Ex post evaluation – People's Republic of China

Sector: Forestry development (CRS code 31220)
Project: Sichaun afforestation – (1) 1997 65 397*, (2) 1998 66 971 (follow-up project)
Programme executing agency: Sichuan State Forestry Administration

Ex post evaluation report: 2014

		Project** (Planned)	Project (Actual)
Investment costs (total)	EUR million	12.16	15.90
Counterpart contribution	EUR million	3.47	7.20
Funding	EUR million	8.70	8.70
of which BMZ budget funds	EUR million	8.70	8.70

*) Random sample 2014
**) including follow-up project

Description: The project (FC, EUR 6.14 million and follow-up project of EUR 2.56 million) makes a contribution to the national forest protection programme on the upper and middle Yangtze river, which aimed at afforestation of around 240,000 ha in the project area. The main elements of the FC project were the afforestation and protection of vegetation of around 40,000 ha. The local population should be involved closely in the reafforestation practices. The focus of the FC follow-up project was on sustainable forest management. In addition, the FC project comprised energy-saving measures to reduce the need for firewood, forest management training and consulting services.

Objectives: The afforestation and natural cultivation of the protected areas in the mountain district of North Sichuan (project objective) should contribute towards the protection of natural resources (overall objective). Additionally, the compensation paid for the afforestation work carried out by the local population should improve their income situation (project objective).

Target group: The target group was the rural population living in the Guangyuan prefecture project area (totalling approx. 2.5 million people), of which some 40% were living below the national poverty line at the time of the project appraisal.

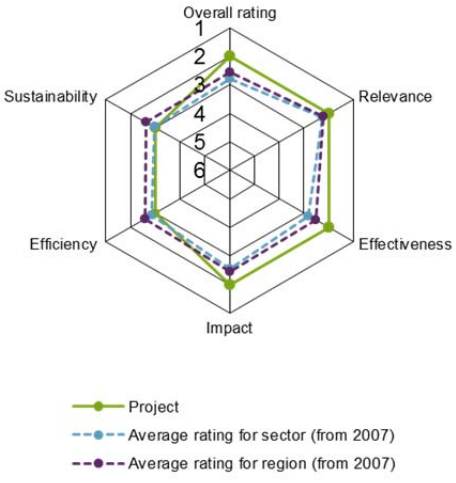
Overall rating: 2

Rationale: High degree of relevance, efficacy and overarching developmental impact with satisfactory efficiency and sustainability.

Highlights: The project was fully embedded in the national afforestation programme and introduced groundbreaking innovations in forest management (participation, natural cultivation methods) in Sichuan province.

The compensation payments for afforestation work, made a short-term contribution towards reducing poverty; this is no longer guaranteed in the medium and long term.

The epicentre of the devastating earthquake in 2008 (7.8 on the Richter scale) was in the project area. A considerableproportion of the infrastructure funded there was destroyed. This reduces the efficiency of the project.



Rating according to DAC criteria

Overall rating: 2

Relevance

At the time of the project appraisal, the objectives in relation to protecting resources and combating rural poverty in underdeveloped regions corresponded to China's development priorities, as well as those of the German government. Because of China's size, securing soil and forest resources is still of global importance today. In addition, the objectives are in line with the MDGs (especially MDG1, halving poverty and MDG7, ensuring environmental sustainability).

The underlying results chain seems plausible. Key aspects for securing the project goals and the overarching effects were arranged by: compensating local farmers for afforestation work carried out (during the first three years), introducing four forestry models suited for different locations, contractually agreeing land use rights for the first time (for farmers), as well as involving farmers for the first time in the decision-making process about participation and selection of tree types. However, the targeted effect of reducing poverty by significantly increasing agricultural productivity, was "outpaced" completely by the country's dynamic economic development, which massively boosted the incomes of families living in the project area through migration.

The measures taken in the Tangjiahe National Nature Reserve were aimed at preserving rare animal and plant species, including the giant panda, of which only some 1,000 are still living in the wild, and are therefore of great ecological importance.

