



Final evaluation of the
project "Strengthening
resilience to climate change
through integrated
agricultural and pastoral
management in the Sahelian
zone in the framework of
Mali's sustainable land
management approach"

**Project evaluation series
08/2020**

**Final evaluation of the project
"Strengthening resilience to climate
change through integrated agricultural
and pastoral management in the
Sahelian zone in the framework of
Mali's sustainable land
management approach"**

**Project code: GCP/MLI/038/LDF
GEF ID: 4822**

Required citation:

FAO. 2020. *Final evaluation of the project "Strengthening resilience to climate change through integrated agricultural and pastoral management in the Sahelian zone in the framework of Mali's sustainable land management approach"*. Project Evaluation Series, 08/2020. Rome.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

© FAO, 2020



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/legalcode>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO endorses any specific organization, products or services. The use of the FAO logo is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons licence. If a translation of this work is created, it must include the following disclaimer along with the required citation: "This translation was not created by the Food and Agriculture Organization of the United Nations (FAO). FAO is not responsible for the content or accuracy of this translation. The original French edition shall be the authoritative edition."

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be conducted in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

Third-party materials. Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Sales, rights and licensing. FAO information products are available on the FAO website (www.fao.org/publications) and can be purchased through publications-sales@fao.org. Requests for commercial use should be submitted via: www.fao.org/contact-us/licence-request. Queries regarding rights and licensing should be submitted to: copyright@fao.org.

Cover photo credits: ©FAO Mali

Contents

Acknowledgments.....	v
Executive summary	vii
1. Introduction.....	1
1.1 Purpose of the evaluation	1
1.2 Methodology	1
1.3 Limitations.....	2
2. Background and context of the project.....	3
2.1 Context and challenges faced by the project.....	3
2.2 Project description.....	4
3. Evaluation criteria and main findings	7
3.1 Relevance.....	7
3.1.1 Overall relevance	7
3.1.2 Gender mainstreaming in the design phase	9
3.1.3 Relevance of design and targets.....	9
3.2 Effectiveness.....	11
3.2.1 Execution level per component.....	12
3.2.2 Progress towards achieving impacts	17
3.2.3 Outcome achievement: Success factors and challenges.....	21
3.3 Project efficiency, implementation and execution	23
3.3.1 Management arrangements	23
3.3.2 Planning of activities	24
3.3.3 Financing and co-financing.....	24
3.3.4 Gender mainstreaming	26
3.4 Sustainability.....	27
3.4.1 Financial risks to sustainability.....	27
3.4.2 Socio-economic risks to sustainability.....	27
3.4.3 Risks related to the institutional framework and governance	28
3.4.4 Environmental risks to sustainability	28
3.4.5 Security risks to sustainability	28
3.5 Factors affecting performance.....	28
3.5.1 Stakeholder involvement.....	29
3.5.2 Monitoring-evaluation system and knowledge management	29
4. Conclusions and recommendations.....	31
4.1 Conclusions.....	31
4.2 Recommendations.....	34
4.2.1 Measures to enhance the final benefits of the project	34
5. Lessons learned	37
References.....	39

Figures and tables

Figures

Figure 1: Learning space in an agro-pastoral field school (APFS)	17
Figure 2: Beneficiary producers of APFS in Nango Sahel village (Niono district)	19
Figure 3: Beneficiary producers of APFS in Nango Sahel village (Niono district)	19
Figure 4: A beneficiary of good practices (sheep fattening with formula feed - Kobri village)	19
Figure 5: A beneficiary poultry farmer in Kobri village	19

Tables

Table 1: Global Environment Facility (GEF) evaluation criteria	x
Table 2: Project co-financing (in USD)	25
Table 3: Gender distribution of participants in facilitator training	27

Acknowledgments

The Office of Evaluation of the Food and Agriculture Organization of the United Nations (FAO) would like to thank all those who contributed to this report. The evaluation team was led by an agro-economist and international project/programme evaluation consultant, Mr Ibrahim Nienta, and consisted of a gender expert, Ms Bintou Nimaga.

The Office of Evaluation is grateful to all beneficiaries, stakeholders and FAO staff in Mali who gave their time and ideas to the evaluation team, and to all those who facilitated the work of the consultants in the implementation of this final evaluation.

The evaluation team would like to thank the National Directorate of Agriculture and its decentralised services (Niono, Banamba and Kita), the National Directorate of Animal Production and Industries, the National Meteorological Agency, the Institute of Rural Economy, FAO, the project coordination unit and Focal Points, national and international consultants, the FAO Office of Evaluation team and all stakeholders who provided answers to the various questions of the evaluation team. It further expresses its gratitude to the Environment and Sustainable Development Agency, the administrative and municipal authorities of the districts of Niono, Banamba and Kita, and the village communities of these three districts.

Acronyms and abbreviations

APFS	Agro-pastoral field school
CCA	Climate change adaptation
DNA	National Directorate of Agriculture
DNPIA	National Directorate of Animal Production and Industries
ESCDP	Economic, social and cultural development plan
ESDA	Environment and Sustainable Development Agency
FAO	Food and Agriculture Organisation of the United Nations
FFS	Farmer field school
GEF	Global Environment Facility
IER	Institute of Rural Economy
MDR	Ministry of Rural Development
MEEA	Ministry of the Environment, Water and Sanitation
NAIP	National Agricultural Investment Program
NAPA	National Adaptation Programmes of Action
NCCP	National Climate Change Policy
NCCS	National Climate Change Strategy
PCU	Project Coordination Unit of the project
PQAP	Five-Year Pastoral Development Plan
SIF-SLM	Strategic Investment Framework for sustainable land management
SLM	Sustainable Land Management
SLPIA	Local Service of Animal Production and Industries
VSLA	Village Savings and Loan Associations

Executive summary

Introduction

1. In order to meet the climate challenges faced by Mali, Project GCP/MLI/038/LDF "Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the framework of Mali's Sustainable Land Management Approach" aims at building the capacities of agro-pastoralism in the Banamba, Kita and Niono districts to cope with climate change. The project has three main components: (i) development of climate change adaptation (CCA) approaches, plans and tools for agricultural and agro-pastoral farming systems in vulnerable areas; (ii) capacity building of small agro-pastoralists to enable them adopt CCA technologies and good practices; (iii) systematic inclusion of CCA in development policies and programmes related to agriculture and livestock with a view to sustainability.
2. The final evaluation of Project GCP/MLI/038/LDF of the Food and Agriculture Organisation of the United Nations (FAO) and the Global Environment Facility (GEF) "Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the framework of Mali's Sustainable Land Management Approach" aims at assessing, on the basis of factual, quantitative and qualitative data, the performance of the project over the 2015-2019 period.
3. In accordance with the guidelines, rules and procedures established by FAO and GEF, the objectives of the evaluation are to assess the achievement of the project objectives and to draw lessons that can improve not only the sustainability of the project results but also the overall quality of FAO's programmes. The evaluation is structured around the criteria of relevance, effectiveness, efficiency, sustainability and impact, in line with the GEF guidelines for conducting final project evaluations. It provides answers to the various evaluation questions formulated in relation to these criteria (Annex 2).
4. The evaluation team consists of two consultants: an international consultant and agro-economist specialised in project/programme evaluation, and a national consultant specialised in project evaluation and gender analysis.
5. The methodological approach used was participatory and consultative, ensuring close collaboration between the various stakeholders: National Directorate of Agriculture (DNA), National Directorate of Animal Production and Industries (DNPIA), Food and Agriculture Organisation of the United Nations (FAO), Mali Meteorological Agency, Institute of Rural Economy (IER), Environment and Sustainable Development Agency (ESDA), administrative authorities, local communities, beneficiaries. It was first based on a literature review and then on interviews and field visits in the agro-pastoral field schools (APFS) of the Banamba, Kita and Niono districts. The evaluation mission took place in November 2019, seven APFS were visited in the three project districts and nearly 35 people were interviewed. Women were interviewed in addition to the general meetings held in each of the villages visited by the evaluation team.

Main findings

Strategy and relevance of the project

6. The project strategy is based on a participatory approach (mainly through APFS) that takes into account the challenges of agro-pastoralism in a context of ecosystem transformation as a result of climate change. It aims at testing and promoting a set of good practices in a learning space that strengthens the resilience of agro-pastoralists to climate change, mainly through the APFS approach. The APFS approach differs from the previous Farmer Field Schools (FFS) approach in that it focuses on a strong integration between agriculture and livestock, with most of the targeted stakeholders being both farmers and breeders. It therefore has a clear comparative advantage. The project contributes specifically through its various deliverables to the achievement of the goals defined by national priorities, international commitments, GEF priorities and commitments and FAO programming frameworks (2013-2017 and 2018-2022) in Mali (FAO, 2012 and 2017).
7. The project's objective "to boost the capacity of Mali's agro-pastoral activities to cope with climate change by incorporating CCA strategies, practices and technologies into ongoing agricultural and agro-pastoral development initiatives" is being achieved very satisfactorily. The activities and methods of intervention developed therefore appear relevant to the overall objective pursued, in particular by introducing CCA practices and technologies directly to agro-pastoralists through APFS.

Effectiveness

8. The project met or exceeded almost all of its planned outcomes. The project established 121 APFS (the target was 101 APFS), with 3 829 agro-pastoralists as members of these APFS, 47 percent of whom are women. The actions carried out focused on activities in the 2015, 2016, 2017, 2018 and 2019 work plans. On average, the physical implementation rates were 127.81 percent for the first component, 172.58 percent for the second component, 156 percent for the third component and 122.9 percent for the fourth component.
9. The performance of APFS is further confirmed by the dynamism of grouping and interaction created and by the evident appreciation of the agro-pastoralists who learn new techniques and knowledge.
10. However, the project had planned pilot investments to increase ecosystem resilience and contribute to building the capacity of agro-pastoralists to adapt to climate change. Due to the lack of co-financing, these investments (which generally have high implementation costs) could not be made, although they were included in the project's programme. Thus, after the mid-term evaluation in 2016, the project was readjusted to take into account the activities that could be carried out with GEF funding.

Efficiency

11. With regard to the human and material resources used as well as the financial means used to achieve the expected progress, the mission notes that the human, material and financial means have been used appropriately. The project coordination team also showed good flexibility and adaptability when the project was confronted with a number of institutional difficulties, including the question of its anchoring or attachment to ESDA and the

departure of some project staff. The planning of the activities was adequate and the financial management was satisfactory, apart from the problem of implementing the co-financing mentioned above.

Sustainability

12. At the socio-economic level, the activities carried out have a fundamental role in the creation of sustainable job and income. In addition to the training and employment of APFS facilitators, this is linked to the capacity of all beneficiary agro-pastoralists to better cope with climate change and to preserve their job and income.
13. The financial factor and the insecurity of the project intervention area are the two main risks for the sustainability of the project. However, these risks can be minimised by building the capacity of agro-pastoralists on resilient practices that are within their reach. In addition, the networking of stakeholders through a functional WhatsApp link, and the Village Savings and Loan Associations which have been set up, are elements that strengthen the resilience of agro-pastoralists and render their achievements sustainable.

Factors affecting performance

14. **Stakeholder engagement** – both at the level of those responsible for implementing or managing certain activities, and at the level of stakeholders with an interest in the project – was effective, allowing for continuous involvement during project preparation and implementation.
15. The **monitoring-evaluation** system was also set up efficiently (see Table 1). Project monitoring was in fact done through the various activity reports allowing the communication of the results to the main stakeholders (Government, FAO and GEF). Lessons learned are disseminated through a number of communication channels, including: community radio, open days, exchange trips/visits, the creation of a WhatsApp group, etc. Debriefing workshops on the implementation of the project are conducted at the level of each district. The **knowledge outputs** resulting from the project have been widely shared.

