KfW Development Bank

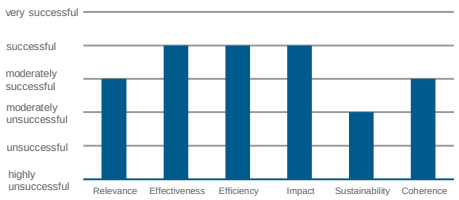
Ex-post evaluation
Sustainable forest management in Guizhou, China

Title	Sustainable Forest Management in Communal Forests in China (Guizhou)		
Sector and CRS code	Forestry policy and administrative management (CRS Code 31210)		
Project number	BMZ no.: 2005 65 424		
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient/Project-executing agency	Department of Forestry of Guizhou Province		
Project volume/ Financing instrument	EUR 4.5 million, FC grant		
Project duration	Implemented between 2008 and 2018		
Year of report	2022	**Year of random sample**	2021

Objectives and project outline

The objective at outcome level was to manage project pilot areas in accordance with sustainability principles at municipal, user-community or individually organised operating level in Guizhou, South China. At impact level, the aim was to increase the value of collective provincial forest areas while maintaining the environmental protective effects. The project measures included the development of forest management plans, the implementation of sustainable forest management measures and the training of forestry personnel/forest farmers.

Overall rating:
moderately unsuccessful



Key findings

The project addressed a relevant topic and took account of resident farmers and rural households with land use rights and forest management employees in selected districts of Guizhou through the participatory concept.

The project was and remains in line with German, Chinese and international development policy objectives and addressed several Sustainable Development Goals, including SDG 15 “Life on Land”. It is consistent with international and national norms and standards and followed the “leave no one behind” principle. Despite a lack of cooperation with other donors, the project demonstrates satisfactory external and internal coherence.

Regarding effectiveness, it should be noted that forest owners in particular were able to benefit from the implementation of forest management plans. It was also possible to identify an increase in timber stock of the project region and a better forest structure. The project’s contribution to the impact level is plausible. The project measures were also implemented as efficiently as possible.

However, the developed forest management plans were no longer being implemented and updated at the time of the evaluation, which is why there is no sustainability from today’s perspective. The main reasons for the project’s lack of sustainability are the legally prescribed logging rates, a lack of resources in forestry management and socio-economic developments. As a result, the overall project is rated as moderately unsuccessful.

Conclusions

- One of the project’s strengths is the involvement of local forest owners. This participatory process increased the acceptance for the project. Such an approach can be promising for future projects.
- The changing legal framework conditions in the partner country represented a significant risk for achieving lasting impacts.
- Training and education measures proved to be an important and long-term component of the project.
- Exchanges of knowledge and experience across organisations should be promoted more strongly to exploit potential synergies.

Ex post evaluation – rating according to OECD-DAC criteria

Overall rating: 4

	Ratings
Relevance	3
Effectiveness	2
Coherence	3
Efficiency	2
Overarching developmental impact	2
Sustainability	4

Breakdown of total costs

		Inv. (planned)	Inv. (actual)
Investment cost	EUR million	8.86	9.35
Counterpart contribution	EUR million	4.06	4.85
Financing	EUR million	4.80	4.80
of which BMZ budget funds	EUR million	4.50	4.50
of which Basic and Advanced Training budget funds	EUR million	0.30	0.30

Rating according to OECD-DAC criteria

Relevance

From the perspective at the time and also today, the **identification of the core problem** is comprehensible and appropriate. At outcome level, the "Sustainable Forest Management (SFM) in Communal Forests in China (Guizhou)" project aimed to integrate internationally recognised principles of sustainable and close-to-nature forest management (e.g., based on the definition in the Helsinki Declaration of 1993) into South China's national forestry policy and programme design. At the level of the overall objective, management in accordance with sustainability principles was intended to contribute to increasing the growth in value of the collective provincial forest areas while maintaining the environmental protection effects. At impact level, the aim was to improve the forest structure and the timber stock. At the start of the project, the target region had a poorly developed forestry sector and a significant gap in expertise in sustainable and effective forestry. The project therefore related to a relevant as well as – in view of severe forest damage and poor forest condition in the region – urgent problem. From today's perspective, sustainable forestry is still essential for stabilising the regional climate and improving the income of the local population.

The **core problem** can be attributed to a number of different interconnected developments in the country. As a result of various policy measures (e.g.: "Great Leap Forward") by then President Mao Zedong in the 1950s and 1960s, forest areas were exploited intensively. This led to a high proportion of degraded land, large losses of biodiversity and serious environmental problems such as erosion and desertification. Central government measures for reforestation were initiated in the years that followed. In keeping with the spirit of the times, afforestation was mainly geared towards economic goals, i.e., predominantly conifers were planted that could not fully meet the necessary ecological functions. In addition, the newly planted plants were not sufficiently maintained. Legal framework conditions in force in China that restricted the sustainable use of forests (e.g., low logging rates) increased the deterioration of the forest structure. The low logging rates set in China for five years and at government level (top-down) led to forest owners being encouraged to fell only profitable, larger trees. However, regular

thinning of dense areas or the removal of diseased and/or crooked trees is necessary as part of thinning measures in order to improve the overall quality of the trees and the forest structure. As the quota allocated cannot be exceeded by the respective administrative units and a breach of the rules is punished with severe penalties, such thinning measures are extremely difficult. The logging rates therefore lead to forest densification, low growth of healthy trees and – due to the felling of large, healthy trees – to a deterioration in genetic quality. The lack of expertise in forest management among a large number of forest owners – due to the very small division of forest areas – exacerbated the problem.

