KfW Development Bank

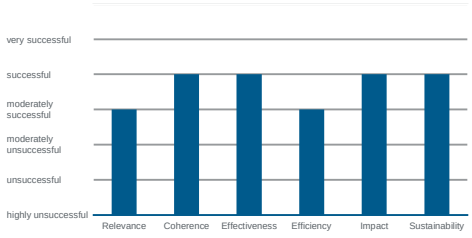
Ex-post evaluation
Protection of the tropical coastal forest in Minas Gerais II, Brazil

Title	Protection of the tropical coastal forest in Minas Gerais II		
Sector and CRS code	Bio-diversity (41030)		
Project number	2007 66 410		
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient / Project-executing agency	State of Minas Gerais / State Ministry of the Environment (SEMAD) and State Forestry Institute (IEF)		
Project volume / Financing instrument	*EUR 6.7 million, financial contribution*		
Project duration	*2009–2019*		
Reporting year	2023	**Year of random sample**	2023

Overall rating:
successful

Objectives and project outline

The project pursued the outcome objective of a sustainable and integrated strengthening of the protected areas (UCs) promoted by the project. It was also set to contribute to strengthening a policy for the restoration and sustainable use of natural resources in the UCs and buffer zones. At impact level, the goal was to contribute to the protection of the remaining forest areas, biodiversity and the regeneration of degraded areas in the Mata Atlântica in Minas Gerais. The measures are divided into four components: i) strengthening UCs; ii) expanding monitoring systems; iii) preventing and fighting forest fires; iv) promoting sustainable development approaches in the vicinity of the UCs.



Key findings

The project is rated as successful overall. The project's objectives at outcome level were achieved, but with significant delays. The project also contributes to the conservation of the Mata Atlântica and its broad impact.

– The project was aligned with the political priorities of Brazil, Minas Gerais and the German Federal Government. It was also in line with the Millennium Development Goals relevant at the time of conception as well as the Sustainable Development Goals applicable today.

– In particular, due to political reforms at the start of the project and the resulting lack of clarity regarding responsibilities of the executing agency, actual implementation was significantly delayed. This, as well as inefficiencies in implementation, led to the implementation period being twice as long.

– The project resulted in 11 laws that also stipulate the protection and sustainable use of the Mata Atlântica as well as corresponding implementation modalities for the future.

– Particularly noteworthy are the positive changes at the level of protected areas with regard to the efficiency of their administration, as well as the approach to forest fire prevention. This has contributed significantly to the avoidance of deforestation, even though there is a slight net forest loss.

Conclusions

– The integration of geodata and satellite images makes a decisive contribution to the effective implementation of protective measures.

– A participatory approach to implementation has contributed significantly to widespread acceptance among various actors and can be a key to the successful implementation of protective measures.

– If it is foreseeable that it will be necessary to extend the implementation consultant's contract, the agreement of more extensive extension periods or flexible contract options can significantly increase efficiency.

Ex post evaluation – rating according to OECD-DAC criteria

General conditions and classification of the project

The Mata Atlântica is not only characterised by its biodiversity; it also has a complicated river and spring system, which is essential for the water supply of the population. Deforestation, particularly due to economic pressure, and disruption of the water balance ultimately result in the loss of important ecosystem services.

The project was a continuation of Phase I (1998 6721 9), which was successfully completed in 2007. The project region covered a total area of 223,000km², which equates to 80% of the total area of the legal Mata Atlântica in Minas Gerais (MG). The 28 promoted nature reserves covered a total area of 780,000 hectares. The main objective was to contribute to the conservation of natural resources as well as to environmental protection, particularly for the benefit of the local population of protected areas (Unidade de Conservação/UCs). However, the project did not directly target poverty reduction.

As in the previous phase, the project-executing agency was the State Ministry for the Environment and Sustainable Development (Secretaria de Estado de Meio Ambiente e Desenvolvimento Sustentável -SEMAD). Implementation was carried out by the state forestry institute Instituto Estadual de Florestas (IEF), which was under the supervision of SEMAD. While SEMAD is responsible for the overall environmental policy in MG, the IEF is explicitly responsible for the administration and protection of the forests in MG. Responsibility for operational project management was assumed by the IEF, while SEMAD was responsible for administration of the project funds.

Brief description of the project

The project pursued the objective of ensuring the long-term and holistic conservation of the UCs promoted by the project. It was also set to contribute to strengthening a policy for the restoration and sustainable use of natural resources in the buffer zones of the UCs and their surroundings (project purpose). This promotes the protection of the remaining forest stocks and biodiversity in MG as well as supporting the regeneration of degraded areas of coastal forest (overall objective).

The intervention logic of the project provided for the financing of measures in four components:

1) Consolidation and strengthening of protected areas

2) Development of monitoring, surveillance and control systems

3) Prevention and control of forest fires

4) Promotion of sustainable development approaches in the vicinity of protected areas.

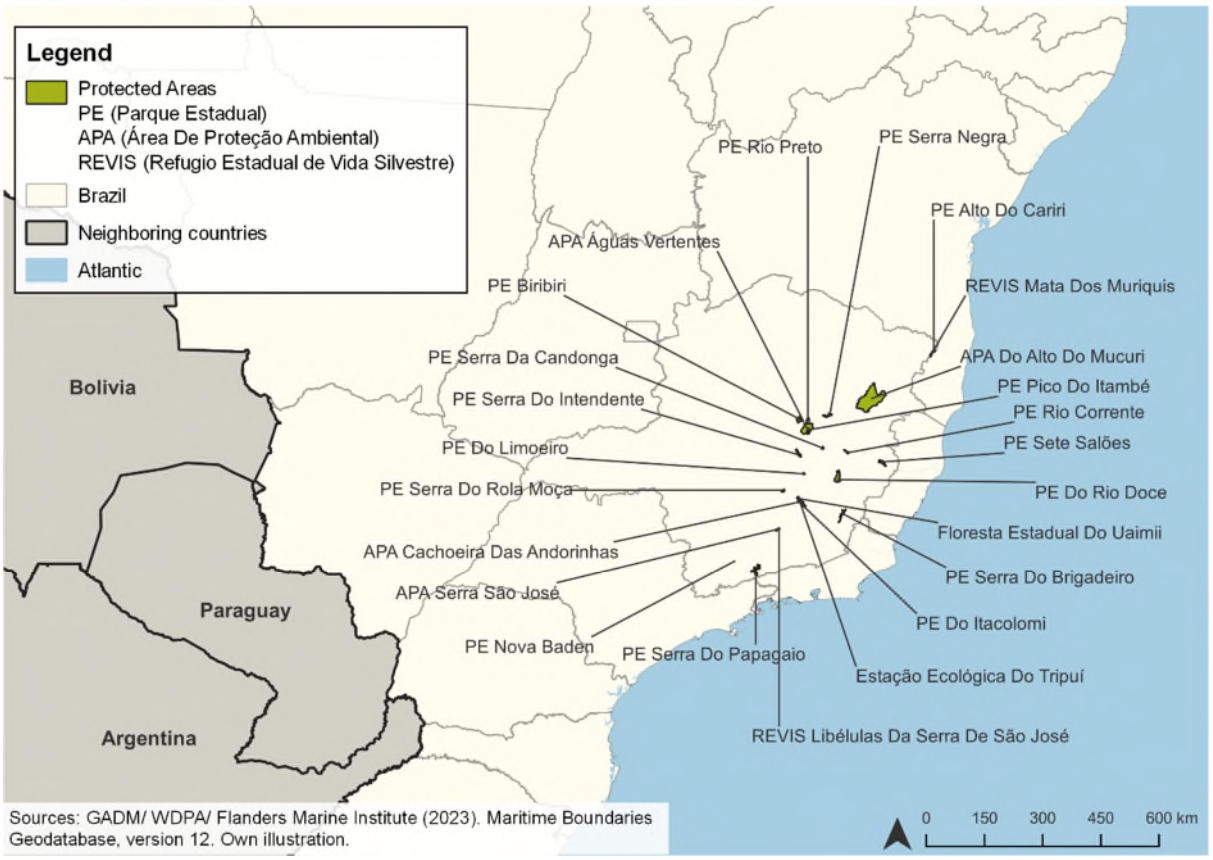
The following main measures were implemented within the scope of these components: equipping the UCs and park administrations with a wide range of equipment for the operation and supervision of the areas, preparing and updating management plans, equipping the IEF and park administrations with information technology, improving equipment and logistics for the prevention and control of forest fires, inputs and logistics for the reforestation and restoration of forest areas, preparing design documents and maps on vegetation and land use, and consulting services for project management and follow-up.

The project was implemented from the end of 2009 to mid-2019. The total costs amounted to EUR 22.1 million with an FC financing share of EUR 6.6 million.

Breakdown of total costs

In EUR million	Inv. (planned)	Inv. (actual)
Investment costs (total)	**15.25**	**22.09**
Counterpart contribution	7.25	15.42
Debt financing	8.00	6.67
of which BMZ budget funds	*8.00*	*6.67*

Map/satellite image of the project country including project areas



Sources: GADM/ WDPA/ Flanders Marine Institute (2023). Maritime Boundaries Geodatabase, version 12. Own illustration.

Evaluation according to OECD DAC criteria

Relevance

Policy and priority focus

The objectives of the project were in line with the political priorities of Brazil, MG and the IEF. The legal anchoring of the protection of the Mata Atlântica in the 1988 Constitution and the 2006 law "*Lei da Mata Atlântica*" form the basis for the protection of the valuable ecosystem. In addition, there are other laws on the protection of natural resources at federal and state level.

The project objectives were based on the priorities of the IEF, as well as the political priorities of the MG government at the time of conception. The political priorities are reflected in the State Development Plan (PMDI) with its associated indicators, to which the project made a direct contribution. The PMDI is an ambitious development plan for the state of MG to promote economic development, social justice and environmental protection. It was also aligned with the objectives and actions of *the Government's Multi-Year Action Plan* (Plano Plurianual de Ação Governamental – PPAG), in particular the *Sustainable Agriculture* sub-programme. The PPAG is a strategic planning tool that supports MG's government in implementing its policy objectives for the next four years. The PPAG is prepared and adopted jointly by the government and the state parliament. This plan includes a sub-programme for sustainable agriculture, including measures for forestry promotion. With regard to the PMDI, Promata II focused on increasing the proportion of native vegetation cover (taking into account the Mata Atlântica, Cerrado and Catinga biomes)[1]. With regard to the PPAG, the project focused in particular on the creation and administration of UCs, support for the implementation of the rural environmental register (CAR) and the environmental regulation programme (PRA).

Furthermore, Promata II was in line with the German Federal Ministry for Economic Cooperation and Development's (BMZ) objectives at the time of design. It stems from a comprehensive general German DC programme to protect the MA, which consisted of a total of six federal state projects. During the course of the project, the focus of German DC shifted towards the Amazon biome. The associated DC programme expired during the term and was replaced by one with a focus on the Amazon.

Focus on needs and capacities of participants and stakeholders

The project was designed with the protection of the MA in mind. The main participants in the project were the executing institutions SEMAD and IEF. In addition, the forestry police, fire brigade, non-governmental organisations and communities were also involved; local participants were also organisations of the population within and in the buffer zones of the UCs. The project was adapted to the needs of those involved. They were to be integrated into the implementation by means of participatory approaches.

The local population living in the immediate vicinity of the UCs was identified as the affected (target group). However, no directly target-group-related and poverty-reducing effects were envisaged in the design. Rather, only indirect effects were intended. Among other things, the target group was to benefit from improved environmental quality, the safeguarding of water cycles, the development of recreation areas, the development of sustainable management alternatives and the introduction of financial mechanisms for environmental services. From today's perspective, direct poverty-reducing effects could have been pursued to address the core problem.

A contribution to gender equality was planned to be made exclusively through the implementation of participatory approaches. In addition, the aim was for equal numbers of men and women to be on the UC supervisory boards. However, no direct gender effects were envisaged. The participatory approaches were not specifically targeted at women or other disadvantaged groups. In retrospect, an explicit inclusion of women in the implementation would probably have led to a stronger gender impact.

