overview

Project Name:	CCCFL- Shanxi Yellow River Basin Forests
Project Number:	2014-0642
Country:	China
Project Description:	The project establishes 19,140 hectares of new forests on environmentally vulnerable erosion-prone slopes and abandoned agricultural lands in the watershed area of the Yellow River in Shanxi Province. The project is an allocation under the China Climate Change Framework Loan (2006-0086).
EIA required	Yes
Project included in Carbon Footprint Exercise ¹ :	Yes

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

Shanxi province is located in a mountainous area of Northern China which is characterised by severe deforestation and soil erosion. Coal mining is a strong industry in the region.

The project's establishment of new, sustainably managed plantations is expected to generate significant environmental benefits, including reduced soil erosion in particularly vulnerable areas and improved management of the important Yellow River catchment area, helping to address flash-flood risk and siltation. The majority of the plantations (72%) will have a protective function, being primarily orientated towards delivering ecological benefits. The project will increase the forest cover in the participating counties by 3.8%, contributing to the Chinese forest authorities' challenging afforestation targets.

The project contributes to both climate mitigation and adaptation: the new, well-planned forests will increase carbon sequestration through biological growth, and are also expected to reduce exposure to climate-related risks such as soil erosion and flash flooding associated with climate-related weather extremes. The planted forests are estimated to result in a relative carbon footprint of approximately -119 kt CO₂e / a on average over the 25 year project cycle.

The planted forests will be suitably diversified: altogether 12 different tree species, all native to the region, will be planted.

Sustainable forest management practices and forest certification will be promoted under Chinese Forest Certification System (CFCS), accredited under the PEFC. The project introduces better data management systems and project monitoring practices for sustainable forest management.

In addition to the improved living environment, social benefits include employment opportunities and income generation from timber and seedling production. In addition, the land productivity and rents are improved through better soil-species matching.

¹ 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 CO₂e/year absolute (gross) or 20,000 tons CO₂e/year relative (net) – both increases and *savings*.

An Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) were prepared in 2014. The ESIA is required by Chinese regulations.

Although the project is ecologically-orientated, environmental risks in project implementation may arise from increased erosion during site preparation, and inadequate site-species matching. These risks are mitigated through appropriate management regimes and protocols, and by the 10-year experience of local and provincial forestry sector in establishment of plantations in these harsh and challenging climate conditions.

Relevant conditions and undertakings:

Disbursement Conditions

- The relevant authorities have issued the environmental permits for the project.

Particular Undertakings

- The Promoter undertakes to comply with the European Union and Chinese laws and regulations on the use of chemicals;
- The Promoter shall follow the Environmental Management Plan as included in the EIA procedure, as well as any other requirement specified in the approvals from the relevant Chinese authorities;
- The Promoter shall provide a forest certification roadmap, satisfactory to the Bank, in order to demonstrate measurable progress towards forest certification under an internationally accredited forest certification scheme, such as CFCS or FSC.

Environmental and Social Assessment

Environmental Impact and Mitigation

The project will have a positive climate impact through increased forest cover and improved forest management practices. Growing trees sequester and store carbon both in vegetation and in soils, resulting in significant net sequestration benefits despite increased emissions from transport and fertilizing. The People's Republic of China's 12th Five Year Plan and China's National Climate Change Program (CNCCP) have the forestry objective of increasing the forest area by 12.5 million hectares in order to attain 21.7% forest cover by 2015. These ambitious targets make this the world's largest afforestation programme. 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. Shanxi Province has challenging annual afforestation targets and the project contributes to meeting these targets.

In addition to the carbon sequestration, the environmental benefits include water and soil conservation and positive impact on biodiversity by creating permanent forest habitats on barren hills and slopes.

The main concerns from an ecological point of view are related to soil disturbance during planting and to the potential leaching of nutrients or chemicals after application of fertilizers or pesticides. Adopted mitigation measures include batch type soil scarification on hilly areas where manual scarification is often the only alternative, and hole/band application of fertilizers. Pesticide use is the minimum possible and will be controlled and coordinated with forestry authorities.

Social Assessment

The project area includes over 1,700 villages with over 400,000 rural households with a population of 1.1 million people. Work based migration is typical to the region and most young men are working for mining, transport or other businesses. As the result, many households are run by women or elderly people alone or together in extended families. The project regions do not have ethnic minorities and the project does not require any resettlement.

The largest number of individual farmers benefit from the project through salaries and land rents received from their collectives or cooperatives. The employment opportunities and land rents are important especially to women led households and elderly persons.

The project will have a positive social impact in general. However, the SIA defines some potential social risks. The main social risks are potential conflicts related to land leasing contracts and appropriate indexing of annual rents. In case of conflicts related to lease contracts, households can appeal to Village Committees and township/county level arbitration bureaus.

Financial profitability is associated with some risks and uncertainty, and this may decrease the long term commitment to the project. There is also a minor risk on marginalization of poor and small households, and especially women-led households. Periodic shortage of labour may also be a problem. On the other hand employment opportunities e.g. in mining industry have decreased which has increased the available labour in many rural areas in the Province.

To mitigate the identified risks, participatory planning is applied in project design and site identification at village and township levels. To support the negotiation skills of the beneficiaries, the project provides templates for land lease contracts that include provisions for periodic increase in the land rents.

The project funding is given as a loan to county level forestry bureaus that distribute it further to collectives and other beneficiaries. The loan is largely provided in form of free planting materials and compensation for labour input. In some cases, compensation may be paid as a premium for successful plantation. To mitigate financial risks, limited insurance mechanisms are available at county/township levels.

Public Consultation and Stakeholder Engagement

Social survey and participatory consultation at village, township and county level were carried out by Shanxi Academy of Forestry Science in August-September 2014. The survey included interviews with village collectives, cooperatives and farmers in the communities.

Farmer and villager participation is voluntary. During the mission in December 2014, the villagers, farmers and other stakeholders were well aware about the project and about its benefits for the participants. The land lease contracts with clauses on benefits sharing were already signed.

Carbon footprint

The planted trees sequester carbon dioxide while transportation and nitrogen fertilizer applications emit greenhouse gases.

However, the project has a large positive net carbon sequestration balance due to long-term sequestration of carbon into trees. Large share of protection forests and fruit tree stands assure steady increase in carbon stocks on the project areas.

The carbon footprint is estimated by Chinese experts. The planted trees are expected to sequester annually on average 119.1 kilotons of CO₂e. This would amount to 1.6 m tons of CO₂e in total over the 25 year project period. Due to the protective nature of the planted forests and long rotation of walnut trees, a large share of the woody biomass will remain as the carbon storage also beyond the project cycle.

Greenhouse gas emissions from decomposing of 31.5 tonnes of fertilizer over the 25 year project period are estimated at 7.2 kilotons of CO₂e, i.e. on average 0.29 kilotons per year. The estimated emissions from transportation are small, 0.25 kilotons of CO₂e over the project cycle, i.e. 0.01 kilotons per year.

Without the project it is estimated that long-term plantations would not be successfully established due to progressive degradation and erosion on the sites, resulting in loss of

carbon from the system, while some transport and fertiliser emissions would continue. Therefore it is estimated that the project will result in a relative carbon footprint of approximately 118.9 kt CO₂e / a on average over the 25 year project cycle.