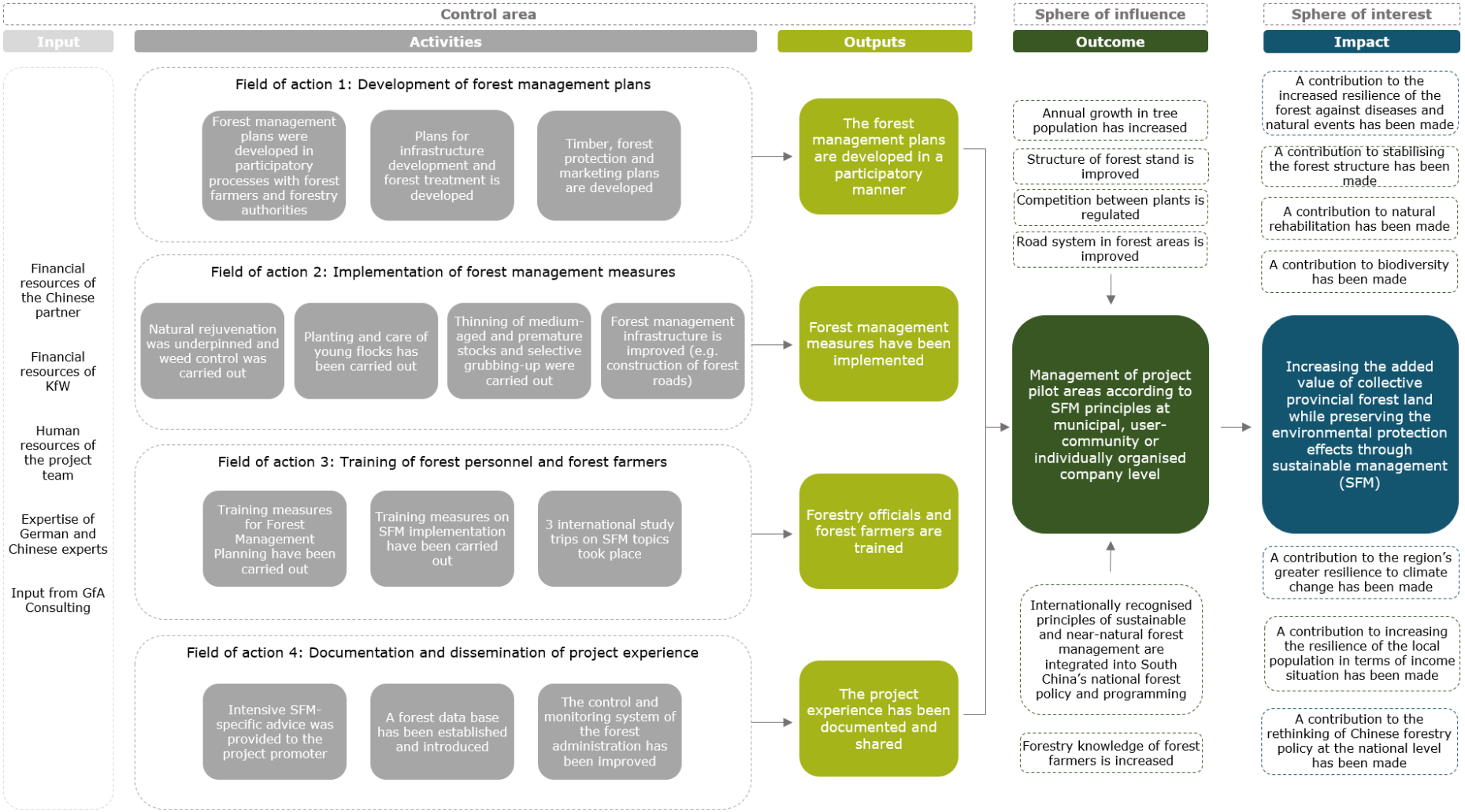
This problem identification illustrates the **high demand for high-quality and sustainable forest management**. In order to create productive forests that are able to fulfil the economic and ecological functions in the best possible way and to reduce the vulnerability of Chinese forest areas, technical, administrative, and financial expertise in the area of "Sustainable Forest Management" (SFM) was therefore required.

The project's **design based on the core problem** must in principle be assessed as plausible and appropriate at the time of the intervention. It was developed on the basis of a feasibility study and was designed to implement various measures. The project was divided into two phases: the preparation phase up to 2010 and the subsequent implementation phase from 2010–2016. The activities can be divided into four fields of activity. Field of activity 1 included all activities aimed at the participatory development of forest management plans. Field of activity 2 then included the implementation of forest management measures on the basis of forest management plans. Field of activity 3 supported the development and implementation of forest management plans by training forest personnel and forest farmers. Finally, the documentation and dissemination of project experience was intended to enhance the further application of SFM. These fields of activity and their corresponding outputs were designed to increase the annual growth of the tree population at module objective level, improve forest stock and infrastructure and achieve forest area management in accordance with SFM principles. Sustainable forest management should thus contribute to the natural rehabilitation of forests and to the stabilisation of forest structures. Figure 1 shows a detailed impact model of the project.