The core problem identified was damage to the ecosystem, the increasing influence of human activities and a lack of sources of income that could act as an alternative to illegal use of natural resources. However, this definition overlooks the fact that it is the increasing pressure of human influences, particularly the economic

[1] A biome is an ecological unit characterised by certain climatic and vegetation conditions.

pressure, on the natural environment that is causing the disturbance in the natural environment in the first place. In addition, fundamental problems in the implementation of environmental laws and policies are neglected. However, the unmentioned core problem was addressed in the design through planned measures.

Appropriateness of design

The results chain (cf. Figure 1) can be summarised as follows: The project aims to strengthen environmental protection efforts to preserve the MA. The main participants are state environmental authorities. Joint design and implementation of environmental protection measures promotes the integration of stakeholders. Financing covers equipment, management tools and training, while developing sustainable incentive systems increases efficiency. Through the implementation of effective protective measures in the UCs (Outcome 1), deforestation rates in these areas are expected to decrease; at the same time, a reduction in forest fires is also to be assumed. Outcome 1 therefore contributes to protecting the remaining forest stocks and preserving the biodiversity of the MA in MG (Impact 1). The protection of the Mata Atlântica in MG is ensured by creating legal framework conditions. The implementation of regeneration and sustainable use policies in buffer zones (Outcome 2) contributes to the effective implementation of protection mechanisms and the implementation of incentive mechanisms for regeneration. This ultimately leads to the regeneration of degraded areas in the Mata Atlântica in MG (Impact 2).

The programme's design was based on experiences from Phase I. The design and the underlying impact assumptions are plausible and also suitable for contributing to the solution of the core problem, as well as to the objectives of the overarching FC programme at the time of design (impact). The selected indicators were partially appropriate; further explanatory notes can be found in the Appendix volume.

Response to changes/adaptability

The design of the Promata II project was based on the experiences from the previous phase. However, due to political reforms, restructuring and corresponding staff changes, the institutional memory was lost, and corresponding synergies could not be sufficiently leveraged. The project's guidelines and action plans needed to be revitalised and redesigned. Conceptual adjustments have therefore not been made.

Nevertheless, two adjustments were made during the course of the project: At the start of the project, the list of priority UCs was reduced from 28 to 25. Three national UCs were removed from the project list in consultation with the competent authority ICMBio (Instituto Chico Mendes de Conservação da Biodiversidade). This was due to their supra-regional structures, but also to access to national promotional programmes. During the course of the project, the measures under Component 3 (prevention and control of forest fires), which were originally designed to be implemented only in three priority areas, were also extended to all UCs. The reason for this was the overarching relevance and success of these measures. The resulting additional demand was financed through own contributions.

Rating summary

The project was geared towards the political priorities of Brazil, MG and the German Federal Government. It was also in line with the Sustainable Development Goals (SDGs) currently applicable, in particular SDG 15, which focuses on the protection and sustainable use of terrestrial ecosystems to manage forests and halt biodiversity loss. The core problem identified – the heavy pressure on natural resources – was acknowledged, but ultimately not addressed by the project. From today's perspective, however, it would have been desirable to emphasise the needs of the target group more strongly and also to take into account gender-specific differences. This could have increased the project's potential to improve the living conditions of the local population. However, the relevance criterion is positive overall, even if the design could have addressed the identified core problem more effectively from today's perspective.

Relevance: 3

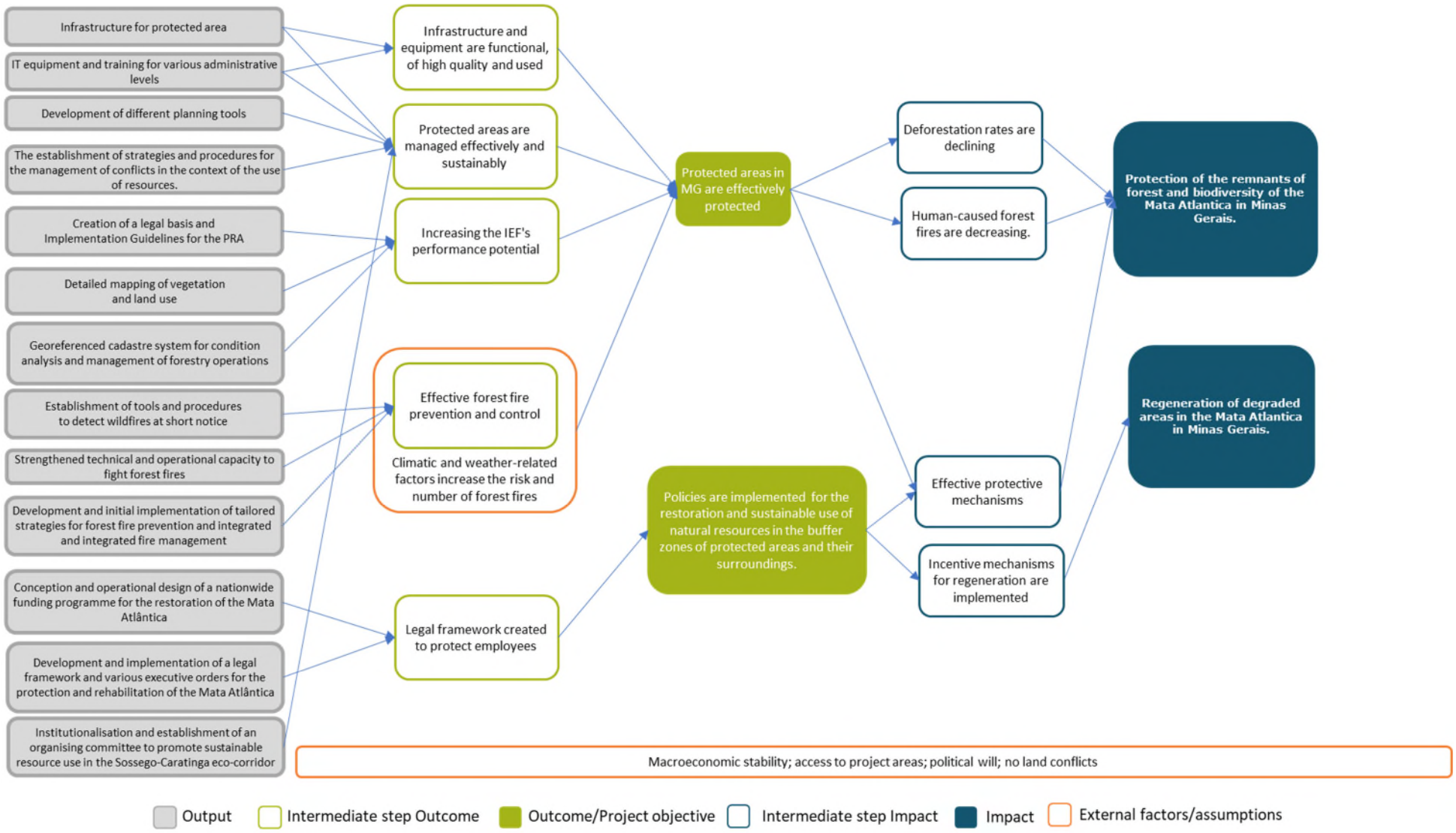


Figure 1 Promata II target system

Coherence

Internal coherence

The *"Pilot Programme for the Conservation of Tropical Forests in Brazil"* (PPG7) under the auspices of the G7 had the explicit objective of reducing deforestation and including the protection of indigenous groups as well as traditional communities in the programmes. The World Bank and Germany played a central role on the donor side of the programme. In this context, German FC initiated six federal state projects in the Mata Atlântica as part of the DC programme *"Protection and Sustainable Use of the Tropical Forest"*. These projects were implemented together with two projects at federal level. Overall, the FC total volume amounted to around EUR 90 million. Promata I was an integral part of these bilateral association projects. Promata II builds on Phase I and is also related to the TC project *"Doces Matas"*, which was completed in 2005. Among other things, this TC project produced important preliminary work on the methodology of management plans and the establishment of advisory boards for UCs. Synergies with the TC project "Implementation of CAR (*Cadastro Ambiental Rural*) / PRA (*Plano de Regularização Ambiental*)" were also used, which was particularly important for Component IV. Among other things, the TC project worked with the environmental authorities of the federal states on the enforcement of environmental regulations. In addition, innovative instruments of the Forestry Act were further developed and disseminated through training programmes in the federal states and among landowners.

External coherence

The project complemented other IEF measures. In this context, the IEF forestry development programme should be highlighted in particular. This aims to promote sustainable forestry in MG and to improve the living conditions of the population living from forestry. The project also supplemented measures implemented by the IEF as part of the PPAG. The sub-programme on sustainable agriculture should be highlighted here, which also promotes sustainable forestry through i) promotion of sustainable forestry, ii) reforestation measures and iii) promotion of the use of wood extracted using sustainable forestry practices.

Overall, German DC played a leading role in the international cooperation to protect the MA and enjoyed a good reputation among public, state and federal partners, civil society groups and other international donors. The results achieved served as a basis for measures by other donors, creating synergies with different projects. An exemplary project that builds on the results of Promata II is the project for the restoration and protection of climate and biodiversity services in the southeast corridor of the Atlantic Forest of Brazil – Atlantic Forest Connection (Global Environment Facility – GEF and Inter-American Development Bank – IDB). This project is also being implemented under the leadership of SEMAD and was able to benefit in part from the Promata II structures (e.g. through basic IT infrastructure but also through agile thinking in the cooperation of various IEF departments, which arose during the project's implementation). Later projects of the partner with other donors were able to build on the foundations laid by Promata II. These include a sustainable rural development project (Inter-American Development Bank IDB), the rural landscapes project that was implemented under the FIP-CAR – Brazilian forest service (World Bank and IDB) forest investment programme, and the COBAÍBAS project, which was facilitated by the Norwegian Ministry of Foreign Affairs with funds from the Norwegian International Climate and Forest Initiative (NICFI).

Rating summary:

The project was part of a general German DC programme. It was also consistent with relevant norms and standards to which German DC is committed. Furthermore, the project makes a meaningful contribution to the partner's own efforts in accordance with the principle of subsidiarity. During the implementation, no other donors in MG were active in protecting the MA, yet initiatives from other donors were able to build on the project's results. In summary, the project's coherence fully meets expectations and does not indicate any significant shortcomings.

Coherence: 2

Effectiveness

Achievement of (intended) targets

The objectives adjusted as part of the EPE were: i) sustainable and integrated strengthening of the UCs promoted by the project through appropriate equipment, and ii) contribution to strengthening a policy of restoration and sustainable use of natural resources in buffer zones of UCs and their surroundings. The targets were achieved by the final inspection. The target achievement at impact level can be summarised as follows:

Indicator	Status during PA	Target value PA/EPE	Actual value at final inspection	Actual value at EPE
(1a) Positive quality development in UC management ("quality factor" – measurement instrument of the state of MG)	Quality factor (FQ)[2]= 4.0 (baseline 2011)	FQ increase mean value >=20%	FQ = 4.9 (22%)	Parameters that are included in the calculation of the FQ are still stable or have been improved by the project. **Achieved**
(1b) The UC advisory boards function (>70% of project UCs)	All UC advisory boards function	>70% UC advisory boards function	All 25 of the project's UCs have functioning advisory boards.	All UCs have an elected and established advisory board or are in the midst of the election process. **Achieved -**
(2) Alternatives for sustainable use are identified and promoted (reforestation and regeneration programme functions and at least six alternative forms of use were supported).	0	Number of initiatives promoted – at least six alternative forms of use supported	IEF supports three reforestation models, two forestry models and two alternatives in agriculture	The models promoted by the project continue to be used. **Achieved**

Contribution to achieving targets

Overall, measures were implemented in four components that contributed to achieving the indicator target values:

Component 1 Consolidation and strengthening of conservation areas: To consolidate and strengthen the UCs, investments were made in UC equipment and infrastructure (Sub-component 1and management models were developed (Sub-component 2). The project provided basic equipment for the various administrative levels, such as computers and effective fire extinguishing equipment. These are still in use and enable effective UC administration. However, the classic infrastructure planned under Component 1 (e.g. visitor centres) was not implemented as planned. Although various construction measures were identified that would have been eligible for FC financing, this was not provided for various reasons: a) in part, the construction measures, e.g. a visitor centre in Parque Estadual do Rola Moca, were financed via environmental compensation payments. In the case of UC Pico do Itambe and PE Serra do Brigadeiro, the project financed the construction plans of some

[2] The fator qualidade (FQ) was collected annually to evaluate the management of protected areas. The FQ evaluates various parameters such as vegetation coverage, land regulation, demarcated protected area borders, management plan, advisory board, human resources, infrastructure and equipment as well as financial resources. These parameters serve as meaningful indicators for evaluating the function of the protected area as an environmental asset and its contribution to regional development and sustainability.

construction measures (e.g. entrance, visitor centre and campsite). The construction measures were also financed through environmental compensation payments. Due to the strict deadlines for the use of compensation payments and the equally strict FC procurement guidelines, a combination of FC financing and the use of compensation payments was not possible; b) there were sometimes legal questions with regard to land use; c) there were delays in identifying the measures, so that implementation was no longer possible within the project term. Finally, office containers were procured for eight UCs, which continue to be used.