Environmental and Social Safeguards

16. The actions undertaken under the project have an overall positive impact on the ecosystems of the Banamba, Kita and Niono districts as they divert communities from unsustainable practices, such as logging. Through its WhatsApp network and the adoption of local natural resource management conventions, the project promotes the reduction of chemicals and the use of plant extracts in the control of Fall Armyworm and other crop pests.
17. In addition, the project integrates a strong institutional and community participation dimension in its capacity building activities. In addition, the project supports present and future initiatives. For example, the project has actively participated in the regional network of sister projects (in Burkina Faso, Niger and Senegal); at the same time, the project's good practices continue to serve as a source of inspiration for other projects in Mali, such as the GIZ project "Supporting the strengthening of livestock and pastoral economy in the Koulikoro Region". Finally, it focuses on the dissemination of technologies and techniques for the integrated management of agro-pastoral resources with high added value.

Gender mainstreaming

18. The analysis of the challenges presented in the project document does not take into account the social and socio-economic characteristics of the intervention areas, whereas the three districts have different farming systems (traditional system in Banamba, industrial cotton production in Kita and irrigated rice in Niono). In particular, the project activities do not adopt a gender-specific approach.
19. Due to the lack of specific gender-related objectives, particularly with regard to transforming gender-related social relations, the project was oriented towards reducing discrimination related to social inequalities that prevent women from benefiting equitably from the resources and services proposed by the project in favour of CCA. Finally, the risk matrix does not present any hypothesis of risks related to the achievement of the planned turnout of women.

Table 1: Global Environment Facility (GEF) evaluation criteria

GEF criteria	Rating ¹	Comments
1) Relevance		
Overall relevance of the project	HS	The project contributes specifically through its various deliverables to the achievement of the goals defined by national priorities, international commitments, GEF priorities and commitments and FAO programming frameworks (2013-2017 and 2018-2022) in Mali (FAO, 2012 and 2017). Through the adoption of good agro-pastoral practices, it contributes to the implementation of reference policies in the following areas: climate change mitigation; rural, socio-economic, environment development; and, to a lesser extent, biodiversity protection. It is also in line with FAO and GEF's strategic objectives and action plan related to gender policies. The activities and intervention methods developed are relevant; they contribute to achieving the overall project outcome and meeting beneficiaries' expectations.
2) Effectiveness		
Overall evaluation of project outcomes	HS	The analysis of the overall physical implementation rates shows that overall effectiveness is highly satisfactory. The project has achieved almost all the outcomes of the different components and progress is visible.
Component 1 Develop CCA approaches, plans and tools for agricultural and agro-pastoral farming systems in vulnerable areas.	HS	The analysis of the component's physical implementation rates shows that effectiveness is highly satisfactory. All outputs have been delivered, some – such as the development of local agreements – are even in higher than expected quantities. There are still some conflicts between farmers and breeders.

¹ Rating: Highly Satisfactory (HS), Satisfactory (S), Relatively Satisfactory (RS), Relatively Unsatisfactory (RU), Unsatisfactory (U), Highly Unsatisfactory (HU), Unable to rate (UR)

Component 2 Strengthen the capacities of small agro-pastoralists to enable them to adopt CCA technologies and good practices.	HS	The analysis of the component's physical implementation rates shows that effectiveness is highly satisfactory. All outputs have been delivered, some even in larger quantities than planned (in particular, 121 APFS have been established, out of a target of 101).
Component 3 Systematically include CCA in development policies and programs related to agriculture and livestock to ensure the integration and adoption of CCA practices in a sustainable manner.	HS	The analysis of the component's physical implementation rates shows that effectiveness is highly satisfactory. All outputs have been delivered; some are even in higher than expected quantities.
3) Project efficiency, implementation and execution		
Overall quality of project implementation and adaptive management	S	<p>The project, executed following FAO's Direct Execution Modality (with the various Memoranda of Understanding signed), benefits from the Organisation's comparative advantage. Indeed, FAO has extensive experience in the APFS approach and in managing projects in the agricultural and rural context of Mali, as well as proven technical expertise in many key project areas, such as crop and livestock development and climate change adaptation.</p> <p>The project encountered a number of challenges, to which the project team responded and adapted.</p>
Quality of execution	S	The Direct Execution Modality is beneficial because it is more efficient and requires competitive procurement procedures for the acquisition of goods and services. It ensures transparency but the execution function must be separated from the implementation activity. ² Besides, FAO, as a neutral platform, is also in a position to bring several stakeholders around the table.
Effectiveness (including cost effectiveness and timeliness)	S	The analysis of the project's financial flows compared to the ratios between management costs and investments (cost effectiveness) concludes that for every 2 USD invested in physical achievements (corridor, market garden perimeter with a solar pumping system, artificial insemination, learning of good agro-pastoral practices, etc.), less than 1 USD is used for management costs.

² It should be noted that the duties of the Budget Manager and that of the technical department are separated, and supervised by the FAO-GEF Coordination Unit.

		The project has faced a number of institutional difficulties, including the question of its anchoring or its attachment to ESDA, which caused a seven-month blockage, and the departure of some project staff. These difficulties had an impact on progress towards the project's mid-term outcomes. However, from October 2017 until the final evaluation of the project, the outcomes obtained are indeed highly satisfactory.
4) Sustainability		
Overall sustainability	Moderately likely	<p>At the socio-economic level, the activities carried out have a fundamental role in terms of sustainable job and income generation and contribute to strengthening the resilience of communities to climate change through integrated agricultural and pastoral management. The diversification of activities through agro-pastoral practices aimed at rehabilitating ecosystems, is an important factor in promoting adaptation. However, land tenure remains a problem in the intervention area. The weak capacities of the beneficiaries in terms of good governance represent a high risk for the sustainability of the achievements.</p> <p>In terms of finance, very few agro-pastoralists are actually willing to contribute financially to support the activities. However, in general, the financial factor for APFS is not a handicap for sustainability. For example, the Village Savings and Loan Associations have helped to mobilise credit funds to finance development activities for women and men in APFS.</p>
5) Factors affecting performance (Monitoring-evaluation and stakeholder involvement)		
Overall quality of stakeholder involvement	S	<p>There are two levels of involvement: (i) the implementation team; (ii) the wider group.</p> <p>Stakeholders identified during the preparation of the project continued were involved in its implementation, notably through their strong participation in the Steering Committee.</p>
Overall quality of monitoring and evaluation	S	Project monitoring and evaluation is integrated into that of the Country Office, which takes into account all project monitoring and evaluation mechanisms. The project uses conventional tools which have been developed, tested and validated by FAO for the monitoring and evaluation of field schools.
Design of monitoring and evaluation at the start of the project	S	The monitoring and evaluation plan and associated indicators were established at the design stage of the project (the project document).
Implementation of the monitoring and evaluation plan	S	The successive monitoring and evaluation of the project was based on a mechanism ranging from the kick-off workshop to the production of annual activity reports and implementation reports. A monitoring and evaluation plan defining the precise indicators, the persons responsible and the frequency of data collection, has been implemented.

Conclusions

Conclusion 1. The strategic relevance of the project is highly satisfactory.

20. The project formulation is in line with FAO and GEF's commitment to provide solutions to improve the adaptive capacities of agro-pastoralism and address the consequences of climate change, including through the systematic integration of CCA strategies, practices and technologies into local initiatives. The project is consistent with national priorities, international commitments and the needs expressed by beneficiaries for climate change adaptation. It also contributes to the implementation of reference policies in the following areas: rural, socio-economic and environment development and, to a lesser extent, biodiversity protection.
21. The project's intervention logic is based essentially on solving the problems of agro-pastoralists and the adhesion of local communities to CCA technologies, a participatory APFS approach, promoting integrated management of agro-pastoral resources and the involvement of national institutions. The risks identified by the project are also relevant and the strategies identified to reduce them are in most cases considered adequate.

Conclusion 2. The overall relevance of the project is highly satisfactory.

22. The project contributes specifically, through its various deliverables, to the achievement of the defined objectives. The adopted activities and intervention methods contribute to achieving the overall outcome and meeting beneficiaries' expectations. The analyses carried out have shown the soundness of the project and the consistency of the various effects and outputs defined with the various priorities set out, even in the absence of an explicit formulation of the project's intervention logic through a theory of change.

Conclusion 3. Progress towards the achievement of impacts are highly satisfactory. The project has facilitated a continuous and dynamic exchange between agro-pastoralists and has had a positive impact in some areas.

23. The project's achievements have surpassed expectations: the trajectory of progress is therefore highly satisfactory. Factors contributing to the success of the project include: the participatory approach of the project, based entirely on APFS, and the adaptability of the project team to institutional and operational challenges. Difficulties are, however, observed despite the progress made. Overall, they concern: the lack of stability of stakeholders within certain structures; the weak capacity of endogenous structures that manage Village Savings and Loan Associations (VSLAs); the poor integration of the various measures for implementing local adaptation strategies; the lack of consideration of agro-pastoral product processing and/or conservation techniques; land tenure problems in the intervention area; the extensive use of harmful practices that contribute to further weakening the ecosystems in the project intervention area (bush fires and pesticides); and the lack of concrete implementation of co-financing.
24. The 121 APFS have proved to be learning spaces for good practices, as they globally facilitate an integrated understanding of the ecosystem and agro-pastoral approach, in particular through a number of mechanisms that inevitably have an impact on the economic, ecological and social environment of farmers and breeders. The adoption and

respect of good agro-pastoral practices considerably improves the productivity and yields of animal and plant speculation subject to the consequences of climate change in the project intervention area. Progress in this area is 35 percent on average for dry cereals and 44.5 percent on average for market gardening. In addition, 1 500 producers at the APFS level have benefited from seeds (3 000 kg) of fodder species, market gardening, cereals and plants, which are sufficiently resistant to drought and climatic hazards – including 1,000 kg of potato seeds and 2 000 kg of seeds of fodder species and cereals.

25. The setting up of 121 APFS has fostered regrouping in all the villages targeted by the project. In the majority of villages, conflicts between farmers and breeders related to the management of agro-pastoral resources are mostly resolved by APFS.
26. The project has provided women with access to innovative CCA practices to improve their incomes. For example, VSLAs have helped to mobilise significant credit funds to finance development activities for women and men in APFS according to some APFS members. 42 VSLAs mobilised 1 187 members, 914 of whom were women (77 percent). The amounts collected in less than three months from members' subscriptions amounted to CFAF (African Financial Community Franc) 8 369 520. These amounts are used in the form of loans repayable with interest, solidarity funds or for the purchase of seeds for the group.
27. The project has also promoted the establishment of an exchange forum between farmers, pastoralists and facilitators, notably through the creation of a WhatsApp group with more than 50 members.
28. Finally, this project was a precursor to the "Resilient, productive and sustainable landscapes in Mali's Kayes Region" project, whose PIF has already been produced.

Conclusion 4. The overall efficiency of the project, the quality of execution and management which showed good responsiveness are satisfactory.

29. In accordance with FAO's Direct Execution Modality, FAO is the implementing agency but also the executing agency of the project, with memoranda of understanding to provide services.
30. The project structure consists of a coordination unit based in Bamako. The latter includes: (i) a national project coordinator; (ii) a monitoring and evaluation expert; (iii) temporary staff who are specialised experts in different fields; (iv) three advisers for local activities, whose duty is to ensure coordination with local government agencies and all similar activities taking place in the country; (v) two drivers; and a participatory Steering Committee, which met approximately once a year.³ This structure ensured effective planning and implementation of project activities. The project resources (consisting mainly of GEF's contribution) were used appropriately. However, the low level of co-financing mobilisation prevented from carrying out certain specific planned activities. The monitoring-evaluation of the project relied effectively on the various monitoring tools put

³ The Steering Committee includes: (i) a representative of FAO; (ii) a representative of the Ministry of Rural Development; (iii) a representative of the National Directorate of Agriculture; (iv) a representative of the National Directorate of Animal Production and Industries; (v) a representative of Mali Meteorological Agency; (vi) a representative of the Institute of Rural Economy; (vii) the governors of the three regions or their representatives; (viii) the prefects of the three districts; (ix) the presidents of the councils of the three districts; (x) representatives of civil society organisations.

in place. It also generated effective communication on the progress of activities. The knowledge outputs resulting from the project have been widely shared.

31. With regard to the human and material resources used as well as the financial means used to achieve the different targets, the mission team rates the effectiveness of the project as satisfactory.

Conclusion 5. The effectiveness of the project is highly satisfactory.