The strong Chinese ownership manifested itself, among others, in its high own contribution (45 %) and in the massive national afforestation programmes of the last two decades. Further evidence is provided by the changes made to the forestry laws where the rural population will have greater participatory involvement and the meanwhile almost nationwide contractual assurance of long-term land use (70 years) for non-state forestry land (approx. 60 % of total forest area, 2012).

Relevance rating: 2

Effectiveness

The aim of the project was to make a contribution towards the establishment and sustainable management of 40,000 hectares of protection and commercial forest in the Guangyuan prefecture (Sichuan province), by involving the rural population. The following table highlights the defined project objective indicators, some of which were added to ex-post.

Indicator	Status of ex-post evaluation
Primary ecological objective	
(1a, PA*) 40,000 ha were newly planted and placed under protection (2001, adjusted after appraisal of the follow-up project).	A total of 44,587 ha were planted in seven districts. Site visits showed that the pre-project state (largely bushes and grass) could be replaced by mostly good quality mixed forest (particularly cypress, pine, alder and birch trees). (+) Indicator met

(1b, PA) Three years after the last planting, 75 % of the forest plants are healthy and properly managed, i.e. they were "qualified" (by the State Forestry Administration in cooperation with a consultant).	Three years after planting, 36,474 ha of the afforestation area were qualified. This equates to 81.8 % of the total cultivated area. The target of 75% determined at the time of the appraisal is rather low. The level of 81 % can be considered good. Including "backyard tree" planting, 40,934 ha were planted (91.9 %, details provided by the State Forestry Administration). (+) Indicator met
(1c, PA) Share of deciduous trees minimum 30 %.	No aggregate data are available here. A prerequisite for qualification as commercial/protection forest and agroforestry areas was that deciduous trees had to account for at least 30 % (almost 65 % of the total afforestation area). In other words, the indicator was met with the qualification process for this forestry model. The on-site visits showed that the criteria for the aforementioned categories continue to be met. (+) Indicator met
(1d, EPE***) The "forest land" usage type is legally binding.	The area declared as forest is determined in a legally binding manner. In 2012, 989,493 ha (project area) were reported as forest land in the Guangyuan prefecture (60 % of the prefecture's total area). This is compared with 52 % at the start of the project (1997) ** (+) Indicator met
Primary economic objective	
(2a, PA) The population received the contractually agreed compensation for their workload relating to the afforestation.	In line with the information to hand, the population received the agreed transfer payments without major delay. This was also confirmed by feedback given during the on-site visits. While the project was being implemented, the transfer payments for the afforestation work amounted in most cases to 30-50 % of the household income of the participating households (1997 approx. 3 %). (+) Indicator met
(2b, PA) The rural population were assured of land use rights via contracts.	Almost 5,300 contracts were concluded in the project area during the project implementation phase. These regulate the land use rights over a period of 70 years. (+) Indicator met
(2c, EPE***) Forest use plans exist.	Master plans exist at district level that have however, not yet been translated into operational management plans.

	(+/-) Indicator partially met
(2d, EPE***) Sustainable forestry management takes place, i.e. forest management and thinning are carried out adequately.	There is no information on management measures which have been carried out. The on-site visits suggest that previous management measures were not carried out regularly or adequately. A state permit is necessary for each measure undertaken in the areas to be afforested. To date their issuance has tended to be restrictive. (-) Indicator not met

* Indicator established at the project appraisal. ** The "National Protection Forest Programme" and "Land Conversion Programme" were implemented at the same time. *** Indicator specified at the ex-post evaluation or included additionally (to record possible spillover effects).

The indicators focused on the ecological impact were consistently met. The indicators oriented towards improving the income of the local population were met – except for the management which was still inadequate.

Effectiveness rating: 2

Efficiency

The implementation period (incl. follow-up project) was raised from originally 10 to 11 years. This was due to the component for forest management, which turned out to be very time consuming – owing to the lack of local experience. This period also encompasses the "Emergency Recovery Programme", which was implemented directly after the severe earthquake (2008). This justifies the time lag.