The most important contribution to improving the management of the UCs was the introduction of the new methodology for creating management plans. The new method saves both time and financial resources and thereby increases the efficiency but also the ownership of the UC administrations, because they manage the process. The management plan also structures the work of the UC administrations in a practical way. The participative approach additionally involves and consults all stakeholders, thereby increasing acceptance of UCs among the communities.

The UCs have advisory boards composed of members of the most important interest groups in the areas surrounding the UCs. There are not equal numbers of men and women on the supervisory boards; this is a circumstance that is viewed very critically by female members of the UCs as well as female IEF employees. However, the project did not attempt to specifically address women, get involved in the advisory boards or take other gender equality measures.

In summary, the IEF's performance potential was significantly strengthened by the measures implemented under Component 1. This now enables more effective management of the selected UCs in physical, technical, organisational and financial terms. This achieves an improved level of protection for biodiversity in the promoted UCs overall.

Component 2 Design of monitoring, surveillance and control systems: The component focused on improving and expanding the information management systems set up in the first phase, which are used for monitoring vegetation and for awarding environmental licenses (Sub-component 1). Integrated planning and deployment plans for environmental controls were also prepared and their implementation supported (Sub-component 2). With this in mind, the corresponding departments were equipped with IT hardware, and the IEF employees were further trained in its use. The Brazilian Environmental Regulation Programme (Programa de Regularização – PRA) aims to monitor and enforce environmental requirements and obligations. This is based on the Rural Environment Register (Cadastro Ambiental Rural – CAR), in which all landowners must register their land. The CAR serves as the basis for environmental monitoring, land use planning and the implementation of environmental requirements. IT capacities were also created at the various administrative levels of the IEF to implement these two important programmes, and a draft legislative proposal for the PRA was prepared. The revision of the Brazilian Forestry Act (Código Florestal – CF) in 2012 enabled new tools to be used in the registration of protected areas (Reservas Legais). As a consequence, results exceeded expectations in this regard. The measures implemented have significantly strengthened the IEF's performance potential in order to enable more effective follow-up and environmental management of the MA's natural vegetation and forest resources in both technical and conceptual terms.

Component 3 Prevention and control of forest fires: The IEF has developed integrated fire management plans (Manejo Integrado do Fogo – MIF) to effectively prevent and control forest fires. Within the scope of the MIF, fire is used in a targeted manner as an instrument for fire prevention and control. In addition, the local population is involved in the development of fire management plans in order to also take into account slash-and-burn farming and to establish alternatives. In order to enable the active and targeted use of fire for these purposes, the CF for MG has been developed accordingly, and the MIF has been legally anchored. Project funds were also provided to procure the necessary fire-fighting equipment for the responsible units. Further training measures for the fire brigades (including voluntary fire brigades) were also supported. These measures have significantly improved the IEF's performance potential in the area of forest fire prevention and control.

Component 4 Sustainable development approaches around protected areas: The project was also able to draw on experience from the first phase for this component. The measures concentrated on the continuation of the pilot measures for restoring the MA, guaranteeing financial aid for environmental services and the promotion of alternative forms of management. Investments in plant nurseries and the resulting increased production of high-quality seedlings were essential for implementing the afforestation of 15,000ha and improving the working conditions for the staff at these plant nurseries. In addition, the legal framework and various implementing

regulations for the protection and rehabilitation of the MA were developed. Overall, the component contributed significantly to an increase in the IEF's performance potential.

None of the four components of the project specifically addressed gender impact potential.

Quality of implementation

Due to the IEF's continuously growing range of tasks, combined with a slight net reduction in jobs, this has also contributed to capacity bottlenecks with regard to the project's implementation. Contrary to the original design, the IEF was not able to provide a complete team, similar to Phase I, that focused on implementing the project. The project was organised by a coordinator, another IEF employee and the implementation consultant. Depending on the context, it was implemented in cooperation with the other IEF departments. In addition, there were frequent staff changes in the coordination of the project as well as in the political and operational management positions at the IEF and SEMAD – also triggered by the reforms in the initial phase (cf. Figure 2). This had a negative impact on the project, both in terms of implementation duration as well as institutional continuity and identification with the project and its objectives. The speed of implementation and the budget increased only when at least the position of coordination was permanently filled (cf. Figure 3).

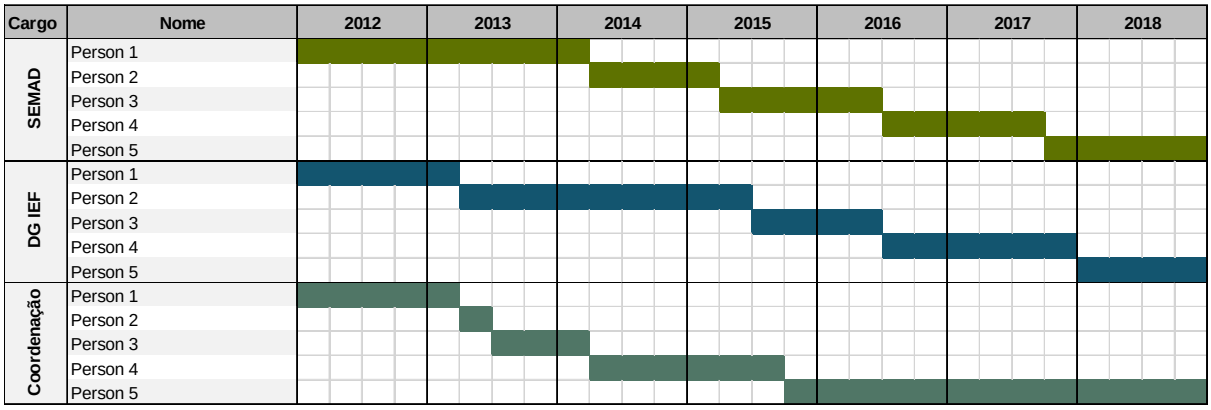


Figure 2Changes in personnel at political management level and coordination. Each box indicates which person had a leadership role and in which quarter for each organisation. A frequent change of staff can be seen, own data

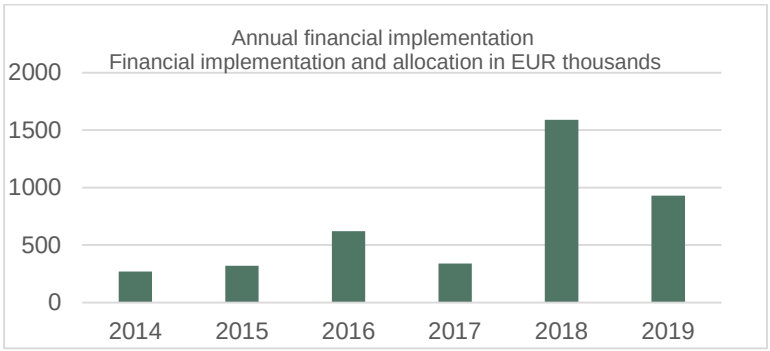


Figure 3 Financial implementation per annum, own data

Nevertheless, the objectives of the project – as outlined above – were essentially achieved in an appropriate manner, but with considerable delays (cf. Efficiency).

Unintended effects (positive or negative)

The project did not result in unintended negative impacts.

The following is positive: For the successful implementation of the project, SEMAD, but especially the IEF, were forced to work closely together across internal team boundaries. This agile cooperation has led to lasting changes, particularly at the IEF, and helped to overcome silo thinking in the individual specialist departments. Ultimately, this has contributed to a more efficient way of working and significantly improved cooperation within the organisations. Furthermore, the study "Restauração Florestal na Bacia do Rio Doce" (reforestation in the Rio Doce river basin; Component 4) found that women play a central role in the reforestation of natural vegetation, which enabled the IEF to continue its actions with a greater strategic and priority focus.

Rating summary

The project's objectives at outcome level were achieved and increased the executing agency's capacities. In addition, positive unintended effects were observed in the executing agency. By targeting the implementation mechanisms, some of which are already participatory, greater contributions to gender equality could have been achieved. Overall, the project met expectations.

Effectiveness: 2

Efficiency

Production efficiency

The total costs of the project amounted to around EUR 22.1 million. Of this, EUR 15.5 million was made available by the IEF as an own contribution. EUR 6.6 million was financed by FC. The remaining funds amounting to EUR 1.4 million were reduced.

The costs for the individual components of the project are distributed as shown in Figure 4. A significantly higher own contribution was used for the infrastructure measures under Component 1 – originally the estimated costs were EUR 2.9 million; in fact EUR 7 million was spent. The increase in own contributions can be attributed to the use of environmental compensation payments for infrastructure building. The investment costs under Component 2 correspond to around EUR 800,000 of the estimated appraisal costs. The IEF's own contributions were also significantly increased for Component 3, with investment costs amounting to EUR 5.3 million, whereas the original design only estimated costs of EUR 0.6 million. The cost increases in this area are due to additional costs for the executing agency, but also to the extension of these measures to all project UCs. For Component 4, the cost estimates at the time of appraisal roughly correspond to the actual investments totaling EUR 5.8 million.

The project experienced significant delays in implementation. At nine years, the implementation period was more than twice as long as the originally planned four years. The delays in the course of the project are due to various reasons: in particular, the administrative reforms in the executing institutions SEMAD and IEF in the initial phase of the project must be mentioned as a decisive factor for the delays. There were significant changes in the institutional setup of the executing institutions SEMAD and IEF, as well as staff changes. The aim of the reforms was to make SEMAD and IEF more efficient and transparent. The project had no impact on the administrative reform and not even an alternative implementation structure could have compensated for this challenge.