32. The analysis of the physical implementation rates per component shows that the overall effectiveness is satisfactory. More than 98 percent of the planned outputs per component have been achieved. The project has thus achieved almost all the outcomes of the different components and progress is visible. One of the reasons agro-pastoralists appreciate this approach is that it allows them to meet regularly (once a week), learn new techniques quickly and acquire new knowledge (e.g. workshops on collecting, analysing and using weather data). This is sufficient evidence of the effectiveness of APFS which create a strong interaction and dynamic between agro-pastoralists and facilitators (technicians of the technical service).

Conclusion 6. The sustainability of the project is moderately likely.

33. At the socio-economic level, the activities implemented by the project have a fundamental role in the creation of sustainable job and income. At the financial level, although most of the beneficiary communities are poor and their financial capacities make it difficult for them to continue the activities, some beneficiaries will certainly finance the activities they deem appropriate. In addition, the networking of stakeholders through a functional WhatsApp link, and the Village Savings and Loan Associations set up, are elements that strengthen the resilience of agro-pastoralists and render their achievements sustainable. Nevertheless, the weak capacity of the endogenous structures that manage VSLAs should be considered.
34. Besides, land tenure remains a problem in the intervention area.
35. The involvement of decentralised and deconcentrated state services helps to channel efforts and resources so as to perpetuate the project's achievements.
36. The weak capacities of the beneficiaries in terms of good governance represent a significant risk that may have an impact on the sustainability of the achievements. The use of herbicides by some beneficiaries of degraded land restoration activities, and the frequent practice of bushfires pose serious environmental threats to the agro-pastoral resources of the project area. It should be noted that information on the hazards of pesticides and on existing alternatives (plant extracts) is exchanged through the WhatsApp network.
37. Insecurity in the project intervention area, particularly in the Banamba and Niono districts, represents the highest risk for the project even if the communities in the intervention villages of these areas try to adapt.

Conclusion 7. Environmental and social safeguards are respected.

38. The project is classified in category B (projects whose negative impacts on the environment and populations are less severe than those of category A projects. These impacts are limited

and rarely irreversible) pursuant to Decree No. 2018-0991/ P-RM of 31 December 2018. The actions undertaken under the project have an overall positive impact on the ecosystems of the Banamba, Kita and Niono districts since they divert communities from bad practices, as it can be seen throughout the intervention area.

Conclusion 8. The project has made modest efforts to address gender mainstreaming.

39. However, gender mainstreaming is insufficiently analysed in the project document in the sections dealing with the assessment and justification of the project feasibility. Indeed, the relevance analysis does not take into account women's vulnerability to climate change and its consequences on the project's resilience and adaptation activities. Furthermore, no reference is made to social discrimination and the unequal access of women pastoralists and agro-pastoralists to productive resources, which limit their equitable participation in achieving the objectives of APFS.
40. The lack of a specific analysis differentiated according to the socio-economic and socio-environmental realities of the three districts selected as the project intervention area, has resulted in a global planning model that is not gender-specific and often inadequate in relation to the practical and strategic needs of the project's female and male beneficiaries. Nevertheless, during the implementation, the project has made efforts, in the area of women's empowerment, to promote a dynamic of collaboration between men and women.

Recommendations

Recommendation 1 (to FAO and ESDA, with high importance). **Advocate for the institutionalisation of the APFS approach.** In order to address the uncertain stability of stakeholders within certain structures, the project has to seek the institutionalisation of the APFS approach from the Ministry of Agriculture.

Recommendation 2 (to national structures [DNA, DNPIA], FAO, with high importance). **Build the capacities of VSLA members.** The staff of these VSLAs needs to be more structured and trained to promote effective and efficient governance of resources in order to ensure their sustainability. Some members need to be trained in simplified bookkeeping and financial statements.

Recommendation 3 (to national structures [DNA, DNPIA], FAO, with moderate importance). **Strengthen the various measures for implementing local adaptation strategies.** For a better integration of locally implemented measures, it is important to build the capacities of VSLA members in the processing and preservation of agricultural and animal products.

Recommendation 4 (to the Project Team, FAO and ESDA, with high importance). **Organise a national workshop on land tenure issues after project closure.** The ongoing process of acquiring plots is not effective and most APFS do not have their own plots. A national workshop bringing together the various stakeholders can facilitate the acquisition of these plots.

Recommendation 5 (to the Project Team, FAO, GEF and ESDA, with moderate importance). **Draw lessons from the weakness and difficulties in mobilising co-financing** to avoid this happening again in future projects involving co-financing.

Recommendation 6 (to FAO, national structures [DNA, DNPIA, Mali Meteorological Agency, IER], with high importance). **Consolidate project achievements such as the transformation of APFS into cooperatives and cooperative union, and contribute to their scaling up with the new GEF project in the Kayes region.** This complementary programme must also provide for the centralisation and dissemination of good agro-pastoral practices, in particular through the implementation of a small-scale programme.

1. Introduction

1.1 Purpose of the evaluation

1. The final evaluation of Project GCP/MLI/038/LDF of the Food and Agriculture Organisation of the United Nations (FAO) and the Global Environment Facility (GEF) entitled "Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the framework of Mali's Sustainable Land Management Approach", implemented from November 2019 to January 2020, aims at assessing the progress made by the project and covers the 2015-2019 period.
2. The objective of the final evaluation is to assess, on the basis of factual, quantitative and qualitative data, the performance of the project over the period considered. To achieve this, it mainly analyses: (i) project strategy and relevance; (ii) effectiveness and achievement of outcomes; (iii) project efficiency, implementation and execution; (iv) sustainability; and (v) factors that contributed or not to the achievement of outcomes. The evaluation also analyses gender mainstreaming in a cross-cutting manner. The various findings of the evaluation are structured to ease the implementation of the recommendations and lessons learned and their use in future FAO and GEF projects.

1.2 Methodology

3. The evaluation methodology follows the guidelines for the final evaluation of projects executed by the FAO Office of Evaluation and funded by the GEF. The final evaluation provides information that is evidence-based, credible, reliable, qualifiable, quantifiable and useful. An inception report, detailing the methodological approach and the various key steps of the mission, was prepared and sent to the FAO Evaluation Office and the project team in the first week of the mission. The different criteria are analysed through the evaluation questions, in accordance with the terms of reference of the evaluation. The fully developed evaluation questions are available in Annex 1.
4. A collaborative and participatory approach was used during the evaluation process to ensure the active participation of the various project stakeholders.
5. The evaluation relied on:
 - i. A literature review of all relevant sources of information: project document, mid-term evaluation report, project implementation reports (PIR), annual activity reports, semi-annual reports (PPR), AWPBs, Steering Committee minutes, results matrix, technical notes, technical and supervision mission reports, training reports, national consultants' reports and any other document deemed useful for the evaluation.
 - ii. Interviews with stakeholders (nearly 35 people were interviewed):
 - At the national level: the National Directorate of Agriculture (DNA), the National Directorate of Animal Production and Industries (DNPIA), FAO, the GEF focal point at the level of the Environment and Sustainable Development Agency, the Mali Meteorological Agency, the Institute of Rural Economy, former project consultants including the expert trainer in climate change and adaptation strategy, the expert in good practices and gender, the expert in participatory and negotiated territorial

diagnosis, and the project coordination team (the coordinator and the monitoring and evaluation expert).

- At level of the three districts: the prefectural and municipal authorities of the Banamba, Kita and Niono districts; the prefectural agricultural services (local support and advisory service); the local services for animal production and industries (SLPIA); Local Activity Advisors (LAAs) of the project; members of the networks of facilitators (including supervisors and master trainers) from the Banamba, Kita and Niono districts (consisting of representatives of technical services, non-governmental organisations [NGOs], private providers and agro-pastoralists).
 - At the village level: the agro-pastoral field schools (APFS) and beneficiaries, members of producer-facilitator networks and members of Village Savings and Loan Associations (VSLA). It should be noted that the total number of APFS is 121, with 3 829 agro-pastoralists as members of these schools, 47 percent of whom are women. Among these APFS, the evaluation mission personally visited 7 APFS: Quizambougouou and Nango Sahel (Niono district), Djenidjè Bambara, Bégnéni and Bendougouba (Banamba district), Kobri and Kassaro (Kita district). The APFS villages to be visited were selected on the basis of certain criteria, namely: their performance, size, date of establishment, number of women and men in the APFS, site with APFS facilitators.⁴ The objective of these criteria was to visit the APFS with different characteristics: for example, the successful and the less successful APFS. Women were interviewed in addition to the general meetings held in each of the villages visited by the mission team. The opinions of women and men at different socio-professional levels were collected and analysed by the mission.
6. These interviews, whether individual or collective, made it possible to gather additional information. In particular, they helped to scrutinise certain points identified in the literature review and to appreciate the opinions of those involved.
7. Finally, direct observations of some of the project's achievements, particularly at the level of APFS, helped to better understand and appreciate the level of stakeholder involvement and ownership.

1.3 Limitations

8. The limitations of the final evaluation are related to the following two factors:
- i. Increasing insecurity in the project intervention area: the movement of all development stakeholders is very limited in the two project intervention districts of Banamba and Niono. A large proportion of these areas (over 80 percent of villages) is controlled by Islamist groups hostile to any presence of the State, United Nations organisations and other development stakeholders. The evaluation team nevertheless managed to visit three APFS in Banamba and two in Niono.
 - ii. Difficult access to the sites due to the very poor state of the roads to the various villages in the project intervention area.

⁴ See Annex 4 for the full list of APFS, with ratings on accessibility and safety. At the time of the evaluation, access for the field visit was as follows: 39 APFS villages in the Kita district, 18 of which are not accessible for security reasons; 44 in the Banamba district, 8 of which are unsafe; 38 APFS in the Niono district, 15 of which are unsafe or difficult to access in winter.

2. Background and context of the project

2.1 Context and challenges faced by the project

9. Mali is a landlocked country in West Africa, covering a surface area of 1 240 192 square kilometres (km²). Mali's topography is characterised by vast plateaus, sandy plains and the alluvial plain of the inner delta of the Niger River in the centre of the country, where most agricultural activity is concentrated.
10. Climate change particularly affects the agricultural sector in semi-arid and arid areas, due to a general reduction in the areas devoted to agriculture and a longer growing and production period for crops. The livestock sector will also be affected by the decrease in natural fodder and pasture, which will have an impact on animal health, which is also exposed to the emergence or re-emergence of new diseases due to climate change. Finally, it is likely that the consequence of increased resource scarcity will lead to potential conflicts between farmers and pastoralists over water and land management.
11. The partners of this project thus sought to provide a sustainable response to the climate threats and risks that weigh on the development of the communities and populations of the Banamba, Kita and Niono districts.
12. The project has adopted an APFS approach aimed at overcoming challenges to climate change resilience in the agro-pastoral sector. These challenges fall into the following two categories:
 - i. The difficulty of changing current practices in the use and management of agro-pastoral resources. These practices must necessarily evolve in order to reduce vulnerability to climate change. Changing these practices, although it may be considered a modest response in terms of adaptation, requires in any case investments and the implementation of targeted incentive tools in favour of agro-pastoral resource users. Activities to overcome this challenge – including those aimed at changing the most common practices that are critical to the conservation of agro-pastoral resources – include the following:
 - the practice of shifting cultivation and transhumant pastoralism;
 - the adoption of resilient agro-pastoral techniques, notably through the APFS;
 - the development of practical agro-pastoral tools for adaptive climate change management;
 - the gradual shift from predominant agro-pastoral resource use practices in the project area towards more CC-resilient practices, by promoting close coordination among the various stakeholders and ensuring that the proposed changes produce tangible benefits to resource users.
 - ii. The difficulty in adopting the APFS approach to promote adaptive practices, as the issue of climate change is still poorly understood in the target communities. Indeed, knowledge and understanding of the impacts of climate change, the associated criticalities and adequate responses still appear to be very limited at the level of local communities and stakeholders. Thus, climate resilience is still insufficiently taken into account in local resource use planning and policy development. Activities to overcome this challenge include:

- good knowledge and understanding of climate change impacts, criticalities for each resource and adequate responses;
- the assessment, on the basis of a few key parameters, of the climate change impacts and trends identified, including rising temperatures, reduced water availability and surface water;
- the urgent drafting of new policies (drafting is a very long process and the resulting policies apply for five to ten years);
- integration of climate change risk, vulnerability and resilience into sectoral policies;
- good knowledge of climate modelling, particularly analytical models that offer a practical application by combining climate predictions with landscape, resource and land-use characteristics as well as socio-economic data specific to the context of Mali.