In view of the new, participatory approaches, there were implementation weaknesses in the initial phase that impacted on the quality of the afforestation areas (up to 40 % of afforestation conducted in the first two years was not qualified[1]). From the third year onwards, the project management was modified in some key aspects (including close monitoring, change in personnel, improved training), which led to a marked improvement in the qualification rate. In view of the favourable growing conditions in the prefecture, the qualification rate reached of a good 80 % should be considered appropriate. However, this raises the question as to what extent planting 30 % of the area with deciduous trees, involving considerable effort, made sense, as the strong, natural plant growth observed comprised largely deciduous trees.

The reforestation and rehabilitation costs amounted to EUR 390/ha (based on the qualified area including backyard trees). It must therefore be taken into account that this figure includes all of the project's measures, including forest management. In addition, the underlying own contribution made by the Chinese (rough estimate) does not necessarily equate to the de facto expense incurred. The costs for consultancy services amounted to 8 % of total costs. The cost values calculated appear to be favourable compared roughly with other FC afforestation projects in China. The costs for national projects are reportedly much higher (possibly due to inadequate recording of national costs in the FC project).

The level of compensation payments made per qualified hectare (from approx. EUR 30/ha for protection forest up to around EUR 330/ha for agroforestry) were appropriate at the start of the project, and provided sufficient incentive for the farmers to participate in the afforestation measures, in conjunction with the future security of use (agreement with the forestry office at district level). Today's subsidy payments have increased roughly five-fold in nominal terms since the end of the 1990s. The net income of rural households has more than quadrupled.

[1] The afforestation area had to meet specific criteria regarding height and growth density and plant composition to be recognised (qualified) as afforestation area.

Physical alternatives to afforestation (concrete ramparts) would also have worked for the target of protecting against erosion. However, these would have been considerably more expensive compared with natural erosion control and would have involved regular maintenance costs in subsequent years, without providing any economic benefit. In addition, afforestation helps absorb CO2 and is thus important for climate protection.

The epicentre of the powerful earthquake in 2008 was in the project area. It caused severe damage, especially in the rural district of Quingchuan. Almost 20 % of the afforested area there, as well as large parts of the funded infrastructure (including energy-saving cookers, paths in the Tangijahe Natural Reserve) were destroyed or badly damaged. Some EUR 0.25 million (residual funds) were used for makeshift replacements. This damage reduced the overall effect of the project and hence the evaluation of its otherwise good level of efficiency.

Efficiency rating: 3

Impact

The overall objective of the project was to make a contribution towards (1) the stabilisation and rehabilitation of ecologically threatened vegetation areas, (2) securing the agricultural and forestry production potential and (3) improving the income situation for the rural population. The following proxy indicators were used for the evaluation:

Indicator	Status of ex-post evaluation
Proxy indicator for economically-oriented effects (1)	
Monitoring information on trends in the ecosystem and with regard to environmental impact	The analyses carried out by the local forestry office in the Guangyuan prefecture on water induction and removal demonstrate the strong influence of afforestation of what was previously wasteland (analysis differentiated between the types of plant). A healthy mixture of indigenous trees as well as planted deciduous trees and conifers was observed on site (three species were mostly found). Other statistics contributed by the State Forestry Administration demonstrate a positive development of ground and surface water resources. The following information is based on the entire area of the Guangyuan prefecture (pre-project data is not available): surface water: from 6,495 million m³ (2008) to 10,392 million m³ (2012) ground water: from 1,015 million m³ (2008) to 1,116 million m³ (2012)
Timber extraction	Wood is still used as a source of energy, although as incomes rise it is being replaced mostly by electricity, gas, biogas and coal. (+) generally positive trend