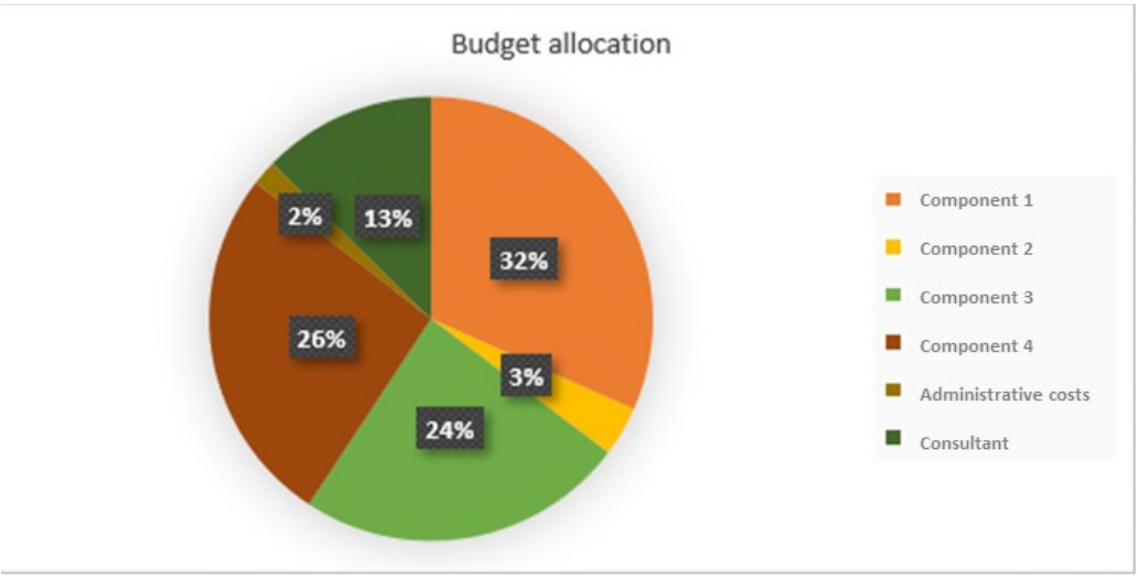


Figure 4: Budget allocation of individual components of the project, own data

Most of the measures were financed through a disposition fund. This means that FC generally makes funds available for three months based on a forecast. Under Brazilian law, the disposition fund is subject to the rules on the use of public funds. These state that tenders may only be carried out when the funds provided for the order are available in the corresponding bank account. Since tendering processes generally take significantly longer than the forecast period, these rules are difficult to harmonise. This has resulted in significantly higher administrative expenses. Pooling measures and the application of the direct payment procedure could have increased efficiency, where these were possible.

Furthermore, the implementation consultant's contract was extended for another year three times. This was done to avoid further delays due to a new international invitation to tender. However, practice has shown that it even takes a long time to implement extensions from an administrative and legal point of view. A longer extension period could therefore have contributed to greater planning security and time savings in a phase in which a particularly large number of activities were carried out.

Allocation efficiency

The project's focus on creating legal framework conditions to protect the forests in MG and on strengthening the executing agency in order to increase management efficiency is an important basic requirement for nature conservation. The newly created management plans financed by the project have become an integral part of the park administration's day-to-day work and contribute significantly to improved efficiency.

The administrative expenses for the project amounted to close to EUR 400,000 (approx. 2% of total costs). The IEF was supported by an implementation consultant as it carried out the project. At around 12% (EUR 2.8 million) of the total financing, the project costs for the implementation consultant are EUR 1 million above the estimated costs, but are not above average. Although the services of the implementation consultant fully met the project-executing agency's expectations, It can be assumed that the consultants were not fully utilised for a while due to the delays, while the scope of the tasks remained constant..

Rating summary

From today's perspective, pooling measures and application of the direct payment procedure, as well as a longer period of contract extensions for the implementation consultant, could have increased production efficiency during implementation. With regard to allocation efficiency, the project's announced objectives were achieved at both outcome and impact levels at reasonable costs, but with considerable delays.

Efficiency: 3

Overarching developmental impact

Overarching developmental changes (intended)

The goal at impact level is “Contribution to the protection of remaining forest stocks, biodiversity and the regeneration of degraded areas in the Mata Atlântica in Minas Gerais.”

Target achievement at the impact level can be summarised as follows.

Indicator	Status PA	Target value at PA	Actual value at final inspection	Actual value at EPE
(1) Forest cover in the protected areas (UCs) of the project region was maintained	N/A	Project UC forest coverage at least constant	555ha of forest was lost in 25 priority UCs. (0.05% of the analysed area)	**Partially achieved**
(2) Cover with native vegetation in the project area as part of recovery/restoration	N/A	Restored vegetation: +> 20,000ha	By 2018, measures to restore/recover native vegetation were implemented across a total of around 16,000 hectares, with around 23% of the land suffering vegetation loss, resulting in net 12,320 hectares being restored/recovered (62% of the set target)	Clearly positive development **Partially achieved**
Increased connectivity by increasing native vegetation in four out of five focus areas/surroundings of three out of four protected areas.	N/A	Three focus areas selected (Sossego Caratinga ecological corridor (Rio Doce and forest reserve), Alto Mucuri APA (northeast reserve), Ouro Preto Mosaic (south central reserve) with nine UCs – increase in original vegetation between 2011–2018	Loss of 422ha. of native vegetation recorded (less than 1% of total area); connectivity data not available.	**Not achieved**

Contribution to overarching developmental changes (intended)

Even though the indicators were not fully achieved, the project made a significant contribution to preserving the MA. This conclusion is based on the quality of the implemented measures, statistical analyses of the forest areas of the financed protected areas and identifiable effects of the individual components. These are explained in more detail below.

Various measures were taken as part of the project. On the one hand, areas were actively afforested – between 2012 and 2018 over 15,000ha; in parallel, forest stock was successfully regenerated on an area of over 25,600ha. While afforestation actively uses trees, regeneration relies on the recovery and growth of existing vegetation by improving environmental conditions, taking protective measures and promoting natural regeneration processes. On the other hand, there was a loss of vegetation on around 23% of the land.

Targeted cooperation with local plant nurseries was also important for successful afforestation. By providing them with the right equipment, the safety of the local workers was increased and the quality and quantity of seedlings produced improved. In the period 2015 to 2018, seedlings worth almost EUR 2.5 million were grown. The high production continues to this day, with just under EUR 1.2 million in additional seedlings from 2019 to 2023. The project therefore made a contribution to achieving the overarching objectives.

As part of the EPE, a statistical analysis of the forest cover of the UCs was also carried out. For the analysis, the forest cover in all UCs was compared with similar forest areas outside the protected areas. This is necessary because pure monitoring data can lead to misleading conclusions if the aim is to use the data to derive the project effect. Based on monitoring data, it could be concluded that a project effectively prevented deforestation, although the effect is more based on the low deforestation trend throughout the country than on the project itself. Conversely, it would be possible to conclude that the project led to increased deforestation, although it indeed prevented worse deforestation.

To create this data element, Brazil's land area was divided into small squares using geographical information systems (GIS) and various characteristics were then calculated.[3] For each forest area in the protected areas, comparable forest areas outside the protected areas were then identified using a coarsened exact matching (CEM) procedure.[4] The left-hand panel in Figure 5 shows that a pure comparison of forest areas with protected areas is not possible, as neither the forest cover nor the deforestation trend for these two groups match. A comparison of the deforestation trends would not be possible in this case, as it is not possible to compare the forest areas in the promoted protected areas with similar forest areas not covered by a project. On the other hand, the right-hand panel shows that the CEM procedure creates a "statistical twin" and that the prerequisite has been created to estimate the avoided deforestation in the UCs without projects. The statistical twin can be recognised by the fact that, prior to financing in 2011/2012, non-promoted forest areas ("control group") had a relatively similar forest cover to the areas of the promoted protected areas ("treatment group"), and the deforestation trend was similar before project financing. Interestingly, it can also be seen that the comparable forest areas have higher forest coverage than the forest areas within the protected areas. This can be explained by the high probability that protected areas with high deforestation pressure were selected for the project. However, it can be seen that, after the start of the project, the non-promoted forest areas exhibit a stronger deforestation tendency than those in the financed UCs. The statistical analysis therefore shows that the protected areas would probably have lost even more forest area without the projects.

However, a major limitation of this analysis is that the underlying data from Global Forest Watch purely measures gross deforestation. Forest areas that have been created through afforestation and regeneration measures are not covered. Due to the afforestation and regeneration measures carried out as part of the project, it can therefore be plausibly assumed that the net forest cover in the financed UCs will be even higher than can be assumed from the right-hand panel in Fig. 5. Further details on the data element can be found in the appendix band under "Project measures and results".

As part of the project, the legal basis for the CAR and the PRA was developed based on the local circumstances, which are now reflected in Legislative Decree 48. 127/2021. In addition, the basis for the implementation of the PRA Produzir Sustentável[5] was developed, which is used and replicated nationwide. The methodology of the community plans for the protection of the Atlantic Coastal Forest (PMMA) has been improved and is now also being applied in the Cerrado biome. As a result, the project has a broad impact beyond the MA project region. To preserve the MA and its unique biodiversity, well-functioning UCs are essential. The project introduced a new approach to the development and implementation of management plans. According to various park employees and members of the UC advisory boards, these are developed as part of a participative process and thereby foster cooperation with the local traditional communities as well as the local population. As a result, there is a greater acceptance of UCs among the communities and they participate in maintaining them. Therefore, the project contributes to strengthening the connection between UCs and local communities in the sense of comprehensive and sustainable forest protection. Moreover, the methodology has a model character and is

[3] For each cell, the forest area in 2000 was calculated as well as the clay content of the soil, the ruggedness of the terrain (TRI), the average loss of forest from 2001–2013, the altitude of the forest area and the travel time to the nearest city with more than 5000 inhabitants.

[4] The CEM procedure is based on Stefano M. Iacus, Gary King, and Giuseppe Porro. 2012. "Causal Inference Without Balance Checking: Coarsened Exact Matching." Political Analysis, 20, 1, pp. 1–24.

[5] Produzir Sustentavel PRA: The promotion of environmental regulation of rural real property in MG is done by preserving and restoring ecosystems that exist in harmony with rural production. In this context, territorial governance allows local actors to come together, resulting in an effective convergence of efforts between the environmental and production sectors.

replicated in other states. For example, at the time of the evaluation, the IEF provides corresponding technical support in the state of Rondônia in the Amazon region.

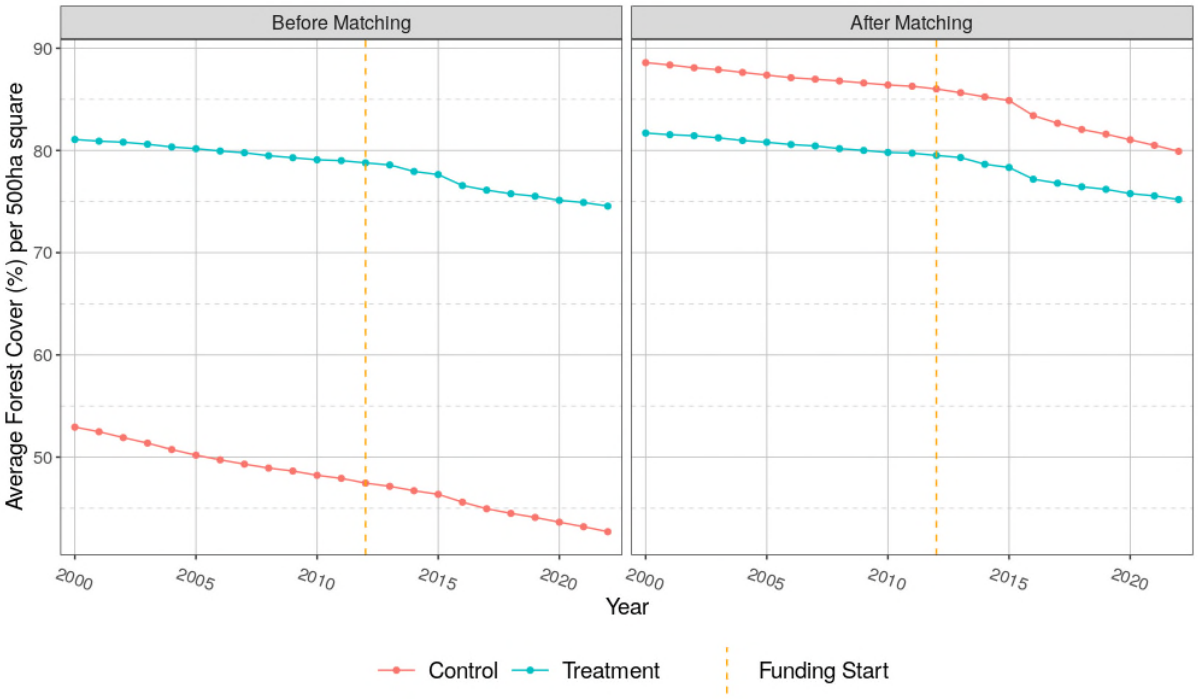


Figure 5: Data element of the impact evaluation of avoided deforestation in protected areas, own data

Forest fires are a serious problem in MG. These continue to increase due to climate change and represent a growing threat to the preservation of the Mata Atlântica. The project introduced an innovative approach to tackling forest fires – integrated fire management (MIF). The MIF is an integral part of the management plans. During the course of the project, the approach was extended to all UCs due to its importance and success and serves as a model for other federal states. The MIF approach has created a paradigm shift in fire management. Controlled fires are used in a targeted manner to preserve healthy forest stocks and protect them from uncontrolled fires. This interrupts the fuel source for forest fires and limits their spread. Another significant advantage of integrated fire management is that biodiversity can also benefit from controlled fires. At this juncture, pyrophytes in particular should be mentioned. Pyrophytes are important for the restoration of forests after fires, as they cover the soil and help the seeds of other plants germinate. Examples of pyrophytes are Miconia Albicans and Senecioa Petraeus. The MIF was incorporated into the legislation of Minas Gerais with Decree 47.919/2020. It also includes supporting local communities with targeted and controlled slash-and-burn farming, thereby helping not only to prevent fires, but also to reduce conflicts.