2.2 Project description

13. Mali is currently facing many challenges resulting from climate change, which is significantly affecting all communities in the country and agricultural producers in particular. The most affected sectors are agriculture and livestock. Recurrent extreme climatic events, such as droughts, floods and strong winds, have affected crop and livestock productivity – altering transhumance routes; contributing to the drying up of water points, reduced and deteriorated vegetation cover; and damaging pastures. Farmers and pastoralists are particularly vulnerable to climate change because of their lack of knowledge and/or adaptive capacity.
14. The project "Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the framework of Mali's Sustainable Land Management Approach, GCP/MLI/038/LDF" was developed to address these challenges.
15. It aims at "boosting the capacity of Mali's agro-pastoral activities to cope with climate change by integrating climate change adaptation (CCA) strategies, practices and technologies into ongoing agricultural and agro-pastoral development initiatives within the framework of the national Sustainable Land Management (SLM) approach and its related programme (the Strategic Investment Framework for Sustainable Land Management, SIF-SLM, 2010)".
16. The various components of the project are:
 - Component 1:** Develop CCA strategies, plans and tools for agricultural and agro-pastoral farming systems in vulnerable areas. This component has one effect and three outputs.
 - Component 2:** Capacity building of small agro-pastoralists to enable them to adopt CCA technologies and good practices. This component has three effects and five outputs.
 - Component 3:** Systematic inclusion of CCA in development policies and programmes related to agriculture and livestock. This component has one effect and three outputs.
 - Component 4:** Project monitoring and dissemination of outcomes. This component has one effect and three outputs.

17. The project was implemented in a period of four years with a budget of USD 16 419 986 – of which USD 2 172 727 came from the GEF Least Developed Countries Fund (LDCF) with co-financing from the Environment and Sustainable Development Agency (ESDA) of USD 11 315 000 (in kind and cash), FAO of USD 2 343 959 and the Ministry of Rural Development (MDR) of USD 588 300.
18. ESDA is FAO's implementing partner for this project. It represents the government counterpart and is responsible for coordinating project activities and any activities to support the implementation or integration of climate change into national or local policies. The project also collaborates with the Ministry of Rural Development, the Mali Meteorological Agency and the Institute of Rural Economy (IER).
19. The project's activities involving experimentation with diversified approaches are carried out in three distinct regions, namely Kayes, Koulikoro and Ségou, and more specifically in the districts of Kita (Kayes region), Banamba (Koulikoro region) and Niono (Ségou region).
20. In these three intervention districts, the project will address the transhumance process as a whole – from pasture rehabilitation to animal health – while proposing to assist agro-pastoralists along transhumance routes following an ecosystem approach.
21. The project structure consists of:
 - i. A project Steering Committee (SC) including: (i) a representative of FAO; (ii) a representative of the Ministry of Rural Development; (iii) a representative of the National Directorate of Agriculture; (iv) a representative of the National Directorate of Animal Production and Industries; (v) a representative of Mali Meteorological Agency; (vi) a representative of the Institute of Rural Economy (IER); (vii) the governor of the Kayes region or their representative; (viii) the governor of the Koulikoro region or their representative; (ix) the governor of the Ségou region or their representative; (x) the prefect of the Kita district; (xi) the prefect of the Banamba district; (xii) the prefect of the Niono district. (Xiii) the president of council of the Banamba district, (xiv) the president of council of the Kita district, (xv) the president of council of the Niono district, (xvi) a representative of CPS SEUEDE, (xvii) a representative of ALPHALOG, (xviii) a representative of ACF, (xix) a representative of OPA-FEBEVIM, (xx) a representative of SYNELPROV, (xxi) a representative of CAB DEMESO, (xxii) a representative of AMAPROS, (xxiii) a representative of STOP SAHEL. The duties of this committee are as follows: (i) ensure monitoring and technical quality assurance of the products; (ii) strengthen the project's linkages with other ongoing programmes and projects relevant to the project; (iii) ensure timely and effective co-financing; (iv) ensure the sustainability of key project outcomes, including scaling-up and replication; (v) ensure effective coordination of government partners' work under this project. The project SC shall review and approve the annual work plan as well as any significant modification to the original plans.
 - ii. A coordination unit including: (i) a national project coordinator; (ii) a monitoring and evaluation expert; (iii) temporary staff who are specialised experts in different fields; (iv) three advisers for local activities, whose duty is to ensure coordination with local government agencies and all similar activities taking place in the country; (v) two drivers.

22. The agro-pastoral field schools are an adaptation of the Farmer Field Schools (FFS) approach developed by FAO in the 1980s and have been introduced by FAO through this project in Mali since 2015. APFS offer an innovative extension approach to breeders and agro-pastoralists based on practice and learning that focuses on the problems diagnosed within agricultural production systems.
23. The approach of collecting information at the lowest level for APFS is identical to that of the FFS. It provides for the support of producers to prevent and/or cope with climate change consequences/effects by focusing on interventions relating to the sustainable intensification of production systems and the development of resilience.
24. Like the FFS, APFS is a participatory extension tool based on problem-solving for agro-pastoralists. The three stages or phases of the process development must be strictly respected. The preparatory phase includes: participatory diagnosis within the village community, survey and identification of constraints, selection of participants, training of facilitators, development of the training programme, planning, etc. The implementation phase includes experimentation based on the strategic hypotheses selected and monitoring-evaluation. The post-implementation phase allows for a more comprehensive evaluation of effects/outcomes. However, the implementation cycle of an APFS is often longer than that of an FFS (12 to 18 months on average) due to the inclusion of at least two seasons (dry and wet) of the year in the production cycle. The APFS adapts to all animal production systems.

3. Evaluation criteria and main findings

3.1 Relevance

3.1.1 Overall relevance

25. Despite the implementation of the following programmes – National Adaptation Programme of Action (NAPA, Ministry of Equipment and Transport, 2007); the National Climate Change Policy (NCCP, Ministry of Environment and Sanitation, 2011); the National Climate Change Strategy (NCCS, Ministry of Environment and Sanitation, 2011); the Climate Change Action Plan 2010-2017 (CCAP, Ministry of Environment and Sanitation); the Strategic Investment Framework for Sustainable Land Management (SIF-SLM, 2010); the Framework for a Climate-Resilient Green Economy (CRGE, Ministry of Environment and Sanitation, 2011); and CCA projects and programs – the challenges related in particular to the high vulnerability of the agro-pastoral sector to climate change, are still immense.
26. Overall, these challenges are: (i) the expansion of cultivated areas at the expense of pastureland; (ii) the severe deterioration of grazing land; (iii) limited access to natural resources; (iv) lack of fodder storage capacity and lack of access to alternative animal feed; (v) limited access to markets and loans; (vi) lack of infrastructure; (vii) limited access to veterinary services and inputs; (viii) lack of agro-meteorological information; (ix) increasing conflicts between pastoralists and farmers, etc.

Finding 1. The project strategy is based on a participatory approach that takes into account the challenges of agro-pastoralism in a context of ecosystem transformation as a result of climate change. It aims at testing and promoting a set of good practices in a learning space that strengthens the resilience of agro-pastoralists to climate change. This approach (APFS) differs from the previous FFS approach in that it focuses on a strong integration between agriculture and livestock, with most of the targeted stakeholders being both farmers and breeders. It therefore has a clear comparative advantage.

27. The various project interventions contribute to improving the capacity of agro-pastoralism to cope with climate change, by promoting a strong integration of CCA strategies, practices and technologies in development initiatives at the decentralised level.
28. The intervention logic of the project is based on a certain number of hypotheses defined at the time of its formulation, such as: the involvement of national institutions after the completion of the project, the correct projection of future climate change, the adhesion of local communities to the proposed technologies, the constant interest in APFS, the maintenance of the Pastoral Charter as the main document for pastoralism development and management, etc.
29. The risks identified in the project document are relevant and directly or indirectly consistent with the hypotheses defined. The project assigned a rating to each of the identified risks on a three-level scale (low, medium, high). These ratings and the strategies identified to reduce these risks are in most cases relevant. The project's risk monitoring has greatly facilitated the implementation of activities.
30. Furthermore, it should be noted that small-scale mining (a risk that was not taken into account in the project design), particularly in the Kita district bordering Keniéba district, is

increasing to the detriment of all development initiatives in mining areas. The establishment of APFS has, however, promoted the dissemination of know-how and livelihood opportunities and in some cases diverted young people and women away from mining areas, as in the case of two young people we met who converted to (improved traditional) beekeeping and cuniculture.

31. The project formulation strategy followed a participatory and consultative approach at several levels, both within the implementation group and among the stakeholders interested in the project. It involved all stakeholders with a view, in particular, to promoting the new approach of APFS in order to reduce the vulnerability of different local communities to climate change risks and to strengthen their resilience in general. For example, consultations were organised in the three regions and in the target areas; the project outcomes are based on information and tools identified through participatory approach in project components 1 and 2; and participatory tools such as KoboCollect were used. This strategy is relevant in a context where beneficiary populations depend on agro-pastoral resources for their livelihoods.
32. Stakeholders identified during the project design were also involved in its implementation. The stakeholder involvement strategy – notably through the broadly representative Steering Committee – provides a framework to guide the interaction between implementing partners and key stakeholders, especially beneficiaries, and to validate the progress of the project.
33. In its design, the project has thus included activities and mechanisms to ensure the effective and continuous involvement of stakeholders in implementation: (i) the project's inception phase helped to sensitise the various stakeholders to the challenges of implementation; (ii) the Steering Committee ensured a broad representation of all stakeholders during project implementation; (iii) capacity building of beneficiary agro-pastoralists through APFS and at different levels helped to ensure the sustainability of project activities.
34. **Overall, the formulation process was satisfactory.** In order to foster national ownership of the project, the project design favoured a participatory approach in order to meet the requirements of national, FAO and GEF priorities. During the preparation phase, meetings were held with stakeholders to understand their interests and define their roles and responsibilities in the implementation of the project. In addition, the project planned a national kick-off workshop to sensitise stakeholders as well as field visits to supervise activities.
35. The project's theory of change was not developed at the project design stage and no recommendations were made to this effect during the mid-term review. However, the intervention logic and causal links of the project are clear: if the conditions (technical, institutional, organisational, strategic, etc.) defined by the project are met, making possible an adaptation strategy based on learning spaces, and if the stakeholders have the capacity (technical and/or financial) to adopt the proposed approach, including that of APFS, the vulnerability of local communities in the project intervention area to climate change risks will be reduced and their resilience will be enhanced in general.

3.1.2 Gender mainstreaming in the design phase

36. However, gender mainstreaming is insufficiently analysed in the project document in the sections dealing with the assessment and justification of the project feasibility. Indeed, the relevance analysis does not take into account women's vulnerability to climate change and its consequences on the project's resilience and adaptation activities. Furthermore, no reference is made to social discrimination and the unequal access of women pastoralists and agro-pastoralists to productive resources, which limit their equitable participation in achieving the objectives of APFS. Furthermore, the project document does not focus on social issues, particularly on the behaviours, natural resource exploitation practices, achievements and constraints of women and men agro-pastoralists and breeders in the areas concerned, in order to cope with the effects of climate change. Gender analysis of sedentary, semi-transhumant and transhumant farming systems would make it possible to identify different models of socio-organisational relations. It will help in distinguishing between those that offer favourable or unfavourable conditions of access for women agro-pastoralists and breeders to productive resources, with emphasis on climate change adaptation.
37. The initial situation proposed in the project document did not consider gender mainstreaming, whereas it would have helped to identify the achievements and limitations of the various CCA national policies, programmes and projects in Mali to be considered in the recommendations of GCP/MLI/038/LDF. This loophole is also visible in the presentation of CCA challenges in the pastoral, agricultural and agro-pastoral sectors. The gender analysis of the local convention drafting process appears for example as an opportunity not only to boost the participation of women and men in the management of conflicts related to the management of natural resources, but above all, to create an added value for CCA in the project intervention areas. The lack of gender mainstreaming in the institutional challenges presented in the project document, results in a loss of income for the project; thus, the project cannot therefore integrate practical gender mainstreaming actions and measures with the responsible structures and partners.