SFM pursues a holistic approach that includes the interaction of the social, environmental, and economic dimensions of sustainability. The measures were also suitable for achieving the project objectives and the underlying impact assumptions can be assessed as plausible. The regional and small-scale approach, which was used to reach the local population in the participating districts, is particularly noteworthy. The entire project implementation process was accompanied by an independent follow-up, in which all project interventions in the six project locations were recorded and monitored. The follow-up consisted of three stages: 1) Self-check at forestry office level, 2) Internal follow-up at country level and 3) Spot check by an external consultant. This was intended to guarantee a high and transparent quality standard for all districts.

From today's perspective, however, the design of the project was too optimistic with regard to the possible project impacts and the sustainability of the results. Initially, due to the applicable legal framework conditions, classification as a pilot project with special permits was necessary to be able to implement the corresponding measures of sustainable forest management. For this reason, limited sustainability had to be assumed at the time of project planning in the event that the special permit in the pilot project area was not to be extended beyond implementation. The concept also did not include the core problem of low logging rates, which cannot be solved by a project with special permits alone. In retrospect, the successful integration of sustainable forestry management into national strategies and forestry policy based on this pilot project is not realistic. Here, the strength of the existing top-down approach to Chinese policy-making was underestimated and the possible influence of such a pilot trial was overestimated despite the interest of the central government in the project progress. An increase in the awarding of concessions and special permits, which would be key to sustainably managing forests, could therefore not be anticipated as a realistic result of the project.

Figure 1: Revised impact model



The **selection of the project-executing agency** is generally to be assessed as appropriate. The project-executing agency was the forestry administration of the province of Guizhou (PFD), which also includes the Provincial Forest Survey and Planning Institute and the provincial forestry academy. Most PFD staff held professional qualifications. However, the project was the first of its kind in Sino-German cooperation and the project management requirements for the project-executing agency were sometimes too challenging. At district level, forestry administration lies within the remit of the County Forestry Bureau (CFB). “County Project Offices” were set up to implement the project, reporting to the CFBs. It should be noted here that at district level, there was often a lack of material, financial and technical capacity to implement a participatory SFM project.

The project’s **target group** consisted primarily of resident farmers and rural households with land use rights in the commodity-dependent region in southwestern China, Guizhou. The rural population living there was one of the poorest in China, mainly operated a subsistence economy at the time of the project, which was restricted due to unfavourable topographical conditions, and had a very high proportion of migrant workers who stayed in other parts of China for several months during the year due to poor employment conditions. In the villages of Guizhou, the majority of residents were therefore women, children, and members of the older generation. Forest resources therefore have an important income function for the population and contribute to the diversification of the incomes of rural households. In addition to forest owners in rural areas, the project addressed forest administration employees in six selected counties (Kaiyang, Xifeng, Azalea, Dafang, Jinsha, Qianxi). Overall, the project addressed more than 57,000 forest owners in a participatory manner.

The selected project area is characterised by moderate temperatures and annual precipitation of over 1,000 mm and therefore offers generally favourable conditions for forestry production (GFA Consulting Group 2017). Guizhou is characterised by widespread karst formations. With a share of 17.5% of the total area, tall forests cover a large part of the usable land. The share of agricultural land is only 7.5% in comparison. The forests consist of (i) 267,000 ha coniferous forests, (ii) 2,267,000 ha deciduous forests and (iii) 560,000 ha mixed forests. Due to an unbalanced age structure with a focus on young and middle-aged populations, the average forest stand is low at approx. 55 cubic metres per hectare, with an annual increase of more than 7 cubic metres per hectare in the timber forests.

In the **context of German and international development cooperation**, the project is clearly relevant. It was one of the first international development cooperation projects aimed at integrating international principles of sustainable and close-to-nature forest management into the PRC’s national forestry policy. From today’s perspective, it addresses several United Nations Sustainable Development Goals (SDGs). In particular, SDG 15 “Life on Land” should be mentioned here, which includes, among other things, the sustainable management of forests and the end of soil degradation and aims to counteract the loss of biodiversity. In addition, the afforestation activities and measures for sustainable forestry carried out as part of the project are plausibly geared towards contributing to SDG 13 “Climate Action” and the measures with regard to the local population and the income gains they generate address SDG 1 “No Poverty”. The project also explicitly took women (50%) into account through active participation, which from today's perspective shows an alignment with SDG 5 “Gender Equality”. The topic’s high relevance today is also reflected in the “New EU Forest Strategy for 2030”, in which sustainable forest management is a core concern.

The relevance of the project is rated as moderately successful, mainly due to the high level of attention paid to the core problem and the appropriate selection of the selected measures. The focus on farmers with forest use rights and the selection of the project-executing agency is also appropriate. On the negative side, however, the project’s approach is based on a special permit, without which the sustainability of the measures beyond the project period was questionable.

Relevance: 3

Coherence

Internal coherence

The assessment of the project's internal coherence analyses, on the one hand, the extent to which the design and implementation were in line with German DC priorities and, on the other hand, the extent to which the project was able to realise cooperations and synergies with other DC projects. To this end, it should first be noted that the project was one of the first sustainable forest management projects of German DC in China, which limited the cooperation potential with other projects in the country.

Nevertheless, the original design of the project provided for direct cooperation with the "Policy and model development for sustainable forest management" project in the provinces of Hainan, Hunan, and Fujin of the Gesellschaft für Technische Zusammenarbeit (GTZ, now GIZ). The aim of the GTZ project was to improve and adapt the political and technical framework conditions for sustainably managed forests to international standards. Cooperation in the area of SFM model development, for example, was envisaged through thematic overlaps. However, this cooperation could only be partially realised in the project implementation, as the GTZ project focused more on state-owned forests and less on municipal, user-community or individually organised forests. Nevertheless, joint workshops on specialist topics were held under the umbrella of the state forestry administration at the time.