The project did not aim to have any direct target group-related poverty-reducing effects, but indirectly benefited primarily the local population of the UCs by preserving natural resources and the environment. However, the local population was actively involved as employees in the planting and care of the seedlings for afforestation across large areas that were afforested by the IEF. This increased the potential for poverty reduction. The positive effects on the water supply are particularly noteworthy. MG generally has abundant water resources in the form of rivers, lakes and springs, which are of great importance not only for the drinking water supply, but also for agriculture and industry. The population is highly dependent on water sources in UCs. Forest protection plays a central role in maintaining a balanced water supply: intact forests prevent soil erosion, protect against heavy rainfall and maintain water quality. They regulate water flow, mitigate flood events and secure a continuous water supply during dry periods. In addition, forests contribute to ground water replenishment and protect water sources. By actively protecting forest stocks along rivers, soil erosion is avoided, which in turn helps preserve water sources. The maintenance of the natural water system and the preservation of the soil is also of crucial importance on productive land. The legal basis for this is the CAR environmental register, which sets out minimum forest coverage along rivers and on mountain slopes, for example. The legal draft for MG was developed by the project.

Contribution to (unintended) overarching developmental changes

The project strengthened the cooperation between various actors in MG in the area of sustainable forestry. This is due to the project's networking activities, which have helped various actors to come into contact with each other and share their experiences and resources. In addition, relevant plans and policies were drawn up and implemented to promote sustainable forestry, reforestation and environmental adaptation of farms, mainly in the Mata Atlântica biome. The provision of seedlings by IEF nurseries, as well as the advice and training of producers, NGOs and universities, also contributed to this.

Rating summary

The project contributed to the achievement of the goal at impact level by demonstrably protecting forest areas from deforestation and contributing to to further compensation for lost forest areas through afforestation and regeneration measures. . This contribution has been achieved in particular through the sustainable and widespread changes at protected area level as well as the networking activities. The overarching developmental impact therefore meets expectations.

Impact: 2

Sustainability

Capacities of participants and stakeholders

In principle, the IEF has the institutional capacity to ensure that the project's positive impacts continue. However, it faces a continuous reduction in jobs, which will also have a negative impact on the institution's capacities in the long term. At the time of project design, the IEF had created and filled several new positions. Since then, the IEF's range of tasks has evolved significantly. However, capacities were not increased in parallel. The resulting capacity bottlenecks are evident at the various administrative levels. However, the IEF has a team of experienced professionals who compensate for the staff shortage through a high level of commitment and expertise. The IEF is mainly funded by the federal government and also implements projects with various international donors.

An important tool for enabling the executing agency to ensure that the impacts continue and are strengthened over time is the identification of priority areas as part of the systematic design for biodiversity conservation and restoration (PSCR). This makes it possible to prioritise government measures such as the establishment of protected areas, afforestation measures and inspection activities in certain regions. These areas also play a key role in the award of environmental permits by the IEF. These areas will be integrated into government legislation, creating a legal framework that promotes protection and sustainable use in these key regions. The legislation serves as a tool for setting long-term goals for nature conservation and ensuring that government measures are in line with sustainable principles.

Each UC has an established advisory board or is in the process of electing an advisory board. The legal framework for their activities was already developed in Phase I, further developed in Phase II, and has been improved based on the experience gained so far. This legal framework, developed within the framework of Promata II, now forms the basis for the work of the advisory boards. In certain areas, for example, they are compulsorily integrated into the work of UCs when management plans are being prepared. However, depending on the UC, their activity goes far beyond this and serves to establish a further connection between the UC and the resident population. The acceptance of UCs by the local population is a decisive factor for their resilience and effective long-term protection and continuity.

Contribution to supporting sustainable capacities

The project has helped the IEF and its subordinate units to ensure that the positive effects continue over time. However, illegal clearing still poses a major risk to the preservation of the MA. The instruments for biome monitoring financed and established through the project play an important role here. Satellite data and automated programs are used to detect and track illegal logging. These instruments have enabled the authorities to reduce their response time from an average of more than 120 days to around 30 days, helping to prevent further damage to biodiversity. In addition, timely and consistent prosecution of illegal clearing has a significant deterrent effect.

Mapping the MA biome helped to identify remaining forest stocks and their conservation status. Combined with continuous monitoring, this allows the IEF to determine the increase or loss of vegetation in the state. Based on this, the IEF can identify and implement necessary measures for preserving the biome in a timely manner.

Durability of impacts over time

The project developed a total of eleven legislative proposals that anchor both the protection and sustainable use of the MA's resources as well as their corresponding implementation modalities in Brazilian and state legislation. This made a significant contribution to the project's sustainability. These legislative initiatives strengthen the long-term preservation of the Mata Atlântica.

Nevertheless, very limited financial resources remain a risk to the UCs' sustainability. Although government financing is legally binding for the UCs, these funds are not fully provided. The UCs should have their own budget, provided by the federal state with a minimum amount for operating costs. This financing could be complemented by own revenue, for example from tourism activities, in order to improve financial sustainability and at the same time create incentives for park administrations to work on the implementation of such measures.

Rating summary

The parties involved and those affected generally have the institutional and staffing capacities necessary for sustainable use of the implemented measures which they gained through the project. However, the lack of budget security at the level of protected areas poses a risk to their sustainability. The legislative changes brought about by the project to protect the MA will have a long-term effect. The project's sustainability is therefore rated as successful.

Sustainability: 2

Overall rating: 2

The project was geared towards the political priorities of both Brazil and Minas Gerais, as well as the German Federal Government. The project's objectives at outcome level were achieved and the outputs delivered are still in use for the executing agency's day-to-day activities at the time of the EPE. Even though the project only came close to achieving its impact objectives, it can be assumed that the project prevented worse deforestation in the UCs. Overall, the project therefore contributed to the conservation of the Mata Atlântica. It is expected that the impacts will continue over the long term, as the executing agency's capacities have generally been strengthened and the resulting legislative changes provide a solid basis for long-term protective effects. Delays in implementation and bureaucratic requirements on the part of the executing agency and FC led to a loss of efficiency. Conceptually, the project could have included the local population as a direct target group, and there are residual risks of the executing agency's lack of budget security. Overall, however, the project largely met expectations and is rated as successful.

Contributions to the 2030 Agenda

The programme makes an important contribution to the implementation of the principles of the 2030 Agenda. The programme contributes to the following dimensions of the 2030 Agenda:

universal application, shared responsibility and accountability: The programme also supports the implementation of international concepts, including the focus of German DC, the International Convention on Biodiversity and the German Federal Government's Global Public Goods concept. This underlines the fact that biodiversity is a global public good that must be protected by the international community.

Interaction of economic, environmental and social development: SDG 15: Life on Land. The project contributes to protecting and restoring forests in MG. The surface areas of the UCs in MG were increased by 20%. Protected areas are a crucial instrument for preserving the biodiversity of the Mata Atlântica, but also for climate action (SDG 13). The project also contributed to increasing the number of certified forests in MG. Forest certification can reduce illegal logging and protect the rights of forest owners. SDG 16: Peace, Justice and Strong Institutions. The

project has helped to strengthen the institutional capacities of the IEF and other organisations that are committed to sustainable forestry in MG.

Project-specific strengths and weaknesses as well as cross-project conclusions and lessons learned

The project had the following strengths and weaknesses in particular:

- Weakness: implementation of most of the measures via a disposition fund with regulations of KfW and Brazilian laws for the administration of public funds that were difficult to reconcile in some cases.
- Weakness: only indirect poverty-reducing effects were sought, and no gender equality measures were envisaged.
- Strength: many measures have been implemented as part of a participative approach, which has contributed to a high level of acceptance among the various actors.
- Strength: The project resulted in a total of 11 laws that create the legal framework for protecting the Mata Atlântica and its sustainable use.

Conclusions and lessons learned

- The integration of geodata, satellite images and automated programs makes a decisive contribution to the effective implementation of protective measures.
- The integration of a participative approach into the implementation has contributed significantly to widespread acceptance among various actors and can be a key to the successful implementation of protective measures.
- If it is foreseeable that the Implementation Consultant's contract will need to be extended, it is advisable to consider at this stage agreeing a more comprehensive extension period or making this more flexible with options.

Evaluation approach and methods

Methodology of the ex-post evaluation

The ex-post evaluation follows the methodology of a rapid appraisal, which is a data-supported qualitative contribution analysis and constitutes an expert judgement. This approach ascribes impacts to the project through plausibility considerations which are based on a careful analysis of documents, data, facts and impressions. This also includes – when possible – the use of digital data sources and the use of modern technologies (e.g. satellite data, online surveys, geocoding). The reasons for any contradicting information are investigated and attempts are made to clarify such issues and base the evaluation on statements that can be confirmed by several sources of information wherever possible (triangulation).

Documents:
Internal project documents, strategy papers, context, country and sector analyses, comparable evaluations, media reports.

data sources and analysis tools:
digital databases, on-site data collection,

Interview partners:
project-executing agency and subordinate administrative units, UC advisory boards, target group

The analysis of impacts is based on assumed causal relationships, documented in the results matrix developed during the project appraisal and, if necessary, updated during the ex post evaluation. The evaluation report sets out arguments as to why the influencing factors in question were identified for the experienced effects and why the project under investigation was likely to make the contribution that it did (contribution analysis). The context of the development measure and its influence on results is taken into account. The conclusions are reported in relation to the availability and quality of the data. An evaluation concept is the frame of reference for the evaluation.

On average, the methods offer a balanced cost-benefit ratio for project evaluations that maintains a balance between the knowledge gained and the evaluation costs, and allows an assessment of the effectiveness of FC projects across all project evaluations. The individual ex post evaluation therefore does not meet the requirements of a scientific assessment in line with a clear causal analysis.

The following aspects limit the evaluation:
Monitoring data for target-relevant variables were no longer collected

Methods used to evaluate project success

A six-point scale is used to evaluate the project according to OECD DAC criteria. 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).

List of abbreviations:

FI	Final inspection
GDP	Gross domestic product
BMZ	German Federal Ministry for Economic Cooperation and Development
DAC	Development Assistance Committee
EUR	Euro
FC	Financial cooperation
FC E	FC evaluation
HDI	Human Development Index
PA	Project appraisal
PAR	Project appraisal report
MP	Module proposal
TC	Technical cooperation
MG	Minas Gerais
MA	Mata Atlântica
UC	Unidade de Conservação / Protected Area
SEMAD	Secretaria do Meio Ambiente e Desenvolvimento Sustentável / State Ministry of Environmental Protection and Sustainable Development
IEF	Instituto Estadual de Florestas / State Forestry Institute
PMDI	Plano Mineiro de Desenvolvimento Integrado / Integrated Development Plan for MG
PPAG	Plano Plurianual de Ação Governamental / Multi-year Government Action Plan
CAR	Cadastro Ambiental Rural / rural environmental register
PRA	Programa de Regularização Ambiental / Environmental Regulation Programme
ICMBio	Instituto Chico Mendes de Conservação da Biodiversidade / national authority responsible for the administration of protected areas
GEF	Global Environment Facility
IDB	Inter American Development Bank
CF	Codigo Florestal / forestry law
MIF	Manejo Integrado do Fogo / integrated fire management

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List of annexes:

Target system and indicators annex

Risk analysis annex

Project measures and results annex

Recommendations for operation annex

Evaluation questions in line with OECD DAC criteria/ex post evaluation matrix annex

Target system and indicators annex

Project objective at outcome level	Rating of appropriateness (former and current view)
During project appraisal: 1. Sustainable and integrated strengthening of the protected areas promoted by the project on the basis of sufficient human and financial resources and appropriate management instruments. 2. Contribute to strengthening a policy for the restoration and sustainable use of natural resources in buffer zones of protected areas and their surrounding areas.	1. The provision of human and financial resources takes place through government allocations and is therefore not directly influenced by the project. The project has an influence on the provision of appropriate management systems and their exploitation. 2. The target is appropriate.
During EPE (if target modified): 1. Sustainable and integrated strengthening of the UC promoted by the project through appropriate equipment. 2. Contribute to strengthening a policy of restoring and sustainably using natural resources in UC buffer zones and their surroundings.	