Finding 2. The lack of a specific analysis of the socio-economic, socio-environmental and the gender realities in the three districts of the project intervention area, has resulted in a global planning model that is not gender-specific and often inadequate to the practical and strategic needs of the project's female and male beneficiaries. Indeed, the analysis of the challenges does not take into account the social and socio-economic characteristics of the intervention areas, whereas the three districts have different farming systems (traditional system in Banamba, industrial cotton production in Kita and irrigated rice in Niono).

38. The specificity of production systems inevitably leads to socio-organisational differentiation of production and patterns of social relations between women and men as concerns: division of labour, access to and control of productive resources including land, agricultural inputs, livestock ownership, labour, education, extension and financial services.

3.1.3 Relevance of design and targets

39. The project document sets out a Logical Framework that clearly defines the objectives and expected outcomes and identifies indicators for each outcome. Elements for verifying the achievement of the indicators are also specified.

40. Some project indicators related to the objectives pursued and the expected outcomes are relevant and SMART, i.e. specific, measurable, achievable, relevant and timely. Some targets were achievable. Those that were not achievable have been reviewed following the recommendations of the mid-term evaluation of the project, for example:
- i. the number of people trained at the level of targeted institutions (ESDAD, MDR, local government agents, breeders, agents of customary organisations), including 50 percent women, in the use of SHARP (Holistic Assessment of Climate Resilience of Farmers and Pastoralists) or any other tool (KoboCollect) to support implementation (Output 1. 1.1): the design had foreseen the training of 45 people on the SHARP tool, which was not adapted and the data once collected were not accessible by the project team. This finding, in turn, favoured the KoboCollect tool.
 - ii. Number of APFS established that integrate CCA and sustainable land use principles into their programmes (Output 2.1.2): The design provided for 150 APFS, an overly ambitious objective that was difficult to achieve given certain socio-cultural realities in the intervention area and the APFS implementation modalities. The target was therefore reduced to 121 APFS, with women's representation reaching almost 50 percent.
41. With regard to the increase of the number of wells and boreholes along the transhumance routes provided for in the project document (Output 2.3.1), the project has identified the need for access to drinking water in certain villages in the Banamba, Kita and Niono districts. Due to the lack of co-financing, the planned activities were not carried out and their implementation was not recommended by the mid-term evaluation mission.

Finding 3. The project had included pilot investments (wells, boreholes and ponds along transhumance routes to improve access to water for herds) to increase ecosystem resilience and contribute to building the capacity of agro-pastoralists to adapt to climate change. Due to the lack of co-financing, these investments (which generally have high implementation costs) could not be made, although they were included in the project's programme.

42. Furthermore, the evaluation team notes the clear desire for active participation by women in certain components (1 and 2) which propose indicators in the form of turnout rates in activities. However, this desire is not visible in the analysis of the challenges outlined in the project document which could justify the planned activities in question. The other components of the project do not opt for a logic of gender mainstreaming either in the outputs or in the indicators, a sign of a certain inconsistency in planning.

Finding 4. Due to the lack of specific gender-related objectives in the project document, particularly with regard to transforming gender-related social relations, the project was oriented towards reducing discrimination related to social inequalities that prevent women from benefiting equitably from the resources and services proposed by the project in favour of CCA. Finally, the risk matrix does not present any hypothesis of risks related to the achievement of the planned turnout of women. These shortcomings are a limitation to planning.

43. The formulation of the project document, however, has overall resulted in a consistent draft. Most of the project's outputs are relevant to the context. On the basis of these findings, the relevance of the project appears to be highly satisfactory (HS).

3.2 Effectiveness

Finding 5. The project's objective "to boost the capacity of Mali's agro-pastoral activities to cope with climate by integrating CCA strategies, practices and technologies into ongoing agricultural and agro-pastoral development initiatives within the framework of the national Sustainable Land Management (SLM) approach and its programme (SIF-SLM)", especially through the implementation of a range of activities related to the different components, has been achieved very satisfactorily.

44. The project's responses since 2015 in terms of improving agro-pastoralism's capacity to respond to climate change by systematically integrating CCA strategies, practices and technologies into ongoing development initiatives in agriculture and agro-pastoralism, have been broadly focused on:
- i. building institutions and stakeholders' (ESDA, MDR, local government agents, breeders, agents of customary organisations) capacities on the use of the KoboCollect tool (31 people trained including five women) and the evaluation of 311 APFS members (producers) through this tool;
 - ii. developing a multi-year work plan and the strategy to disseminate the APFS approach through a participatory process in the project intervention area;
 - iii. training 107 producers and technical service supervisors in data collection, analysis and in the use of weather forecasts (101 producers trained, including three women and six supervisors);
 - iv. facilitating access to and use of meteorological data by 2 100 agro-pastoralists (30 percent of whom are women);
 - v. popularising the Pastoral Charter and its provisions at the local level through APFS and the radio (50 radio broadcasts and 580 messages to APFS⁵);
 - vi. supporting the negotiation, drafting, signature and dissemination of five management agreements on natural and agro-pastoral resources;
 - vii. constructing 66 km of animal corridors;
 - viii. training APFS facilitators (260 facilitators trained, 50 of whom are women);
 - ix. training 17 APFS master trainers, including two women;
 - x. setting up of 121 APFS integrating CCA and sustainable land use principles into their programs;
 - xi. testing, disseminating and adopting through APFS five good adaptation practices and technologies for (including bushfire prevention techniques);
 - xii. supporting livestock breeders and farmers for the dissemination of pilot actions on adaptation strategies;
 - xiii. distributing agroforestry seeds and seedlings to increase productivity;
 - xiv. revising Economic, Social and Cultural Development Plans (ESDPs) incorporating adaptation actions;

⁵ Given the low level of availability of women in training (see below), the radio would be a good way to improve their access to technical information and CCA practices.

- xv. training beneficiaries in the "*climate proofing*" tool;
- xvi. carrying out the planned monitoring and evaluation activities, including: the establishment of baselines for all project indicators, annual updates of indicators, mid-term and final evaluation of the project and dissemination of lessons learned;
- xvii. publication by the project of good practices and lessons learned.

3.2.1 Execution level per component

3.2.1.1 Level of implementation of Component 1 "Develop climate change adaptation (CCA) strategies, plans and tools for agricultural and agro-pastoral farming systems in vulnerable areas"

Effect 1.1: The institutional capacities of ESDA, Ministry of Rural Development (MDR) structures, local communities, pastoralists, farmers and customary organisations, are strengthened to minimise the exposure of agricultural and agro-pastoral production systems in vulnerable areas to climate variability and risks. To this effect, it was planned to strengthen the adaptive capacities of five institutions (ESDA, MDR, communities, non-governmental organisations, civil society) so that they can minimise exposure to climate variability. Through its participatory and consultative approach, the project was able to strengthen the capacities of eight institutions (AEDD, MDR, prefectures, national assembly, district councils, municipalities, non-governmental organisations and civil society) and organise four workshops (one national and three regional) attended by 196 people, including 16 women who participated in the workshops to launch and present the APFS concept.

- i. **Output 1.1.1: The approach and concept of APFS are presented and promoted to ESDA agents, MDR structures, local communities, breeders, farmers and customary organisations with the aim of contributing to an intensification of the adaptive capacities of agricultural and agro-pastoral production systems in vulnerable municipalities in the regions of Kayes, Koulikoro and Ségou.** In the project design, it was planned to train 45 people in the KoboCollect tool, an overly ambitious and difficult to achieve objective. The target was therefore revised and reduced to 30 people, including five women. The participants were from various institutions (Ministry of Environment, Planning and Statistics Unit of the Ministry of Environment, Planning and Statistics Unit of the Ministry of Agriculture, National Directorate of Animal Production and Industries, National Directorate of Agriculture, Local Service of Animal Production and Industries of the three districts (Banamba, Kita and Niono), Local Service of Agriculture of the three districts (Banamba, Kita and Niono), Institute of Rural Economy as well as the APFS facilitators in the three districts and the local activity advisors of the Banamba, Kita and Niono districts. Surveys were carried out in 31 APFS villages (from 15 municipalities in the project intervention area). These helped in apprehending, identifying and evaluating the capacities of 311 producers (out of a target of at least 300 APFS members), including 150 women (Kita: five municipalities were covered with 10 villages and 102 persons surveyed, including 58 women, i.e. more than half the participants; Banamba: four municipalities with 11 villages and 107 persons surveyed, including 41 women; Niono: six municipalities with 10 villages and 102 persons surveyed, including 51 women). Finally, a multi-year work plan determining the expected outcomes over the duration of the project was prepared and approved at the first meeting of the Steering Committee in 2015. Two series of workshops were organised, respectively on 6 March 2019 under the chair of the Cabinet of the Ministry of Agriculture and in April 2019 under the chair of the National Directorate of Agriculture, and offered to more than 30 stakeholders. These two workshops

noted the inadequacy of very old texts on the creation of the National Directorate of Agriculture and therefore recommended that they be updated to take into account the FFS/APFS/JFFLS approach (particularly in the National Agricultural Advisory System, NAAS). The launching of this reflection process through Decision No. 2109-OO606/MA-SG facilitated the design of the project.

- ii. **Output 1.1.2: Climate information and meteorological data on climate variability and change are made available and used in targeted vulnerable regions and the capacities of institutional stakeholders are strengthened to better analyse and disseminate these data.** Significant progress is being made: (i) the training of 27 persons (six persons in Banamba, eight in Kita and 13 in Niono) (the planned number was 25); (ii) the training of 107 producers and technical service supervisors (including three women) in the use of meteorological equipment. In order to facilitate the exchange of information between APFS and the Mali Meteorological agency: (i) 101 telephones with a specific programme; (ii) 200 peasant rain gauges and other accessories were distributed; (iii) access to meteorological data was given to 2,250 agro-pastoralists, including 738 women. All these facilitated the exchange of information between the focal points of the networks and Mali Meteorological Agency.
- iii. **Output 1.1.3: The Pastoral Charter and its provisions are disseminated and implemented. Conventions are established between local agro-pastoralists in order to reduce disputes arising from climate variability and transhumance routes.** Difficulties related to the management of natural resources in general and agro-pastoral resources in particular were highlighted. Some conflicts between stakeholders (farmers and breeders) still persist due to poorly defined management rules. Concerted action through workshops led to the drafting of five local conventions, whereas only two pilot actions were planned.

3.2.1.2 Level of implementation of Component 2 “Capacity building of small agro-pastoralists to enable them adopt CCA technologies and good practices”

Effect 2.1: Agro-pastoralists (at least 30 percent of whom are women) have strengthened their capacity to adopt CCA technologies and practices in agro-pastoral systems. 3 829 agro-pastoralists, including 1 800 women (the planned target of 3 000 agro-pastoralists was exceeded) have strengthened their capacities through the implementation of learning activities in the APFS for 22 months on fattening (cattle and small ruminants), poultry and agriculture and also through other specific training courses on: integrated control of the Fall Armyworm, marketing of agricultural products, market gardening, income-generating activities, exchange visits and experience sharing between APFS, management of village savings and loan associations, etc.).

Finding 6. The main weakness noted in this outcome concerns the limited capacities of the endogenous structures that manage the Village Savings and Loan Associations.

- i. **Output 2.1.1: At least 200 APFS facilitators are trained (at least 30 percent of whom are women) through agreements with livestock breeders' associations and agro-pastoralists.** Under this output, 260 facilitators were trained, including 50 women (the planned target of 200 facilitators was exceeded). In addition, 17 APFS master trainers were trained (the target was 10), including two persons from DNPIA, two persons from DNA, three persons from the regional directorates of animal production and industries (Kayes, Koulikoro, Ségou), three persons from Kita, three persons from Banamba and four persons from Niono (including two women out of all the trainers trained). Educational materials were distributed to participants in electronic and printed form.