In addition to the GTZ project, neither the project documents nor the interviews referred to further relevant cooperation with other DC projects in the region, which at the time of project implementation acted in the same intervention context and had potential for synergy effects. From today's perspective, however, the project is compatible with the forest policy facility project implemented by GIZ. The aim of the project, which was designed in 2017 and implemented from 2018 to 2022, is to revise Chinese forest policy towards more sustainable forest management (GIZ 2022). The project's forest policy facility was fundamentally designed on the basis of the general DC experience in China with regard to the challenges of developing a sustainable forest management approach. However, during the evaluation there was no evidence of an exchange of experience between the KfW project in Guizhou and the GIZ project. According to the project participants, however, there had been an informal exchange. Nevertheless, potential cross-DC synergy effects could most likely not be achieved.

With regard to the project's design, it can be stated that this was in accordance with German DC priorities and is still coherent with Germany's strategies to this day. At the time of project implementation, sustainable forest management was seen as a relevant core topic and as a result, intended impacts such as the protection of biodiversity were considered a priority. Even though, from today's perspective, sustainable forest policy is not a focus of Germany's development policy, it is clear that the project fits into the strategic reference framework of the "BMZ 2030" reform concept. The target country of China, which was still considered a developing country at the start of the project, is today defined as a "global partner" in the BMZ's list of countries for government development cooperation (BMZ 2020).

Sustainable forest management and securing the value of forests is a development policy objective of the Federal Ministry for Economic Cooperation and Development (BMZ) and thus part of Germany's development cooperation, both before the start of the project and today. Although this is not the current focus of German development policy, Germany is committed to the protection and sustainable use of forests at various levels and in different regions (BMZ 2022). The project meets the requirements that can be derived from the BMZ's core thematic strategy "Responsibility for our planet – climate and energy", in particular the action area "Climate change mitigation and adaptation", for Chinese-German development cooperation. It can also be contextualised under the concept paper "Biologische Vielfalt - unsere gemeinsame Verantwortung" [Biodiversity – our shared responsibility] (2018) and the forest action plan of German Development Cooperation "EINEWELT braucht Wald" [ONE WORLD needs forests] (2017). At the time of the project, China was defined as a developing country and was one of the world's relatively sparsely forested countries.

In addition, the project was consistent with international and national norms and standards to which German DC is committed. In addition to upholding human rights and complying with the Paris Declaration, the project also upheld the "leave no one behind" principle, for example by considering the local population, in particular smallholder forest owners.

External coherence

External coherence discusses the extent to which the project was able to implement cooperation with measures of other DC actors in the intervention context and to what extent the project was in line with Chinese forestry policy and/or was able to support the Chinese partner's own efforts.

To this end, it can first be stated that the project was integrated into the Chinese government's strategy in the areas of environmental protection, forestry policy and development policy. For example, the measures were in line with the objectives of the Chinese government's environmental project entitled "Green Wall" and were in line with the programmatic priorities, the 11th Five Year Plan and the National Programme for the Protection of the Environment and Forestry Development. Sustainable forest development is still a key concern for the Chinese government today, with a particular focus on South China. For example, the State Forest Administration defined the achievement of a national forest area share of 26% by 2050 and the introduction of sustainable forest management considering the multifunctionality of forests as long-term sector objectives. Furthermore, the Chinese government applied for technical and financial support to implement a forestry project for the sustainable development of private and collective forests in 2005. Forest-related issues are also of great importance from today's perspective. This is reflected, for example, in the fact that since 2015, increasing forest stocks and improving mechanisms to reduce climate change in forest management have been part of the Chinese government's Nationally Determined Contributions (NDCs). Nevertheless, it should be noted in this context that the legal framework conditions and strategies put in place by the central government at the time and today do not permit sustainable forest management, as the logging rates set are too low to be able to implement adequate forest management measures.

From today's perspective, the project's compatibility with China's domestic political aspirations in forestry policy is visible. The interviewees confirmed that the concept of close-to-nature forest management is in line with China's priorities in the forestry sector and is gaining in importance in the context of CO2 pricing. They underlined the Chinese government's increased investment in close-to-nature forest management strategies.

Cooperation with other donors could not be identified during the evaluation. Although other donors such as Japan, South Korea, the USA, and the World Bank pursued various measures for forest conservation and reforestation and the EU implemented the SFM project "EU-China National Forest Management Project", no relevant cooperations were addressed in the project design or in the other existing project documents. Despite corresponding requests, no cooperation or coordination with other donors and their measures in the Guizhou project region were mentioned in the various interviews with the central project stakeholders. Accordingly, there is no evidence of cooperation and synergy potential such as mutual learning, shared structures or the exchange of expert opinions and experiences. At the same time, however, no evidence of duplicated efforts was found in the project region. Nevertheless, concentrated cooperation, especially with projects from other donors, could have had an impact on China's logging rates and the resulting challenges, and could have established the sustainability-based approach to forest management more strongly in the political discussion in the country.

While the project was unable to address structures or systems of other donors, the project's design was geared towards using the systems and structures existing in China. Measures were implemented with strong participatory involvement of local forestry authorities, which also promoted their networking.

The project's coherence is therefore rated as moderately successful. On the one hand, the project is in line with the priorities of German DC and, in principle, is also compatible with the efforts of the Chinese partner. On the other hand, there was a lack of direct use of synergy or cooperation potential, especially with other donors.