Indicator	Rating of appropriateness (appropriate; partially appropriate; not appropriate)	Rationale of appropriateness (for example, regarding impact level, accuracy of fit, target level, smart criteria)	PA target level Optional: EPE target level	PA status (year)	Status at final inspection (year)	Optional: EPE status (year)
Indicator 1a (PA): positive quality development in UC management ("quality factor" FQ – measurement instrument of the MG country)	appropriate	By using the FQ as a basis, a wide range of factors that influence the quality of UC management are taken into account. This enables a comprehensive evaluation. In addition, this is based on clear measurable parameters.	FQ increase >=20%	FQ = 4.0 (2011)	FQ = 4.9 (22%) (2019)	Parameters that are included in the calculation of the FQ are still stable or have been improved by the project. **Achieved**

Indicator 1.2 (PA): environmental authorities have efficient tools to maintain UC (SIGAP shows improved application of UC protection tools)	Dropped	Relevant parameters from the SIGAP (process management and storage system) were to be used to measure the indicator. The collection of these parameters was discontinued in 2011. The indicator was therefore dropped.	Dropped	Not known, baseline was planned for 2015.	N/A	Dropped
Indicator 1b (PA): the UC advisory boards are functioning (>70% of the project UCs) and partnerships have been developed (+> 20%).	Partially appropriate	The indicator is generally appropriate, as it aims at the active participation of the advisory boards in a significant proportion of the protected areas and is meant to measure whether the advisory boards actually fulfil their function. However, "functioning" would have to be clearly defined in order to enable a uniform evaluation. For the EPE, "functioning" is defined as democratically elected and involved in relevant processes of protected area management. Sub-aspects of the partnerships will be dropped for the EPE, as there is no clear definition here either.	>70% UC advisory boards function	All UC advisory boards function	There are functioning advisory boards in all 25 of the project's protected areas. (2019)	All UCs have an elected and established advisory board or are in the midst of the election process. **Achieved -**
Indicator 2 (PA): Alternatives for sustainable use have been identified and promoted (reforestation and regeneration programme functions and at	Appropriate	The indicator is appropriate as it is specific in that it sets clear targets for the identification and promotion of alternatives. It can be measured with quantifiable elements.	Number of initiatives promoted – at least six alternative uses supported.	0	IEF supports three reforestation models, two forest management models and two alternatives in agriculture. (2019)	The models promoted by the project continue to be used. **Achieved**

least six alternative forms of use were supported).		The indicator is also achievable and relevant, as it is directly linked to the objective of sustainable use of protected areas. The timeframe is also specified. This means that the indicator meets the SMART criteria.				

Project objective at impact level						
During project appraisal: Contribution to the protection of remaining forest stocks, biodiversity and the regeneration of degraded areas in the Mata Atlântica in Minas Gerais						
During EPE (if target modified): see above						
Indicator	**Rating of appropriateness** (appropriate; partially appropriate; not appropriate)	**Rationale of appropriateness** (for example, regarding impact level, accuracy of fit, target level, smart criteria)	**Target level PA / EPE (new)**	**PA status (year)**	**Status at final inspection (year)**	**EPE status (year)**
Indicator 1 (PA): forest cover in the project region's protected areas (UC) was maintained.	Appropriate	The indicator is generally appropriate, as it addresses the conservation of forest stocks directly. The indicator is also specific and generally measurable.	Forest cover project UC at least constant.	N/A	555ha of forest was lost in 25 priority UCs. (0.05% of the analysed area)	Partially achieved
Indicator 2 (PA): Cover with native vegetation in the project area as part of the recovery/restoration.	Appropriate	The indicator is appropriate as it has a clear quantitative target level and is directly linked to the overarching objective	Restored vegetation: +> 20,000ha	N/A	By 2018, measures to restore/recover native vegetation had been implemented across a	Clearly positive development **Partially achieved**

		of regenerating degraded land and protecting biodiversity.			total of around 16,000 hectares, with a loss of vegetation on around 23% of the land, resulting in net restoration/recovery of 12,320 hectares (62% of the set target).	
Indicator 3 (PA): Increased connectivity by increasing native vegetation in four out of five focus areas / surroundings of three out of four protected areas.	Appropriate	The indicator has a clear objective. The focus on connectivity is also positive, as this can contribute to improved biodiversity and a healthy ecosystem. In addition, the indicator has a regional focus; the regional dimension can be helpful for targeted nature conservation efforts. Appropriateness could be further strengthened by defining clear measurement methods and criteria for the growth of native vegetation.		N/A	Loss of 422ha. of native vegetation recorded (less than 1% of total area); connectivity data not available.	**Not achieved.**

Risk analysis annex

Risk	Relevant OECD-DAC criterion
Staff turnover and associated loss of institutional knowledge	Effectiveness, sustainability
Illegal deforestation	Overarching effects, sustainability
Late or failed financing of the project-executing agency's ongoing activities despite government commitments	Sustainability
Climate change	Sustainability, overarching effects

Project measures and their results annex

Information on protected areas

Name	Legal basis	Area (ha)	Municipalities
APA Estadual Aguas Vertentes	Decreto 39399/98	76,281	Couto de Magalhães de Minas/Diamantina/Felicio dos Santos/Rio Vermelho/Santo Antonio do Itambé/Serro/Serra Azul de Minas
APA Estadual Cachoeira das Andorinhas	Decreto 30264/89 e Decreto 42912/02	14,266	Ouro Preto
APA Estadual do Alto Mucuri	Decreto 45877/11	325,149	Ladainha/Itaipe/Carai/Catuji/Malacacheta/Teófilo Otoni/Pote/Novo Cruzeiro
APA Estadual São Jose	Decreto 30934/90	4,648	Coronel Xavier Chaves/Prados/São João Del Rei/Tiradentes
Estação Ecológica Estadual do Tripui	Decreto 19157/78 e Decreto 21340/81 e Decreto 27848/88 e Decreto 30758/89 e Decreto 38181/96	371	Ouro Preto
Floresta Estadual do Uaimii	Decreto SN/03	4,442	Ouro Preto
Parque Estadual Alto Cariri	Decreto 44726/08	5,969	Salto da Divisa/Santa Maria do Salto
Parque Estadual da Serra do Brigadeiro	Decreto 38319/96 e Lei 9655/88 e Decreto 38994/97 e Decreto 44191/05	14,984	Fervedouro/Miradouro/Ervalia/Araponga/Sericita/Matipo/Divino
Parque Estadual da Serra do Papagaio	Decreto 39793/98	25,065	Aiuruoca/Alagoa/Baependi/Itamonte/Pouso Alto
Parque Estadual da Serra do Rola Moca	Decreto 36071/94 e Decreto 44116/05 e Decreto 45890/12	4,100	Belo Horizonte/Brumadinho/Ibirite/Nova Lima
Parque Estadual da Serra Negra	Decreto 39907/98	13,113	Itamarandiba
Parque Estadual de Ibitipoca	Lei 6126/73	1,511	Lima Duarte
Parque Estadual de Nova Baden	Decreto 16580/74 e Decreto 36069/94	214	Lambari
Parque Estadual de Sete Saloes	Decreto 39908/98	13,757	Conselheiro Pena/Itueta/Resplendor/Santa Rita do Itueto
Parque Estadual do Biribiri	Decreto 39909/98	16,999	Diamantina
Parque Estadual do Itacolomi	Lei 4495/67	5,995	Mariana/Ouro Preto
Parque Estadual do Pico do Itambe	Decreto 39398/98 e Decreto 44176/05	6,520	Santo Antonio do Itambe/Serro/Serra Azul de Minas

Parque Estadual do Rio Corrente	Decreto 40168/98	5,181	Acucena
Parque Estadual do Rio Doce	Decreto-Lei 1119/44 e Decreto 5831/60	35,976	Dionisio/Marlieria/Timoteo
Parque Estadual do Rio Preto	Decreto 35611/94 e Lei 11172/93 e Decreto 44175/05 e Decreto 45473/10	12,184	Sao Goncalo do Rio Preto
Parque Estadual Mata do Limoeiro	Decreto 45566/11	2,009	Itabira
Parque Estadual Serra da Candonga	Decreto 40170/98	3,331	Guanhaes
Parque Estadual Serra do Intendente	Decreto SN/07	13,509	Conceicao do Mato Dentro
Refugio de Vida Silvestre Estadual Libelulas da Serra de Sao Jose	Decreto 43908/04 e Decreto 44518/07	3,710	Tiradentes/Santa Cruz de Minas/Sao Joao del Rei/Coronel Xavier Chaves/Prados
Refugio de Vida Silvestre Estadual Mata dos Muriquis	Decreto 44727/08	2,692	Santa Maria do Salto

Information on the data element

Monitoring data on the loss of forest cover can be misleading when evaluating the effectiveness of protected areas, as forest cover can decline even in protected areas. Such doubts reduce confidence and funding for conservation measures, andundermine efforts to reduce forest loss and CO2 emissions.

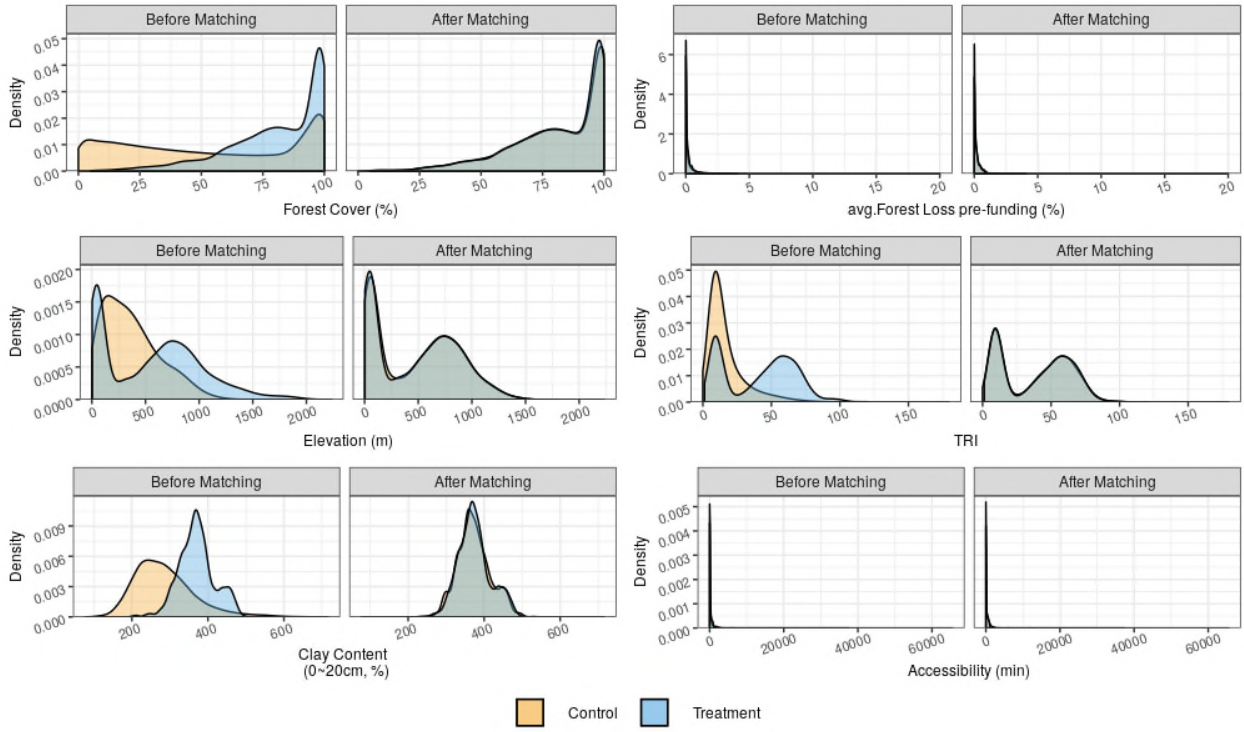
The greatest challenge in determining the conservation effects of protected areas is taking into account selection biases (Andam et al., 2008; Black and Anthony, 2022; Jones and Lewis, 2015; Schleicher et al., 2020). The designation of protected areas is not made randomly. Rather, the political decision-makers make deliberate decisions. An important selection factor is, for example, the remoteness of an area. Forest areas far from settlements are less likely to be deforested as there is no population to chop down trees for wood. In order to evaluate the effectiveness of protected areas, a scientific method has been developed for evaluation purposes that addresses this selection effect.