- ii. **Output 2.1.2: 101 APFS are established and integrate CCA and sustainable land use principles into their program, with emphasis on best practices, ecosystem resilience and integrated agricultural and pastoral production systems.** Under this output, 121 APFS (the target was 101 APFS) integrating CCA and sustainable land use principles into their programmes have been established (44 APFS in 43 villages within 7 municipalities in the Banamba district, 39 APFS in 35 villages within 16 municipalities in the Kita district and 38 APFS in 37 villages within 6 municipalities in the Niono district). Integrated and complementary actions have also been carried out: inputs have been provided to APFS in the framework of an experiment (Washashe cockerels/chickens, cattle feed, poultry feed, medicines, weighing and feeding equipment, sheep heads). Within the framework of the resilience funds, 42 associations (VSLAs) have been set up out of the 30 planned (10 in Banamba, 13 in Kita and 19 in Niono). The VSLAs mobilised 1 187 members, 914 of whom were women, i.e. 77 percent of members. The amounts collected in less than three months from members' subscriptions amounted to CFAF 8 369 520. These amounts are used in the form of loans repayable with interest, solidarity funds or for the purchase of seeds for the group.
- iii. **Output 2.1.3: Adaptation practices and technologies are disseminated to the APFS created by the project.** Under this product, five good practices were adopted, compared to the target of two. In the APFS, 27 good practices have been identified, including eight in Banamba, nine in Kita and 10 in Niono, and several practices are being disseminated and gradually adopted by the beneficiaries, mainly: the production and use of organic manure; the use of early seeds adapted for crops; dry, flat and ridge sowing; crop combination and the promotion of short-cycle animal farming; but also the construction of improved poultry houses; poultry farming; the use and sharing of agro-meteorological information. Finally, 10 inseminators were renovated and 150 cows were inseminated with exotic breeds (with a success rate of 35 percent).

Effect 2.2: The livelihoods of the targeted agro-pastoralists have improved.

- i. **Output 2.2.1: At least 2 500 livestock breeders and farmers (at least 30 percent of whom are women) are involved in implementing local integrated adaptation strategies.** Under this outcome, 3 829 agro-pastoralists (the planned target of 2 500 was far exceeded), including 1 797 women, participated in the pilot actions implemented on local integrated adaptation strategies. These agro-pastoralists would then be able to disseminate these strategies to their neighbours.

Finding 7. The evaluation team notes that the different measures for implementing the various local adaptation strategies have not been taken into account (local adaptation strategies include: stony barriers, mounds, half-moon, watershed techniques, etc.), which makes it impossible to carry out a comprehensive multifactorial analysis of experiences and to draw lessons learned. Such an analysis would make it possible to better measure the contribution of good practices to climate change adaptation and to highlight the conditions for adoption and sustainability. Delays in the reception of animal corridors (Banamba and Kita) may also reduce the effectiveness of the project's actions over the time it takes to adopt the pastoral charter.

Effect 2.3: Agricultural/agro-pastoral productivity has increased in CCA pilot investment areas. According to the local agricultural services, progress in this area is 35 percent on average for dry cereals and 44.5 percent on average for market gardening (the 5 percent target has been far exceeded). The rate of increase in productivity averages 36 percent in Banamba and 39 percent in Kita for dry cereals (sorghum, millet, maize), according to the results of the evaluations carried

out at the APFS in Banamba and Kita in November 2018. It is 31.12 percent in Banamba (potato) and 57.89 percent for market gardening in Kita. In addition, 1 500 producers at the APFS level have benefited from seeds (3 000 kg) of fodder species, market gardening, cereals and plants, which are sufficiently resistant to drought and climatic hazards – including 1 000 kg of potato seeds and 2 000 kg of seeds of fodder species and cereals. In agroforestry, 14.25 ha of seedlings have been planted (five ha in Banamba, two ha in Kita, 7.25 ha in Niono with 1 510 plants of *Pterocarpus erinaceus*, *Acacia seyal* and *Azvelia africana*); 12 secure market gardening perimeters – including six in Banamba and six in Kita, and two electric bundling machines – have been supplied to APFS in Quinzambougou and Nango Sahel in the Niono district; two electric straw-choppers have been supplied to the APFS of Berela (Kita district) and Ouleny (Banamba district); ten electric incubators with a capacity of 60 eggs each, have been supplied to the APFS of the Niono district; and finally 20 sheep heads have been distributed to the various APFS for short-cycle animals' fattening activities.

Finding 8. The main weakness observed concerns the lack of consideration of agro-pastoral product processing and/or conservation, which not only increase productivity but also give more added value to the processed products.

- i. **Output 2.3.1: Four pilot investments on adaptation are supported to increase ecosystem resilience and contribute to building the capacity agro-pastoralists to adapt to climate change.** Under this output, 24 works were to be carried out, including nine wells/boreholes and 15 ponds (three wells and five district per district). But the project identified the need for access to drinking water in its intervention areas in the Banamba, Kita and Niono districts. In addition, 224 local herbaceous and woody species were identified. The identification studies focused on wild herbaceous forage species (84 species), cultivated forage species (21 species) and wild woody forage species (119 species). In addition, the bromatological value was determined in the laboratory: chemical composition for each type of the five herbaceous and woody forage species most frequently cited by the populations of the Banamba, Kita and Niono districts.

3.2.1.3 Level of implementation of Component 2 “Systematic inclusion of CCA in development policies and programmes related to agriculture and livestock”

Effect 3.1: Systematic integration of APFS-based CCA into investment and integrated rural development policies. Under this outcome, seven Economic, Social and Cultural Development Plans (ESCDPs), out of a target of three, were revised for some municipalities of Banamba and Niono (the urban municipality of Niono, the rural municipalities of Toubacoro, Banamba, Benkadi, Duguwolowula, Kiban and Sébété) in order to take climate change issues into account in their planning. A Five-Year Pastoral Development Plan (PQAP) was also revised as planned.

- i. **Output 3.1.1: Strengthening national cooperation frameworks that use APFS for better integration of CCA in agro-pastoral development.** 103 facilitators/trainers were trained on a target of 90 on the “*climate proofing*” forecasting tool: 17 trainers were trained on the “*climate proofing*” tool, 86 people including two women participated in three training/awareness sessions on sustainable land management, best practices, ecosystem resilience and integrated agro-pastoral production systems.
- ii. **Output 3.1.2: Applying the *climate proofing* tool at the local level through the Strategic Investment Framework for Sustainable Land Management (SIF-SLM).** The seven revised

ESCDPs on a target of three have applied the tool. The application of the tool has enabled the different municipalities to develop their ESCDPs taking into account climate change issues.

- iii. **Output 3.1.3: Revising the Five-Year Pastoral Development Plan (PQAP) to support the integration and systematic insertion of CCA in the agro-pastoral sector.** The five-year plan has been revised. The evaluation of the first phase of the Five-Year Pastoral Development Programme (2008-2012) was carried out as well as the drafting of the new PQAP II for the period 2019-2023. The national validation workshop organised by the National Directorate of Animal Production and Industries (DNPIA) was held on 7 January 2019, with a strong participation of different national and local stakeholders (more than 50 participants).

3.2.1.4 Level of implementation of Component 4 "Project monitoring and dissemination of outcomes"

Effect 4.1: Implementation of the project on the basis of results-based management and application of lessons learned from the project in future operations. Under this outcome, the monitoring and evaluation system was implemented as planned. A performance framework for monitoring indicators has been put in place and updated annually. All indicators have been defined, including their frequency of collection and level of responsibility. Data are collected and processed. Reports (monthly report, PPR and PIR), minutes, minutes of meetings and technical notes are prepared and disseminated regularly. A geographical information/mapping system has been put in place to collect data, design and disseminate maps on project achievements. A computerised data collection system has been set up (KoboCollect) and managed. Terms of reference for evaluations have been developed and evaluations have been carried out. Lessons learned are disseminated through a number of communication channels, including: community radio, open days, exchange trips/visits, the creation of a WhatsApp group, etc. Debriefing workshops on the implementation of the project are conducted at the level of each district.

Finding 10. Activities related to this outcome have to be consolidated through the creation and dissemination of proven project success stories and small-scale programmes on project achievements.

- i. **Output 4.1.1: A monitoring and evaluation system has been established, including systematic data collection, analysis and compilation, as well as operational implementation:** Five performance frameworks defining responsibilities and the frequency of data collection and compilation to monitor key project indicators, are operational (2015, 2016, 2017, 2018, 2019). Nine PPRs have been produced (out of a target of seven) (2015, 2016, 2017, 2018, 2019), as well as five PIR reports (out of a target of four) (2015-2019) and a technical project closure report.
- ii. **Output 4.1.2: Mid-term and final evaluations have been implemented.** The mid-term evaluation, consisting of an international consultant and a national consultant, helped to review the logical framework and redefine activities and indicators. The final evaluation team went on a field mission from 27 November to 8 December 2019 to meet producers and local stakeholders. Meetings with key stakeholders were also held in Bamako on 25-26 November and 12 December 2019 (see Annex 5).
- iii. **Output 4.1.3: Best practices and lessons learned from the project have been disseminated.** Five documents were prepared and 11 open days were organised with the participation of 485 people including 208 women (participants included members of the host

APFS, some invited APFS members, facilitators, supervisors, network managers, Office du Niger Radio). Further progress was noted in terms of: (i) the document on the evaluation of the adoption level of five good practices at the level of APFS in the project intervention area, in April 2018; (ii) the inventory of good practices identified in the three project intervention districts, in May 2018; (iii) the adaptation strategy of project stakeholders to face climate change, in May 2018; (iv) the document on endogenous knowledge in the project intervention area, in May 2018; (v) the document on the project's gender approach, in June 2018. A very active WhatsApp group, with more than 50 members, has been created since 25 April 2018. This platform helps in sharing field information, innovations and other topics of common interest between FFS and APFS facilitators, producers, the project team and other resource persons. Thanks to the rain gauges distributed by the project, rainfall measured at the local level is reported through the WhatsApp group. In addition, three networks of facilitators are set up (Banamba, Kita, Niono), 115 geo-referenced intervention villages and eight maps produced and disseminated.

3.2.2 Progress towards achieving impacts

45. Progress towards achieving the impacts is observed at different levels: (i) agro-pastoral knowledge; (ii) productivity and yields; (iii) social cohesion and conflict management; (iv) women's empowerment; (v) environmental and social safeguards, etc.

3.2.2.1 Impacts on agro-pastoral knowledge

46. APFS are learning spaces for good practices, as they globally facilitate an integrated understanding of the ecosystem and agro-pastoral approach. It is based on the exchange of experiences between producers/agro-pastoralists and facilitators (made up of technical service management staff) throughout the cropping cycle, enabling them to improve their knowledge and management of agro-pastoral resources increasingly affected by the consequences of climate change.
47. Agro-pastoralists in the project intervention area have acquired knowledge within APFS through learning activities (see Figure 1). They also participated in exchange and experience sharing visits to some APFS and to Satinè bougou (a learning space outside the project intervention area).

Figure 1: Learning space in an agro-pastoral field school (APFS)



Photo: Ibrahim Nienta

3.2.2.2 Impacts on productivity and yields

48. The adoption and respect of these good agro-pastoral practices considerably improves the productivity and yields of animal and plant speculation subject to the consequences of climate change in the project intervention area, as most of the farmers and breeders interviewed testify.
49. Farmers and pastoralists say that the project “*showed them how to catch fish in the water*”. In other words, this project, unlike others, taught them good practices for coping with the effects of climate change and has had a significant impact on their livelihoods and means of subsistence by building their resilience.
50. This improvement in productivity and yields, which is not yet measurable but certain, not only leads to an improvement in the income of farmers and pastoralists but also helps to secure different types of production, as in Niono and Kita villages (figures 2, 3, 4 and 5):

Figure 2: Beneficiary producers of APFS in Nango Sahel village (Niono district)



Photo: Ibrahim Nienta

Figure 3: Beneficiary producers of APFS in Nango Sahel village (Niono district)



Photo: Ibrahim Nienta

Figure 4: A beneficiary of good practices (sheep fattening with formula feed - Kobri village)



Photo: Ibrahim Nienta

Figure 5: A beneficiary poultry farmer in Kobri village



Photo: Ibrahim Nienta

51. At the pastoral and poultry level, good animal and poultry feeding practices have contributed considerably to reducing the fattening time for animals and the genetic improvement of village poultry (more than 40 percent of local poultry in the intervention area is cross-bred, notably through the introduction of roosters and broiler hens).