Proxy indicator for economically-oriented effects (2) and (3)	
Development of average household income in rural areas Rural migration	Rural household incomes in Guangyuan have more than quadrupled since 1997 in absolute terms* (2012). Only around 28 % of this income is generated from agricultural production, some 20 % from livestock farming and only 1.5 % from forestry. The income from migration activities has increased by more than 1100 % since 1997 (1997-2012).
Marketing trend in agriculture and forestry	The market for timber products is still underdeveloped and focused on manufacturing products from low-quality wood. The market for agricultural products has developed in the last 10 years very strongly towards higher-quality products such as mushrooms, medicinal herbs, poultry and walnuts.
Poverty in rural areas	The share of the population living in poverty has halved since 1997 and is now approx. 20 % (Guangyuan prefecture). Net income, below which a person is classified as poor, has increased during the same period from RMB 500/person/year to RMB 2,300/person/year. This corresponds to a net increase of around 350%. (+) Positive trend overall

* Inflation from 1997–2012 totalled around 28%.

The indicators compiled in the table demonstrate clear positive trends for the economic as well as the environmental objectives in the Guangyuan prefecture. In view of the plausible results chain, it can be assumed that the project, which carried out around 20 % of the afforestation in the region in the last 15 years, has contributed to the environmental trend. This can also be attributed to the fact that the project was the first larger afforestation undertaking in the region, according to the State Forestry Administration, and therefore played a certain pilot role.

On the other hand, the contribution towards reducing poverty – after the three-year compensation payments ended – can be classified as low. The considerable, albeit below-average income development in rural areas compared with the cities is due primarily to the enormous economic upturn and income generated by migration. As regards increasing agricultural productivity (employment of machinery, growth in irrigation farming, higher margin products/ha), it can be assumed that reduction of erosion linked to afforestation also contributed towards this. However, the concentration on flatter areas under cultivation also plays a role here. The share of income generated from forestry is negligible.

Impact rating: 2

Sustainability

Afforestation and woodland management represent an investment in the future, with income accruing with a time lag. The management is primarily the factor deciding the amount of revenue and the sustainability of the economic effects. These are subject to different criteria, depending on the afforestation model or "forest function" (commercial forest almost 50 %, agroforestry and special cultures around 15 %).

The on-site visits illustrate the fact that previously there had been no adequate management. For the commercial forests this means foregoing optimum growth and incurring a loss of quality, which will delay and significantly reduce income in the future. The consequences for all afforestation models is also higher risks for losses through forces of nature. According to information provided by the State Forestry Administration, damage due to diseases and pests were hardly observed to date.

It is clear that the (expected) proceeds from the silvicultural use or their long-term nature for the target group are not attractive enough to compensate for the management effort required. No further measures were carried out after the payments were made for managing young growth. Contributory factors here remained the more restrictive handling of regulations on logging, a lack of land use and management plans and the lack of knowledge or experience among the farmers.

The land use contracts concluded over a 70-year period fundamentally represent a good basis for sustainable forestry. However, the short-term income generation in areas other than forestry is much more attractive for the rural population. This was recognised by the national authorities and a legal arrangement meanwhile allows the rights of use to be leased, with the objective of guaranteeing appropriate management even in the case of migration and emigration. This opportunity is already used in part by private entrepreneurs.

The pressure placed on the woodland through the use of firewood and grazing animals has fallen considerably due to emigration, the higher household incomes and change in the combination of livestock held (main domestic animals in 2012 are pigs and poultry). This supports the sustainability of the pure protected areas, such as hillside protection and enrichment (approx. 35 % of the afforestation areas). This is confirmed by the impressions gathered on-site.

Most of the staff that was involved in implementing the project continues to be employed by the State Forestry Administration, some of whom hold an executive position. The sense of identification with the realised approaches appears to remain very high. However, the participatory approach (PLUP) is no longer implemented in line with the processes developed during the FC project. However, the need to involve the local population is undisputed and is embedded in the principle of the current programmes.

Sustainability rating: 3

Notes on the methods used to evaluate project success (project rating)

Projects (and programmes) are evaluated on a six-point scale, the criteria being **relevance, effectiveness, efficiency** and **overarching developmental impact**. The ratings are also used to arrive at a **final assessment** of a project's overall developmental efficacy. The scale is as follows:

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative assessment.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability): The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The **overall rating** on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).