Coherence: 3

Effectiveness

The project objective at outcome level was to manage forest project pilot areas at municipal, user-community, or individually organised level in accordance with SFM principles. Three indicators were defined at the start of the project for measuring the project's success.

Indicator	Status during PA	Actual value at EPE
(1) Adoption of approx. 110 forest management plans that meet the requirements for international forest certification. *	0 Forest management plans	152 Forest management plans (achieved)
(2) Implementation of forest management plans across at least 35,000 ha.	0 ha	30,200 ha (Partly achieved)
(3) Number of forest management plans already renewed in the project region since the plans were drawn up.**	0 Forest management plans	0 Forest management plans (Not achieved)

* Indicator (1) is generally located at the output level rather than at the outcome level and has therefore only been included in the analysis and evaluation as a precondition for indicator (2).

** Indicator (3) measures the sustainable use of the project results and is therefore discussed in the section on sustainability.

Note on indicator (1): The project documents show that a total of 152 forest management plans were adopted at the end of the project, which met the quality requirements. The target level of 110 forest management plans was thus exceeded by 138%. This success was highlighted in the various interviews. As a result, one of the project's key output objectives was achieved.

It became apparent that the forest owners generally considered the implemented forest management plans of the project to be positive, although some of the participating villages were initially put under political pressure to participate in the project. Interviewees underlined that forest owners in particular benefited greatly from the forest management plans. The success of the implementation is also illustrated by the fact that other municipalities that were not supported by the project showed an interest in the activities of the forest management plans and their implementation. Transparency in the procedures and decision-making processes of the relevant forestry administration and the project was highlighted as a relevant success factor for the adoption of the forest management plans.

Note on indicator (2): The aim of the project was also to implement the forest management plans on at least 35,000 hectares after their adoption. First, it should be noted that when planning the project and the indicator, it was not foreseeable how large the individual forest areas of the participating municipal, user-community or individually organised pilot forests would be. The targeted 35,000 hectares are therefore to be understood as an adequate target assumption. A total of 30,200 hectares were sustainably managed according to the principles of close-to-nature forest management. As a result, this indicator was achieved at 86%. The approach for sustainably managed forests was applied to almost 1% of the forest area in Guizhou province.

The implementation of the forest management plans included a variety of activities. For example, thinning was carried out on 14,091 ha to protect the security of the forest stocks and care measures were implemented on a total of 16,110 ha to promote natural rehabilitation and develop a stable forest structure. Infrastructure measures have been constructed over a length of almost 330 km, in particular as "forest roads". In addition, chainsaw training courses were carried out, young trees planted, and forest rejuvenation measures taken, and funding provided for the development of monitoring systems for the documentation and tracking of forest stands. These measures were met with a general response from the municipalities involved. Some interviewees considered the monitoring systems for the documentation and monitoring of forest stands, the dissemination of project results and the training of forestry personnel and forest rangers to be particularly important. At the same time, almost all interviewees saw care, rejuvenation, and planting as central project measures and essential for achieving the project objectives.

Furthermore, the project managed to create an innovative and meaningful SFM monitoring system for the Guizhou province, which facilitated the documentation of the forest stand and sustainable management of this stand. The importance of the monitoring system for the success of the project was highlighted in many interviews.

The project's contribution to the objectives is comprehensive, i.e., the objectives were not achieved due to external factors, but due to the project.

Key **influencing factors for the project's target achievement** can be divided into beneficial and obstructive aspects. In general, it should be noted that the project received a special permit for an appropriate logging rate, which enabled the forest to be managed according to a sustainable forest management concept, through its status as a pilot project. Without this special permit, the implementation of the project would not have been feasible. In particular, the relevant rejuvenation measures could not be implemented without a special permit due to a lack of economic incentives. However, thinning is an essential prerequisite for improving forest stands and implementing sustainable forest management.

Another aspect of project implementation support, cited by several interviewees, was the timely and full payment of promotional funds for project implementation and technical support in the implementation of forest management plans. Furthermore, technical expertise and contributions from experts were rated as essential. In this context, the participatory process as well as the scientifically sound and comprehensive project implementation plan are also listed as conducive to implementation. Finally, the status of the project with the special permit to abolish the logging rate was also an essential beneficial factor.

In return, the small-scale division of forest land among forest owners led to challenges in the implementation of the project. This was reinforced by the broad lack of forestry knowledge among forest owners and the inadequate administrative capacity. However, the latter two factors were targeted by the project measures and activities.

Relevant **unintended positive or negative consequences and effects** could not be determined during the evaluation. A few interviewees referred solely to an increased use of chainsaws for timber production. However, this evaluation did not conclusively clarify whether this increase can be attributed to the project training measures or to an increase in income in the project region.

In principle, it can be summarised that the project was successful in adopting and implementing the forest management plans in the project region and that the abolition of the logging rate was a key success factor**.**

Effectiveness: 2

Efficiency

In principle, the project can be classified as efficient. The efficiency of the project was influenced by factors both internally and externally that affected both the production and allocation efficiency of the project, as well as the implementation efficiency over time.

Internally, the project had a clearly defined plan of operations. This included a precise definition of the overarching project objectives as well as five more detailed results to be achieved by the project. In this respect, the work plan followed the impact logic developed by the project, in which each result represents an output that must be achieved to meet the project objectives. Indicators were developed to measure the achievement of these detailed results (outputs). The indicators in the plan of operations supported production efficiency as well as implementation efficiency in terms of time, as they showed the project team any challenges in achieving the objectives.