3.2.2.3 Impact on social cohesion and conflict management

52. The setting up of APFS has fostered regrouping in all the villages targeted by the project. In most villages, conflicts between farmers and breeders related to the management of agro-pastoral resources are addressed by APFS without reaching an ultimate resolution in all cases. Statistics on the number of conflicts addressed by APFS are not available, but the agro-pastoralist communities we met (especially in the Banamba and Niono villages) confirm the involvement of APFS in conflicts between farmers and breeders. In addition, local conventions on the management of certain resources have been drawn up and signed.

3.2.2.4 Impact on women's empowerment

53. The project provided women with access to innovative CCA practices that improved their income: for example, VSLAs enabled a significant mobilisation of credit funds to finance development activities for women and men in APFS. Bio-pesticides and compost appear to be good responses to some practical and strategic needs of women agro-pastoralists. Indeed they increase production while avoiding many of the risks associated with the use of chemical fertilisers and pesticides for pregnant women and children.
54. The project did not make specific investments for women. The production of fodder, bio-pesticides and compost have been additional activities weighing on women without improving their production conditions, including their access to agricultural equipment. The increased burden of their tasks has not been compensated for by the lightening of their household responsibilities.
55. The fallouts of women's interventions in CCA practices aimed at creating added value to reduce the effects of climate change, are still very fragile due to investments that are not consistent with the project objectives. Market gardening perimeters delimited by wooden and thorn fences that do not provide access to water for production, are frequent examples of this inconsistency in the field. Moreover, certain criticalities, such as the lack of population in Neem and the difficult access to water on certain sites, represent limitations that make these activities fragile and unsustainable after project completion.

3.2.2.5 Impact on environmental and social safeguards

56. The project is classified in category B (projects whose negative impacts on the environment and populations are less severe than those of category A projects. These impacts are limited and rarely irreversible) pursuant to Decree No. 2018-0991/P-RM of 31 December 2018. The actions undertaken under the project have an overall positive impact on the ecosystems of the Banamba, Kita and Niono districts since they divert communities from bad practices, as it can be seen throughout the intervention area.
57. In addition, the project integrates a strong institutional and community participation dimension in its capacity building activities. In addition, the project supports present and future initiatives while promoting good practices and achieving cumulative positive impacts. For example, the project has actively participated in the regional network of sister

projects (in Burkina Faso, Niger and Senegal); at the same time, the project's good practices continue to serve as a source of inspiration for other projects in Mali, such as the GIZ project "Supporting the strengthening of livestock and pastoral economy in the Koulikoro Region". Finally, the project focuses on the dissemination of technologies and techniques for the integrated management of agro-pastoral resources with high added value.

3.2.2.6 Impact on other aspects

58. Project interventions have also had impacts on the following other aspects:

- i. The creation of an inter-stakeholder WhatsApp group. This very dynamic WhatsApp group brings together more than fifty people – mainly farmers, pastoralists and facilitators/trainers (technical services) – who regularly exchange on good agro-pastoral practices. Interventions and/or concerns in a given situation (experience or difficulties encountered) are presented in the group where the facilitators, agents of the technical services, intervene to better guide farmers and pastoralists. More than thirty good practices and/or support and advice are dealt with in the group. When a breeder and/or farmer encounters a particular difficulty (for example, the evaluation team has followed the case of a parturition), it is mentioned to the group; facilitators and/or agro-pastoralists with experience in the field intervene and propose solutions. This is therefore a best practice that other projects can copy.
- ii. Developing a new project. The project and its success stories have served as a model for the development by the coordination team of the *Project Identification Form* (PIF) for a new project entitled "Resilient, productive and sustainable landscapes in the Kayes region of Mali", which is well advanced.

3.2.3 Outcome achievement: Success factors and challenges

3.2.3.1 Success factors

59. The success factors that can be identified are as follows:

- i. The participatory approach of the project focused entirely on adaptation based on APFS, integrated spaces for experimentation and learning for farmers and breeders in the project intervention area. The approach has contributed to empowering agro-pastoralists throughout the project intervention area.
- ii. The adaptability of the project team. The project was indeed faced with a number of institutional difficulties, including: the question of its anchoring or attachment to ESDA (with ESDA as executing agency) which caused a seven-month stalemate; the departure of the local activity advisor of Kita (December 2016); the departure of the first coordinator (first quarter 2017); the departure of the first expert in Participatory and Negotiated Territorial Development (May 2017) and that of the local activity advisor of Banamba (June 2019). These difficulties had an impact on progress towards the project's mid-term outcomes. The new coordinator took office in September-October 2017. He is a plant protection expert with proven experience in integrated production and pest management and he is familiar with the project for having contributed to its design. He has made good progress towards achieving outcomes through a participatory, results-oriented approach and the development of local skills, including 165 producer facilitators. From October 2017 until the final evaluation of the project, the outcomes obtained are indeed highly satisfactory. In many cases, the targets have been met or even exceeded, as in the case of APFS. While 101 APFS were

planned, the project implemented 121, including widespread training on the control of the Fall Armyworm, which is causing enormous damage to crops in the project area. The coordinator and his team also managed to obtain a one-year extension of the project (the project was initially scheduled to close on 31 December 2018), thus achieving goals that were not foreseen in the project document but which contribute to strengthening the project interventions. These additional achievements include, for example: the promotion of a unifying APFS approach (which had not been addressed by the international APFS expert); the introduction of market gardening in the villages of intervention through APFS (establishment of 12 market gardening perimeters); focusing most of the interventions on equipment (bundling machines, straw-choppers, rain gauge) and meteorological training with the Mali Meteorological agency on the use of rain gauges; and the creation of the WhatsApp group mentioned above.

3.2.3.2 Challenges that may hinder progress towards outcomes

60. The project team under the leadership of the new coordinator was able to contain the challenges and ensure the project's good progress thanks to its adaptability. However, some difficulties that could hinder the progress made still persist:
- i. Lack of staff stability within certain structures: the project has trained managers at the level of ministries and affiliated or deconcentrated structures (MAEDD, MDR, ESDA, prefectures) and NGOs. In addition, the networks of facilitators are in most cases made up of technicians from technical services (rural development) and NGOs. These stakeholders, trained in the APFS approach, are not in a stable situation and may, for the requirements of their respective structures, leave the project area to other areas, thus compromising the project's achievements.⁶
 - ii. The weakness of the capacities of the endogenous structures that manage the Village savings and loan associations (VSLAs): the project has facilitated the setup of 42 VSLAs practising financial intermediation. The staff of these VSLAs needs to be more structured and trained to promote effective and efficient governance of resources in order to ensure their sustainability.
 - iii. The lack of consideration of different measures for implementing local adaptation strategies that would allow for a more comprehensive multifactorial analysis of resilience and adaptation experiences and lessons learned. Such an analysis would make it possible to better measure the contribution of good practices to climate change adaptation and to highlight the conditions for adoption and sustainability.
 - iv. Delays in the reception of animal corridors (Banamba and Kita): work on these activities has been completed, but the infrastructure has not yet been delivered; this may reduce the effectiveness of the project's actions over the time it takes to adopt the pastoral charter.⁷
 - v. Lack of consideration of certain complementary aspects as: the processing and/or conservation techniques for agro-pastoral products, which should be based on practices already adopted to increase productivity and the added value of processed products. However, the needs are evident at the level of the beneficiaries (e.g. for the processing of dairy and animal products as well as the processing and conservation of

⁶ It should be noted that this situation is the same in other FFS/APFS projects. Sometimes these stakeholders help to disseminate the approach in their new locality (source: interview with an international FFS/APFS expert).

⁷ The infrastructure were finally delivered by mid-February 2020, after the evaluation.

market garden products). No activities have been planned in the project's approach to promote the processing of agro-pastoral products. At the same time, the evaluation acknowledges the resource limitations that the project has faced: the agro-pastoralists made priority choices on which the project focused its interventions.

- vi. Land tenure issues in the project intervention area: land ownership in the project intervention area (and in Mali as a whole) aims at securing the resources exploitable by agro-pastoralists. Equitable access to land is a major component of land tenure security. Collaboration between the stakeholders (the State, the project, local authorities, chambers of agriculture, etc.) does not seem to have provided yet a significant response to solve the problem in the project intervention area. In the Niono areas, for example, the land tenure issue has multiple causes, mainly related to land allocation and land access methods. The establishment of APFS requires the acquisition of plots to apply good practices. The process of acquiring demo plots is not effective and most APFS do not have their own plots for demonstration. Demonstrations are therefore carried out on plots owned by APFS members, which does not guarantee the continuity of activities, but does have the advantage of being closer to farmers' realities and promoting ownership.
- vii. The frequent use of certain practices that further weaken the ecosystems in the project area: the increasing use of bush fires and herbicides on degraded land represents a challenge for the project, which seeks to reverse the trend and to integrate producers into a framework of integrated land, production and pest management. The repeated practice of bushfires in some villages and the use of pesticides (especially in the Kita [cotton] and Niono [rice] areas) is a serious environmental problem. Although the project has succeeded in providing an alternative through the extension of bio-pesticides, the use of herbicides remains frequent and the trend is far from being reversed. At the same time, it should be noted that cotton and rice crops are not the key areas of intervention of the project.
- viii. Lack of concrete co-financing: the level of co-financing mobilisation foreseen in the project document was not respected, even though co-financing letters had been signed. The project interventions could not therefore include many municipalities and activities foreseen in the project document where the deliverables related to specific co-financing were well defined.

3.3 Project efficiency, implementation and execution

3.3.1 Management arrangements

- 61. FAO is GEF's implementing agency responsible for overseeing and providing technical guidance during implementation. In addition, the project is executed under the Direct Execution Modality of FAO. The latter thus also acts as the executing agency, in charge of procurement and recruitment for the various project services under the terms of FAO's rules of procedure, and in charge of financial services to manage GEF-LDCF resources. The technical execution of the project is also supported by the Government of Mali, represented by the Ministry of Environment, Water and Sanitation through ESDA. The comparative advantage of FAO – which has extensive experience in project management in the agricultural and rural context of Mali and the APFS approach, as well as proven technical expertise in many key project areas – is effective but the execution function is not dissociated from the implementation function. Besides, FAO, as a neutral platform, is also in a position to bring several stakeholders around the table.

62. Pursuant to this Direct Execution Modality, the FAO Representative in Mali acts as Budget Holder (BH) for the project. In close collaboration with the lead technical officer (LTO), the BH is responsible for the operational, administrative and financial management of the project. They coordinate the project support team set up to support the implementation of activities and to ensure that technical assistance and inputs are provided in a timely manner. They submit the financial report and procures goods and services for project activities in accordance with the rules of procedure.
63. For the implementation of project activities, a coordination unit has been established (Project Coordination Unit, PCU) in Bamako.
64. A participatory Steering Committee is responsible for decision-making.

3.3.2 Planning of activities

65. The planning of activities is based on Annual Work Plans and Budgets (AWBPs) developed and validated each year from 2015 to 2019 in a participatory manner. These AWBPs present in detail for each component and expected output the activities and sub-activities programmed for the year, the organisations in charge of implementation, the planned budget as well as the schedule selected. Since the beginning of the project, AWBPs are submitted and approved each year during the Steering Committee meeting, in accordance with the indications of the national counterpart and FAO procedures. The quality of the planning is therefore rated as satisfactory. Only what is foreseen in the work plans is executed, thus avoiding a "day-to-day" organisation.
66. The project management unit is now fully conversant with the rules laid down in this work planning and all the stakeholders are complying with them rigorously.