With the help of the MapMe Biodiversity R package, a statistical twin for the forest areas in the financed protected areas is generated by the Coarsened Exact Matching (CEM) procedure (Iacus et al., 2012; Blackwell et al., 2009). CEM is a matching method based on data cleansing so that each data point has a relevant control group. In order to generate this statistical twin, various matching variables are calculated for forest areas within protected areas (“treatment group”) and outside protected areas (“control group”). The following table shows the data used for the matching algorithm and the rationale.

Matching variable	Data source	Description of data	Rationale
Travel time to the next city (population >5,000)	Weiss et al. (2018)	Accessibility is the ease with which larger cities can be reached from a specific location. This resource displays the travel time to larger cities in 2015. Coded as minutes, indicating the time it takes to move this cell from a nearby town in the area of the target population.	Proxy for accessibility (most important determinant for anthropogenic forest cover loss/deforestation)
Forest cover	Hansen et al. (2013)	Tree stocks in 2000, defined as the canopy of all the vegetation that is higher than 5m. Coded as a percentage per output grid cell, in the range of 0–100.	Comparison of cells with similar levels of forest cover and exclusion of non-forest areas (e.g. cities)

Loss of forest stock	Hansen et al. (2013)	"Forest loss in the period 2000–2020, defined as a disturbance replacing the stock or a change from a forest to a non-forest state. Coded either as 0 (no loss) or as a value in the range of 1–20, representing the loss mainly observed in the years 2001–2020".	Records the forest cover loss dynamics before financing
Terrain Ruggedness Index (TRI)	Farr et al. (2007); Riley et al. (1999)	This index is calculated using the same data as the altitude meter. The height difference between the centre pixel and the eight neighbouring pixels is squared and then averaged. The square root is then calculated from this to obtain the TRI value.	Suitability for mechanisation of timber harvesting and agriculture
Altitude meter	Farr et al. (2007)	The level provides the global terrestrial digital 30m-altitude model from the NASA Shuttle Radar Topographic Mission (SRTM), which can be downloaded as 5 degree x 5 degree tiles. It is coded as meters, which represents the elevation in the respective grid cell.	Proxy for agricultural climatic suitability
Soil clay content	Hengl et al. (2017)	Proportion of clay particles < 0.002mm in the fine earth fraction (g/100 g)	Agricultural soil suitability

The following graphic shows histograms for each matching variable. Based on the distribution of the variable characteristics before matching and after matching, it can be seen that the protected areas are opposite comparable forest areas after matching for the calculation of avoided deforestation. This provides the basis for a contrafactual unit of comparison and, as described in the main section, the hypothetical deforestation rates can be calculated if the project had not been implemented.



Recommendations for operation annex

No recommendations for operation were formulated in the project completion report.

Evaluation questions in line with OECD-DAC criteria/ex post evaluation matrix annex

Relevance

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension 1: Policy and priority focus			2	o	
1.1 Are the programme's objectives aligned with the (global, regional and country-specific) policies and priorities, in particular those of the (development policy) partners involved and affected and of the BMZ?	Are the measures' objectives aligned with the Brazilian policies and priorities? Were the objectives aligned with the policies and priorities of Minas Gerais, and did the project align with the executing agency's development policy priorities? To what extent did the project correspond to the Federal Ministry for Economic Cooperation and Development's (BMZ) development policy priorities?	Project documentation MP, interview with executing agency			
1.2 Do the programme's objectives take into account the relevant political and institutional framework conditions (e.g. legislation, administrative capacity, actual power structures (including those related to ethnicity, gender, etc.))?	Were the institutional framework conditions met to ensure that implementation went as planned? Did the project-executing agency have sufficient capacities to implement the project as planned?				
Evaluation dimension 2: Focus on needs and capacities of participants and stakeholders			3	o	
2.1 Are the programme objectives focused on the target group's developmental needs and capacities? Was the core problem identified correctly?	Has the core problem been correctly and completely identified? Are the assumptions about the target group, i.e. that there is a lack of income	Interview with executing agency, plausibility considerations			

	alternatives, which in turn creates a certain amount of deforestation pressure, correctly recorded? From today's perspective, could income-generating measures for the local population have increased the relevance of the project?				
2.2 Were the needs and capacities of particularly disadvantaged or vulnerable parts of the target group taken into account (possible differentiation according to age, income, gender, ethnicity, etc.)? How was the target group selected?	Was the assumption about the indirect benefit for the target group correct and sufficient?	Project documentation and interview with executing agency, PM			
2.3 Would the programme (from an ex post perspective) have had other significant gender impact potentials if it had been designed differently? (FC-E-specific question)	From today's perspective, could gender impact potential have been achieved through an alternative design of the project?	Interview with executing agency, interview with PM			
Evaluation dimension 3: Appropriateness of design			3	o	
3.1 Was the programme's design appropriate and realistic (technically, organisationally and financially) and in principle suitable for contributing to solving the core problem?	Does the second phase build on the learning experiences of Phase I, and have the experiences been included in implementation? Was the programme's design appropriate for solving the core problem? Could participatory involvement on the part of the local population have increased the project's effectiveness?	MP, Evaluation phase I, interview with executing agency and PM			
3.2 Is the programme design sufficiently precise and plausible (transparency and verifiability of the target system and the underlying impact assumptions)?	Is the target system also expedient from an ex post perspective? Were the impact assumptions correct?				

3.3 Were the selected indicators and their value allocation appropriate in their entirety (select one of the following to answer: indicators and values were appropriate / partially appropriate / not appropriate)? The rationale is differentiated according to indicators in Appendix 1. (FC-E-specific question)	Question is accepted as is.				
3.4 Please describe the results chain, incl. complementary measures, in the form of a graphical representation if applicable. Is this plausible? As well as specifying the original and, if necessary, adjusted target system, taking into account the impact levels (outcome and impact). The (adjusted) target system can also be displayed graphically. (FC-E-specific question)	See ToC	MP and PCR			
3.5 To what extent is the programme's design based on a holistic approach to sustainable development (interplay of the social, environmental and economic dimensions of sustainability)?	To what extent are the economic incentives for deforestation conceptually changed in order to reduce deforestation pressure?	Project documentation, interview with operational department			
3.6 For projects within the scope of DC programmes: is the programme, based on its design, suitable for achieving the objectives of the DC programme? To what extent is the impact level of the FC module meaningfully linked to the DC programme (e.g. outcome impact or output outcome)? (FC-E-specific question)	Is the project set up in such a way that it can make a contribution to achieving the programme objective?				
Evaluation dimension 4: Response to changes/adaptability			2	–	The points play a smaller role in the evaluation.
4.1 Has the programme been adapted in the course of its implementation due	To what extent was it possible to react within the project to changing framework	PP, reporting, interview with executing agency and PMs			

to changed framework conditions (risks and potential)?	conditions, in particular the two administrative reforms of the IFE and SEMAD?	

Coherence

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension 5: Internal coherence (division of tasks and synergies within German development cooperation):			2	o	
5.1 To what extent is the programme designed in a complementary and collaborative manner within German DC (e.g. integration into DC programme, country/sector strategy)?	Did the project align with German DC's country strategy/priorities? Were there synergies with other DC projects?	Project documentation			
5.2 Do German DC's instruments dovetail in a conceptually meaningful way within the scope of the programme, and are synergies put to use?	Are the various DC measures well coordinated with each other and can synergies be used?	Project documentation (also reporting, PCR)			
5.3 Is the programme consistent with international norms and standards to which German development cooperation is committed (e.g. human rights, Paris Climate Agreement, etc.)?	Was the project able to contribute to the objectives of the Paris Agreement? To what extent did the project contribute to achieving the MDGs (MDG 7, Target 9 / SDG 15, Target 1 and SDG 12, Target 2?)	Project documentation (especially reporting), plausibility considerations			
Evaluation dimension 6: External coherence (complementarity and coordination with actors external to German DC):			2	o	

6.1 To what extent does the programme complement and support the partner's own efforts (subsidiarity principle)?	To what extent does the project contribute to forest conservation in the initiatives of the project partners in Minas Gerais?	Reporting, PCR Interview with donor
6.2 Is the programme's design and implementation coordinated with the activities of other donors?	Which other donors are active in the forestry sector in Minas Gerais? Which other donors support the protection of the Mata Atlântica? Were these measures complementary?	Project documentation, interview with executing agency
6.3 Was the programme designed to use the existing systems and structures (of partners / other donors / international organisations) for the implementation of its activities and to what extent are these used?	Were existing systems and structures used for project implementation?	Project documentation, interviews with executing agency and partners
6.4 Are common systems (of partners / other donors / international organisations) used for follow-up / evaluation, learning and accountability?	Which joint systems for follow-up / evaluation, learning and accountability are there? Were they used? What role did these systems play in project implementation?	Project documentation, interviews with PM

Effectiveness

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension 7: Achievement of (intended) targets			2	o	
7.1 Were the (if necessary, adjusted) programme objectives (incl. capacity development measures) achieved? Table of indicators: Comparison of actual/target	--	Project documentation PCR, Indicator report from executing agency / operational department			

Evaluation dimension 8: Contribution to achieving objectives:			2	o	
8.1 To what extent were the programme's outputs delivered as planned (or adapted to new developments)? *(Learning/help question)*	Were the agreed services provided by FC as well as internal services? Was the quality of the outputs acceptable?	Project documentation, interview with executing agency and PM			
8.2 Are the outputs delivered and the capacities created used?	Are the land regulation instruments used? What role do the advisory boards play in the management of the protected areas? Are forest fire prevention and control plans used? Has there been a reduction in slash-and-burn farming, and are alternative methods being used? Is GIS data used for zoning and land regulation? Are the forestry incentive schemes used?	Project documentation PCR; interview with executing agency			
8.3 To what extent is equal access to the outputs delivered and the capacities created guaranteed (e.g. non-discriminatory, physically accessible, financially affordable, qualitatively, socially and culturally acceptable)?	Does everyone have equal access to the protected areas? How are the advisory boards appointed?	Interview with executing agency			
8.4 To what extent did the programme contribute to achieving the objectives?	Were the target values of the indicators achieved? To what extent can the achievement of the goal be derived from this?	PCR; plausibility considerations; secondary data			