Externally, economic factors, particularly continuously and rapidly increasing daily rates for workers, led to challenges for efficient project implementation. For example, wage costs and daily rates rose by 100% between 2006 and 2009 (see section on sustainability). Furthermore, the cooperation and capacity of the Chinese partner were decisive for the effective implementation of the measures listed in the plan of operations. Challenges arose as the Chinese partner sometimes struggled to provide the necessary human resources to carry out the activities as planned.

Nevertheless, the project was successful in its production and implementation efficiency. Although it was extended from the scheduled 83 months to 120 months, with only a slight increase in the funds used (from EUR 8.56 million, of which EUR 4.5 million was FC funds, to EUR 9.35 million, of which EUR 4.5 million was FC funds), it was largely able to achieve its overarching objectives as well as the detailed output objectives in the plan of operations. On the part of the project participants and other stakeholders in the project, the competence and enthusiasm of the project manager was highlighted. Based on the statements of the interviewees, his work was indispensably linked to the implementation efficiency of the project. There is no evidence that it would have been possible to achieve the project objectives even more efficiently with the available funds.

An analysis of the **project costs** also does not indicate any serious losses in efficiency. Most of the costs (44% of a total of EUR 9.35 million or a BMZ contribution of EUR 4.4 million) were invested in the preparation and, in particular, in the implementation of forest management plans. Project management costs were close to 23%, the

second largest expenditure item. In this context, however, it should be noted that a greater proportion of project management costs were related to the procurement of project vehicles such as all-wheel-drive vehicles, minibuses, and motorcycles, as well as costs for office equipment and vehicle and office operating costs. Other project management costs related to costs for local project personnel. Accordingly, project management costs are proportionately reasonable. The costs for the implementation consultants – although they amount to 12% of the total costs – are also appropriate for a project that included a strong technical component for which a strong on-site presence was necessary.

The follow-up costs amounted to only 3% of the total costs, which is another indication of efficient implementation, especially in view of the complex but necessary physical inspection and documentation of the forest.

The **allocation efficiency**, the impact of the project resources in relation to the achievement of the project impacts, can only be assessed to a limited extent. This is largely because it is not possible to monetise the project impacts, as there is no reliable monitoring data on the indicators of the development objective, the volume of timber and the forest structure in the project area (see Impact section). However, it was possible to analyse the allocation efficiency of the project to a certain extent. Based on the statements of key stakeholders, the volume of timber and the forest structure in the project area were positively influenced by the project. Both the proportion of timber and the forest structure could be positively influenced in particular by rejuvenating, removing crooked trees, and reforesting deciduous trees (see also Impact section). It is therefore plausible that the allocation efficiency of the project is also positive. However, it is not possible to calculate and therefore monetise how much the project resources used contributed to the project impacts (volume of timber and forest structure).

In summary, it can be stated that the project demonstrated good production and implementation efficiency and that the coordination and management costs were reasonable in relation to the transaction costs. The project's positive allocation efficiency is plausible.

Efficiency: 2

Impact

The objective at impact level formulated in the design was to increase the value growth of collective provincial forest areas while maintaining the environmental protective effects of management in accordance with sustainability principles. Two indicators were defined to measure the achievement of these overarching developmental impacts.

Based on data from the Chinese project partner, the volume of timber and the forest structure in the project area were to be analysed at the start and end of the project and compared in reference areas. However, this data could not be taken from Chinese routine inventories, which is why both indicators were adjusted as part of the evaluation (see table below).

Indicator	Status PA	Ex post evaluation
(1) Increase in the volume of timber in the project area compared to reference areas. Qualitative proxy indicator: Qualitative assessments of key stakeholders on the development of the timber stand in the Guizhou project area.	No information	Achieved.
(2) Improvement of the forest structure (increased proportion of mixed forest stands) in the project area compared to reference areas. Qualitative proxy indicator: Qualitative assessments of the forest structure by key stakeholders, in particular the proportion of mixed forest stands in the Guizhou project area.	No information	Achieved.

Note on indicator (1): Timber stand in the project area. Data on timber growth could not be obtained from Chinese routine inventories. However, the large demonstration areas provide a clear picture of the better growth of the forests covered by SFM measures and many forest owners confirmed higher forest benefits (GFA Final Report 2017). According to several interviewees, the timber stand in the Guizhou project area is generally rated as positive from today's perspective. According to one interviewee, 60% of timber can be found in the project area and individual stakeholders surveyed state that the timber stand has risen. In this context, the expected future positive development is particularly clear. Most of the interviewees assume that the timber stock in the project area will continue to increase and that increases in the timber stock will become apparent, especially when considering a longer period of time. Key stakeholders consider it plausible that this increase in the volume of timber can be attributed to the thinning of forest stands and the reforestation of deciduous trees.

Note on indicator (2). Forest structure in the project area. Data on the forest structure could not be obtained from Chinese routine inventories. Nevertheless, deciduous tree species were promoted in the prevailing coniferous forests. As a result, the forest structure has been improved through maintenance and thinning, including by felling poorly shaped and diseased trees and by improving the growth space of future trees. The proportion of deciduous trees in plantations was secured by natural regeneration (GFA Final Report 2017). Stakeholders surveyed also showed positive results regarding the second indicator. It is stated that the structure, growth, and function of forests in the project area have improved, and the proportion of mixed forests has increased. The interviewees agree that the forest structure has clearly and immediately improved, that the proportion of mixed forests has increased and that this improvement in forest structure can be expected to strongly promote forest growth within the next five to ten years. However, the objective amount of growth cannot be quantified due to a lack of data.