8.5 To what extent did the programme contribute to achieving the objectives at the level of the intended beneficiaries?	To what extent did the target group (population living in the immediate vicinity of the UCs) benefit from the measures?	Interview with local population			
8.6 Did the programme contribute to the achievement of objectives at the level of particularly disadvantaged or vulnerable groups involved and affected (potential differentiation according to age, income, gender, ethnicity, etc.)?	No targets defined for local population and no corresponding measures. What role do indigenous groups play in MG? Have the interests of indigenous groups been taken into account?	Interview with executing agency, PM			
8.7 Were there measures that specifically addressed gender impact potential (e.g. through the involvement of women in project committees, water committees, use of social workers for women, etc.)? (FC-E-specific question)	Were women taken into account in the election of advisory boards?	Interview with executing agency			
8.8 Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the programme's intended objectives? *(Learning/help question)*	Was it possible to draw on lessons learned from the first phase or other projects for the protection of the Mata Atlântica? Has this contributed to achieving the module objective?	Project documentation, MP			
8.9 Which external factors were decisive for the achievement or non-achievement of the programme's intended objectives (also taking into account the risks anticipated beforehand)? *(Learning/help question)*	What role did the various reforms/restructurings play at the project-executing agency for the implementation of the project? What influence did this have on the target achievement?	Project documentation; interview with executing agency and PM; consultant			
Evaluation dimension 9: Quality of implementation			2	o	
9.1 How is the quality of the management and implementation of the programme to be evaluated with regard to the achievement of objectives?	To what extent did the deviation in the implementation structure contribute to the delays? Would the delays have also occurred with the implementation form established from Phase I?	Interview with executing agency and PM			

	What role did the implementation consultant play?				
9.2 How is the quality of the management, implementation and participation in the programme by the partners/sponsors evaluated?	Cf. questions above				
9.3 Were gender results and relevant risks in/through the project (gender-based violence, e.g. in the context of infrastructure or empowerment projects) regularly monitored or otherwise taken into account during implementation? Have corresponding measures (e.g. as part of a CM) been implemented in a timely manner? (FC-E-specific question)	Were measures specifically aimed at women implemented during the course of the project? Have risks of gender-based violence been identified and monitored?	Interview with executing agency and PM			
Evaluation dimension 10: Unintended effects (positive or negative)	Note: if there are **no** unintended effects: ➔ No weighting ➔ No evaluation		2	o	
10.1 Can unintended positive/negative direct impacts (social, economic, environmental and, if applicable, those affecting vulnerable groups) be seen (or are they foreseeable)?	Were unintended positive/negative effects identified during the course of the project or after completion? Did the project have unintended effects on the living conditions of the local population?	Interview with executing agency and PM; final inspection consultant, target group			
10.2 What potential/risks arise from the positive/negative unintended effects and how should they be evaluated?	What risks/potentials arise from these?				
10.3 How did the programme respond to the potential/risks of the positive/negative unintended effects?	Not applicable	Project documentation			

Efficiency

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension 11: Production efficiency			3	o	
11.1 How are the programme's inputs (financial and material resources) distributed (e.g. by instruments, sectors, sub-measures, also taking into account the cost contributions of the partners / executing agency / other participants and affected parties, etc.)? (Learning and help question)	How were the financial resources allocated to the various measures (cf. plan/actual)?	MP and PCR			
11.2 To what extent were the programme's inputs used sparingly in relation to the outputs produced (products, capital goods and services; if possible in a comparison with data from other evaluations of a region, sector, etc.)? For example, comparison of specific costs.	Did the costs calculated in the MP correspond to the actual costs? Was the planned investment budget adhered to? Why did deviations occur? How high was the FC contribution compared to the own contribution (cf. Plan Actual)?	Project documentation PCR and reporting			
11.3 If necessary, as a complementary perspective: To what extent could the outputs of the programme have been increased by an alternative use of inputs (if possible in a comparison with data from other evaluations of a region, sector, etc.)?					
11.4 Were the outputs produced on time and within the planned period?	Was the planned time schedule adhered to? Why and with which outputs did delays occur?	Reporting and PCR Interview with executing agency and PM			

	Could it have been possible to avoid the delays?				
11.5 Were the coordination and management costs reasonable (e.g. implementation consultant's cost component)? (FC-E-specific question)	Were the management costs reasonable cf. plan/actual costs implementation consultant)? Were the capacities provided by the implementation consultant selected correctly? How was the IC used? Were local systems used? What role did KfW play, for example, with regard to the award of contracts?	Project documentation; interviews with PM, executing agency, consultant			
Evaluation dimension 12: Allocation efficiency			3	o	
12.1 In what other ways and at what costs could the effects achieved (outcome/impact) have been attained? *(Learning/help question)*	What alternatives were there to strengthen the protection of the Mata Atlântica in Minas Gerais and support reforestation measures?	Project documentation; interview with executing agency			
12.2 To what extent could the results achieved have been attained in a more cost-effective manner, compared with an alternatively designed programme?	Could the results achieved have been achieved more cost-effectively with alternative approaches? Would a participative approach with the local population have been more expensive and/or more effective?	Interview with executing agency, PM			
12.3 If necessary, as a complementary perspective: To what extent could the positive effects have been increased with the resources available, compared to an alternatively designed programme?	Could the positive effects have been increased by a different programme design?	Interview with executing agency, PM			
12.4 In what respect was the use of public funds financially complementary?	No specification necessary				

Overarching developmental Impact

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension 13: Overarching developmental changes (intended)			2	o	
13.1 Is it possible to identify overarching developmental changes to which the programme should contribute? (Or if such changes are foreseeable for the future, please be as specific as possible in terms of time.)	Is there a visible strengthening of the selected conservation areas in Minas Gerais? a) Regarding forest stock b) Regarding biodiversity Were there fewer forest fires? To what extent have the main factors putting pressure on Mata Atlântica changed? Is the number of forest fires decreasing overall?	Interview with executing agency DNA analysis interpretation Interpretation of forest data			
13.2 Is it possible to identify overarching developmental changes (social, economic, environmental and their interactions) at the level of the intended beneficiaries? (Or if such changes are foreseeable for the future, please be as specific as possible in terms of time)	To what extent is the local population benefiting from the restoration of natural vegetation? Which sustainable development approaches are benefiting the local population? Was there an improvement in the target group's living conditions (income increases, improved food security?	Interview with executing agency (local population/beneficiaries) Internet research			
13.3 To what extent can overarching developmental changes be identified at the level of particularly disadvantaged or vulnerable parts of the target group to which the programme was intended to contribute? (Or, if such changes are	Not applicable				

foreseeable for the future, please be as specific as possible in terms of time)					
Evaluation dimension 14: Contribution to overarching developmental changes (intended)			2	o	
14.1 To what extent did the programme actually contribute to the identified or foreseeable overarching developmental changes (also taking into account the political stability) to which the programme was intended to contribute?	To what extent can stabilisation/improvement of forest stock be attributed to the project?	Interview with executing agency			
14.2 To what extent did the programme achieve its intended (possibly adjusted) developmental objectives? In other words, are the project impacts sufficiently tangible not only at outcome level, but at impact level? (e.g. drinking water supply/health effects)	Has the protection of the Mata Atlântica (forest stock and biodiversity) been improved? Was it possible to regenerate degraded surfaces?	Project documentation DNA analysis Forest stock data			
14.3 Did the programme contribute to the achievement of its (possibly adjusted) development-policy objectives at the level of the intended beneficiaries?	No targets defined for target group at this level; cf. questions above				
14.4 Did the programme contribute to overarching developmental changes or changes in life situations at the level of particularly disadvantaged or vulnerable parts of the target group (potential differentiation according to age, income, gender, ethnicity, etc.) to which the programme was intended to contribute?	Not applicable				
14.5 Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the programme's	Were there any project-specific factors that contributed to the significant delays in implementation?	Interview with PM and executing agency Plausibility considerations			

intended developmental objectives? *(Learning/help question)*	Could the delays have been prevented by a different setup?				
14.6 Which external factors were decisive for the achievement or non-achievement of the programme's intended developmental objectives? *(Learning/help question)*	Which political factors were decisive for the achievement of the programme's intended developmental objectives?	Project documentation Internet research Interview with executing agency			
14.7 Does the project have a broad-based impact? - To what extent has the programme led to structural or institutional changes (e.g.in organisations, systems and regulations)? (Structure formation) - Was the programme exemplary and/or broadly effective and is it reproducible? (Model character)	To what extent has the programme created sustainable structures at the level of the project-executing agency? To what extent has the programme contributed to the development of sustainable structures at the level of protected areas? Were the measures for the prevention and control of forest fires (Component 3) extended to all protected areas due to their success? Are the measures replicable in other protected areas outside Minas Gerais or do they have a model character?	Project documentation PCR Interview with executing agency			
14.8 How would the development have evolved without the programme (developmental additionality)?	How would the development of Mata Atlântica have evolved without the project?	Plausibility considerations, interview with executing agency			
Evaluation dimension 15: Contribution to (unintended) overarching developmental changes	Note: if there are **no** unintended effects: ➔ No weighting ➔ No evaluation		2	o	
15.1 To what extent can unintended overarching developmental changes (also taking into account political stability) be identified (or, if such changes are foreseeable for the future, please be as specific as possible in terms of time)?	No unintended impacts were identified to date.				

15.2 Did the programme noticeably contribute to unintended (positive and/or negative) overarching developmental impacts, or are such impacts foreseeable for the future?	No unintended impacts were identified to date.	
15.3 Did the programme noticeably contribute to unintended (positive or negative) overarching developmental changes at the level of particularly disadvantaged or vulnerable groups (within or outside the target group; do no harm, e.g. no strengthening of inequality (gender/ethnicity)), or are such changes foreseeable for the future?	No unintended impacts were identified to date.	

Sustainability

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension 16: Capacities of participants and stakeholders			2	o	
16.1 Are the target group, executing agencies and partners institutionally, personally and financially able and willing (ownership) to ensure that the programme's positive effects continue over time (after the end of the promotion)?	Do the competent authorities in Minas Gerais have the necessary capacities to ensure that the positive effects continue over the long term?	Interview with executing agency, Internet research			

16.2 To what extent do the target group, executing agencies and partners demonstrate resilience to future risks that could jeopardise the impact of the programme?	To what extent does Minas Gerais prevent the risk of a lack of financing for the conservation of Mata Atlântica, especially in the protected areas? To what extent are forest fire prevention measures implemented?	Interview with executing agency			
Evaluation dimension 17: Contribution to supporting sustainable capacities:			2	o	
17.1 Did the programme contribute to the target group, executing agencies and partners being willing (ownership) on an institutional, staffing and financial level to ensure that the programme's positive effects continue over time and, where necessary, to curb negative effects?	Are the tools procured and established by the project still being used and are they having a positive effect? To what extent did the project contribute to ensuring the long-term and participatory management of protection areas by creating/supporting local structures (e.g. advisory boards)? Do the advisory boards perform their tasks and have conflicts eased?	Project documentation Interview with project-executing agency			
17.2 Did the programme contribute to strengthening the resilience of the target group, executing agency and partners to risks that could jeopardise the effects of the programme?	To what extent has the programme contributed to the establishment of alternative forms of land use? To what extent did the project contribute to forest fire prevention?	Interview with executing agency, internet research			
17.3 Did the programme contribute to strengthening the resilience of particularly disadvantaged groups to risks that could jeopardise the effects of the programme?	What are the consequences of climate change for the target group? Did the project have a positive effect on the target group's resilience to the consequences of climate change?				
Evaluation dimension 18: Durability of impacts over time			2	o	

18.1 How stable is the programme's context (e.g. social justice, economic performance, political stability, environmental balance)? *(Learning/help question*)	What influence did the change in political direction have on the status of the Mata Atlântica in Minas Gerais? What influence do climatic changes have on the stocks in Mata Atlântica in MG?	Interview with executing agency, Internet research
18.2 To what extent is the durability of the programme's positive effects influenced by the context? *(Learning/help question)*	What influence do external factors, such as political stability, consequences of climate change (e.g. in the form of forest fires), etc. have on the programme's sustainability?	Interview with executing agency
18.3 To what extent are the positive and, where applicable, the negative effects of the programme likely to be long-lasting?	To what extent can it be assumed that the protection and regeneration of the Mata Atlântica in Minas Gerais will continue in the long term?	Plausibility considerations
18.4 To what extent can the programme's gender results be considered permanent (ownership, capacities, etc.)? (FC-E-specific question	Not applicable	