Overall, the **project's contribution** to the described impacts can be assessed as plausible. The measures implemented as part of the project, such as planting deciduous trees, felling crooked trees, and rejuvenating forests, had a direct and active impact on the timber stock and forest structure. According to some interviewees, the forest structure and the proportion of timber improved (significantly) during implementation of the project. The measures implemented are seen as a central and effective source of the aforementioned improvements. Some interviewees referred, for example, to the emergence of mixed forests that are more ecologically valuable and the afforestation activities of the project. The project's rejuvenation activities were also considered to be extremely relevant in this context by several interviewees (project participants and, above all, Chinese partners, and beneficiaries). At the same time, it can be assumed that no such forestry measures would have been carried out without the intervention of the project and that the timber stock and forest structure would have developed differently. Interviewees (project participants and Chinese partners) confirmed that the forests in the project region would have been in a worse condition without the project's intervention, that forest resources could not be used to their full extent and that the value of the forest would not have increased/would have increased less, or that positive development would not have occurred until a later date.

Regarding the **impact of the project results on the target group**, it can be stated that the project was likely to have contributed to improving livelihoods. The project's target group included both forest owners and employees of the various forestry administrations in Guizhou Province. There was almost consensus on the part of the interviewees that forest owners are the target group that can benefit most directly from the project. The main reason for this during the project term was an improvement in the livelihood and income situation, which can also have a long-term impact with the same regulatory framework conditions. These impacts are largely the result of the improved forest structure and the increased proportion of timber from forests. Improving the forest structure has achieved a higher resilience of the tree population to extreme weather events, which means a contribution to the region's resilience to climate change. As a result, the project measures also contribute to the resilience of beneficiaries in times of climate change.

In addition, forest owners were able to increase their own knowledge of sustainable management of their forests. On a positive note in this context, the participants became aware of the importance of the SFM approach and recognised that sustainable natural forest management stabilises forest ecosystems. This applies to both forest owners and employees of the forestry administrations. The employees and technical managers of the various forestry administrations were also able to improve their management skills. The various training measures carried out and the participatory and detailed development of forest management plans led to increased expertise within the authorities. At the same time, the managers of the responsible forestry departments were able to expand their management skills through project implementation and gained a profound understanding of the SFM concept. As a result, generally they have gained the opportunity to exert a continuous, profound, and far-reaching influence and to further disseminate the concept of close-to-nature forest management and promote its implementation. For example, some interviewees state that the activities and learning and training measures carried out as part of

the project have given them better knowledge of sustainable forest management, which they will also apply in future work. It is also reported that the forest management concepts and technologies learned are actively promoted and their dissemination is sought. Better understanding of sustainable forest management approaches can therefore generally lead to widespread effectiveness, as the forest managers can also apply the approaches in other regions of the Guizhou province. The extent to which men and women benefited differently cannot be assessed by this evaluation.

The achievement of the intended development policy objectives and **impacts** of the project was and is **made possible or more difficult by various factors**. According to the interviewees, the political support, both from the local government and the forest management, was primarily responsible for achieving the intended development policy objectives and was thus largely responsible for the successful implementation and the effects listed above and deemed plausible. As already discussed in the section on effectiveness, the status as a pilot project and the associated special permits were essential for the implementation of the project measures. Political support in the selection of village communities can also be seen as encouraging.

Unintended positive or negative impacts could not be identified. For example, most stakeholders interviewed indicated that there were no unexpected or unintentional impacts.

The intended developmental impacts of the project were achieved and the project's contribution to achieving the impacts is plausible. At the same time, it was possible to achieve positive impacts for the target group, resulting from a better forest structure, a higher proportion of timber and a better understanding of sustainable forest management approaches.

Impact: 2

Sustainability

In principle, the project had the potential to achieve a sustainable impact and it was designed to maintain positive impacts over time. For example, the aim was to anchor the approach of sustainability in national forest policies and to transfer it to other regions. The economic interests of the rural population as well as the increased expertise and awareness in the Chinese forestry system due to training and further education could have been the reason for continuing to implement measures for sustainable forest management.

However, a plan for transferring learning experiences from the pilot region to the national level was not part of the project. The pilot approach was replicated in Anhui, for example. The principles of sustainable forestry, however, have not been embedded in national strategies and regulations. In addition, the results achieved in the region show only low sustainability, particularly due to external factors (see the next sections).

Despite the increase in the stock of timber observed by project participants and partners and the improvement in the forest structure in the project region (see Impact section), sustainability for this project is only very limited. In order to ensure the sustainability of the results (e.g., use of knowledge acquired in training courses) and impacts (e.g., improvement of forest structure), it is essential that the forest management plans developed by the project and scheduled for 10 years are updated and renewed. If this is not the case, an essential prerequisite for improving forest structure and forest stands is not met. The project aimed to ensure that 75% of the forest management plans were renewed 10 years after the project was completed. This indicator was adjusted since this ex post evaluation was carried out 3 years after the end of the project; the indicator measures the already renewed forest management plans in the project region since the plans were drawn up. Most of the plans were drawn up between 2011 and 2012, so a certain number of renewed forest management plans were anticipated at the time of the evaluation.

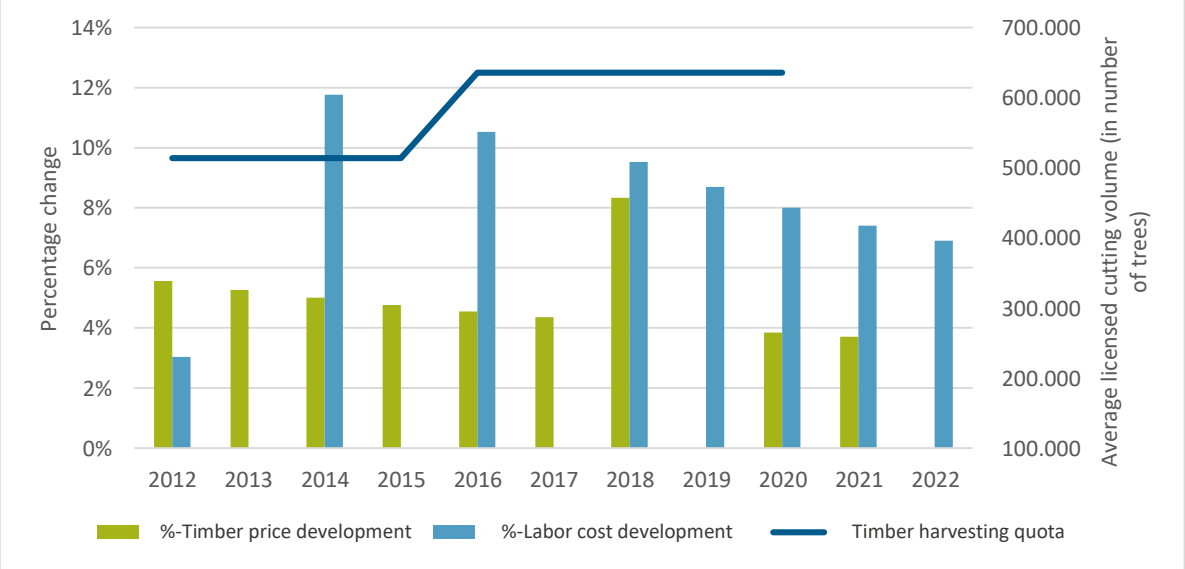
The evaluation could not confirm that forest management plans have already been updated or renewed. Despite explicit requests, no updated forest management plan was referred to in the interviews. In addition, they are no longer used in the project region. There are three main reasons for this.

The first and probably most important reason relates to the regulation of the logging quotas, which once the project had ended and thus the special status applicable in the project areas ceased to apply, again have regulatory relevance for forest owners. In this regard, the project was unable to achieve a regulatory change on the part of the partner that would have enabled forest owners to continue managing their forests in accordance with the standards of sustainable forest management even after the end of the project.

Another reason for not updating or renewing forest management plans is a lack of resources in the administrative management of the forest administration. Sustainable forest management includes the preparation, implementation, and follow-up of forest management plans. Thus, the renewal and implementation of the plans requires many resources from all levels of forest management involved. However, the existing administrative and technical staff are far from sufficiently financially equipped to plan for sustainably managing a wider forest area. The relevant local forest administrations also lack the resources to carry out maintenance and forest care measures and continue to offer training for forest owners. Accordingly, a lack of funding and resources was cited by many the stakeholders interviewed as reasons for not continuing with the forest management plans and the necessary measures. The design did not provide any mechanisms to ensure sustainability in this regard. Accordingly, there was a return to conventional clearing practices on the part of forest owners and felling work in which forest owners cleared larger areas outside the specifications envisaged in the forest management plans.

A third reason results from the positive socio-economic developments in the country. For example, per capita income has almost tripled since the start of the project and rose from USD 6,830 in 2007 to USD 19,170 in 2021 (World Bank n.d.). Accordingly, personnel and wage costs also rose in the country. These developments have led to forest management having less economic relevance for the local population. This reduced the incentive for forest owners to invest time and money in managing their forests. In this regard, the figure above shows the development of rising wage costs, the development of timber prices and the timber logging rates for the Guizhou province. As can be seen from the chart, personnel and wage costs are rising more sharply compared to timber prices. At the same time, the five-year logging quotas are only slightly adjusted.

Chart 1: Development of timber prices, wage costs and the licensed logging rate



Source: On-site surveys (timber price and wage cost development) & official data from the Chinese government (wood logging quotas)

In view of this situation, the sustainability of the project must be assessed as not sufficient. External factors, such as the legally defined logging quotas, a lack of resources in forest management and socio-economic developments, are the main reasons for the absence of a sustainable continuation, updating and renewal of forest management plans. There has been no replication in other areas or anchoring of sustainable forestry management in national policies.

Sustainability: 4

Methods used to evaluate project success

To evaluate the project according to OECD-DAC criteria, a six-step scale is used. The scale is as follows:

Level 1 very successful: result that clearly exceeds expectations

Level 2 successful: fully in line with expectations and without any significant shortcomings

Level 3 moderately successful: project falls short of expectations but the positive results dominate

Level 4 moderately unsuccessful: significantly below expectations, with negative results dominating despite discernible positive results

Level 5 unsuccessful: despite some positive partial results, the negative results clearly dominate

Level 6 highly unsuccessful: the project has no impact or the situation has actually deteriorated

The overall rating on the six-point scale is compiled from a weighting of all six 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 (“impact”) and the sustainability are rated at least “moderately successful” (level 3).

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