3.3.3 Financing and co-financing

67. The financial implementation analysed in the final evaluation relates exclusively to the resources available for the project over the period 2015-2019, consisting of GEF's contribution of USD 2 075 065 out of a total budget of USD 2 172 727, i.e. a disbursement rate of 95.5 percent.
68. GEF contribution financed the following project activities:
 - i. provision of international and local consultants for technical support to the project and audit and evaluation missions;
 - ii. design and creation of an optimised approach to field schools incorporating APFS;
 - iii. direct monitoring of activities;
 - iv. support through letters of understanding/contracts with technical institutions and service providers supporting the effective implementation of specific project activities in the field;
 - v. international air transport, office space and office equipment;
 - vi. training and awareness materials.
69. The analysis of financial flows compared to physical implementation rates shows that the project resources (mainly GEF's contribution) have been appropriately used. In other words, use is always lower than resources and there is no deviation from the planned

budget. The financial management is therefore rated as satisfactory, apart from the problem of co-financing, which was not successful, depriving the budget of a significant proportion of the resources planned.

70. The co-financing provided for in the project document on the basis of the commitments received is shown in Table 2.

Table 2: Project co-financing (in USD)

Name of co-financer	Type of co-financer	Type of co-financing	Co-financing at the beginning of the project			Co-financing achieved at the end of the project		
			In-kind support	Cash	Total	In-kind support	Cash	Total
ESDA	National	Grant	400 000	10 915 000	11 315 000	Not quantifiable	0	0
FAO	National	Grant	0	2 343 959	2 343 959	707.210	Not quantifiable	0
MDR	National	Grant	588 300	0	588 300	Not quantifiable	0	0
Total (USD)			988 300	13 258 959	14 247 259	Not quantifiable	0	Not quantifiable

Sources: project document, Mid-term evaluation, PIR 2019, exchanges with the project and project partners

71. In accordance with the project document, the total amount of co-financing is USD 14 247 259 as shown in Table 2. At the time of the evaluation, the mission found that no cash resources had been granted, but in-kind commitments from the ESDA and the MDR were effective according to the heads of these two structures.
72. The planned co-financing between the Government, FAO and GEF did not function as foreseen in the project document. This affected the quantity of project deliverables over the period 2015-2019.
73. Stakeholders in the four partner projects related to this project were not fully involved in the process of effectively mobilising co-financing. There are two reasons for this: (i) their consent was not sought, (ii) it was granted without a clear understanding of all its implications.
74. It can therefore be said that this co-financing was not really provided in a shared and participatory manner, since the partners did not all have the same understanding of the co-financing process.
75. Nevertheless, the project team continued to indicate the assumed co-financing in the various PIRs submitted to the FAO-GEF Coordination Unit and GEF on the basis of the following: (i) FAO Representation in Mali provided the staff dedicated to the project (5 percent) and the field officers (50 percent); (ii) The Government of Mali subsidised the agricultural inputs provided (50 percent), made available to the project the services of supervisory staff in agriculture, animal production and industries, and supported the rental of motorcycles for local advisers; (iii) The beneficiaries contributed through their participation in the activities of APFS; (iv) Local radio stations provided awareness raising information to the different communities in the project area on good practices and

comparative advantages of APFS; (v) Local communities and administrations provide the project with meeting rooms and offices for project activities; (vi) ESDA covered the costs of renting the project premises, water and electricity supply.

76. Through the Youth at work project, entitled "Reducing rural poverty (GTP/MLI/040/MUL)", FAO provided equipment (meeting desks, chairs, etc.). FAO also housed the project for about 4 months and also provided a vehicle and fuel to the coordinator and his team before the arrival of the project vehicles.

3.3.4 Gender mainstreaming

3.3.4.1 Institutional and organisational approach to gender mainstreaming

77. Until the end of 2017, an international expert served as the Lead Technical Officer in the coordination team. However, the lack of a specific mention of gender mainstreaming in the Terms of reference of this permanent key officer, limits the adoption of a gender-specific approach and the strengthening of gender mainstreaming aspects in the management and planning of work within the coordination unit. With regard to the Steering Committee, given its strategic position, its decision-making power in guiding implementation and its sensitivity to the various issues relating to inequalities in the targeted area of intervention, it would be important to include a mention on gender in the terms of reference of this governing body. The gender aspect, particularly through the development of a gender-specific approach, has not been sufficiently taken into account even though the reports provide some sex-disaggregated data for some components.

3.3.4.2 Findings on the implementation of gender mainstreaming within the different project components

78. The project should be commended for its efforts to recruit a National Expert in "Good Practices and Gender" for 12 months. These efforts are also reflected in the outcome indicator 1.1(a): activities to sensitise agro-pastoralists and identify learners in APFS paid special attention to women so that the APFS trained are gender inclusive. Out of the 3829 agro-pastoralists reached, 47 percent were women. 38 percent of these women have adopted at least one CCA practice. Indeed, the evaluation noted that women are more engaged in some of the CCA practices disseminated to APFS, based on practical needs and possible social conditions of access to productive resources.
79. A module on gender entitled "Gender and development and gender-based violence" was presented during the training of facilitators. However, its content and the related facilitation programme seem to be inadequate and not very up-to-date to allow for the integration of gender issues in the management of APFS, in order to create opportunities for women and men to access and control project resources and services. The evaluation notes the participation of 11 women in the training workshops (12.9 percent). Though this rate remains low, it is indicative of the project's efforts given the lack of availability of women managers in the field. The lowest participation of women in training is in Kita with one woman out of 32 participants (see Table 3).

Table 3: Gender distribution of participants in facilitator training

Districts	Men	Women	Total	% Women
Niono	27	6	33	18.7
Banamba	27	4	31	13
Kita	31	1	32	3
Total	85	11	96	12.9 %

Source: Report on the training of facilitators in "Agro-pastoral field schools", 2016

80. The added value of the presence of women in field training is appreciated by the female beneficiaries of APFS. According to a woman from Guinzabougou (Niono) APFS during the mission interviews in this village, *"women understand each other better because they live in the same situations, both intellectual and uneducated"*. Initiatives to organise and structure facilitators were noted in Kita, where a Local Network has been set up at the district level with branches in the municipalities.
81. The project has made efforts, in the area of women's empowerment, to promote a dynamic of collaboration between men and women, especially in the Banamba district. The project has so far succeeded to balance or reverse the trends (the balance of power with regard to resource management is still in favour of men). The evaluation acknowledges that the project alone could not reverse these trends. Indeed, it is a long-term process that goes well beyond the sole responsibility of the project.

3.4 Sustainability

3.4.1 Financial risks to sustainability

82. Like most APFS projects, this project developed technologies that did not require large investments, thus taking into account the capacities of the target groups. This resulted in the adoption of many practices that were evaluated by the project and that also emerged from the local review workshops. The risk of unsustainability therefore remains low, because even after the operational phase of the project, the transformation of APFS into cooperatives and interactive exchanges will continue through the WhatsApp link. The implementation of VSLAs is gradually spreading to other villages. It is also the case for the over-drilling of wells to access water for market gardening areas where the problem has arisen.
83. It is worth noting that most of the beneficiary communities are poor and their financial capacities make it difficult for them to continue the activities. The beneficiaries cannot complete all the activities but they will probably finance the activities they deem appropriate.

3.4.2 Socio-economic risks to sustainability

84. To identify the socio-economic risks, the effects induced by the various interventions were observed.
85. At the socio-economic level, the activities carried out had a fundamental role in the creation of sustainable employment and income. The diversification of activities through agro-pastoral practices aimed at rehabilitating ecosystems, is an important factor in promoting adaptation. However, given that the intervention area is an area where land

tenure issues remain persistent, conflicts related to resource management still threaten cohesion within the different communities in the project intervention area.

86. Moreover, producers appreciate the APFS approach, which allows them to learn new techniques quickly and acquire new knowledge. The effectiveness of APFS is largely due to the strong interaction between agro-pastoralists and technical services.
87. Many beneficiaries would like to see the learning dynamic continue after the completion of the project. The sustainability of APFS achievements can be achieved initially by transforming the group into an association, but this would require resources. The strategies envisaged by the beneficiaries to overcome socio-economic challenges therefore seem unrealistic.

3.4.3 Risks related to the institutional framework and governance

88. From an institutional point of view, the project is supported by the Government of Mali, as it is consistent with its national priorities and international commitments. The APFS approach is gradually being institutionalised as it appears to be the most appropriate approach for the extension of good agro-pastoral practices. Nevertheless, the weak capacity of the endogenous structures that manage VSLAs should be considered.
89. The involvement of decentralised and deconcentrated state services is a good basis for channelling efforts and resources so as to perpetuate the project's achievements.
90. Moreover, the concentration of activities in villages allows the capitalisation of lessons learned and their evolution towards more sustainable ecological models (ecological villages). However, it should be pointed out that the weak capacities of the beneficiaries in terms of good governance is a significant risk that may have impacts on the sustainability of the achievements.

3.4.4 Environmental risks to sustainability

91. Most of the technologies popularised by the project do not degrade ecosystems. However, the use of herbicides (by some beneficiaries of degraded land restoration activities), and the frequent practice of bushfires pose serious threats to the agro-pastoral resources of the project area.

3.4.5 Security risks to sustainability

92. Insecurity in the project intervention area, particularly in the Banamba and Niono districts, is now the highest risk for the project even if the communities in the intervention villages of these areas try to adapt. The main concern is the presence of Islamist groups that are gradually succeeding in pulling back the State. These armed groups, which today act as owners of the land, are hostile to projects, especially those that bring women and men together in the same place.

3.5 Factors affecting performance

3.5.1 Stakeholder involvement

93. There are two levels of involvement in the project: (i) the level of the implementation team, which includes the organisations responsible and accountable for the project and those responsible for the activities that influence the project, e.g., institutions that have a role in the management of agro-pastoral resources; (ii) the level of the group, which includes stakeholders with interests in the project intervention areas.
94. The progress noted has required the involvement of a wide range of stakeholders to facilitate trust and information sharing and to enable high levels of understanding and consensus for the project areas.
95. Stakeholders identified during the preparation of the project continued were involved in its implementation, notably through their participation in the Steering Committee. A stakeholder participation plan was developed to provide a framework between implementing partners and key stakeholders.
96. To promote sustainability, however, this plan should have included regional platforms for technical consultation around the project, bringing together stakeholders and relevant sub-regional project entities within the Kayes, Kolikoro and Segou regions. The evaluation noted that the project nevertheless succeeded in involving these stakeholders through their presence in the Steering Committee, as well as during the various field missions that served as opportunities for exchange with these different project partners.

3.5.2 Monitoring-evaluation system and knowledge management

97. The project monitoring-evaluation system is based on a mechanism ranging from the kick-off workshop to the production of annual activity and implementation reports (PIR, PPR, mid-term review, final evaluation, knowledge management and sharing during the project, and audits of accounts). The project uses conventional tools developed, tested and validated by FAO, for the monitoring and evaluation of field schools.
98. The Project Management Unit regularly conducts field monitoring missions of project achievements.
99. Project monitoring-evaluation is also integrated into that of the Country Office, which takes into account all project monitoring and evaluation mechanisms. These have enabled the project to monitor and measure the various project indicators.
100. Finally, institutional monitoring – which is essential in such a project – was carried out by the different partners who signed the memorandum (DNA, DNPIA, Mali Meteorological Agency, IER, SLPIA-Banamba, SLA-Kita, SLA-Niono) with FAO.
101. For data communication and/or knowledge management, the various activity reports drafted by the project and submitted to the main stakeholders (Government, FAO and GEF), provided indications on the project progress: (i) project outcomes, specifying the outcomes achieved for each project component; (ii) major challenges and lessons learned; (iii) risk analysis and management; (iv) partnership and resource mobilisation; (v) monitoring and evaluation; and (vi) outlooks.
102. Given the nature of this project and the attention paid to knowledge products, the communication of outcomes appears essential for the project. The evaluation team notes that knowledge outputs resulting from the project have been widely shared.

4. Conclusions and recommendations

4.1 Conclusions

103. The project outcomes in terms of project strategy, progress towards the achievement of outcomes, implementation and management, effectiveness, efficiency, sustainability, impact and gender, appear satisfactory according to the final evaluation despite the difficulties reported.

Conclusion 1. The strategic relevance of the project is highly satisfactory.

104. The project formulation is in line with FAO and GEF's commitment to provide solutions to improve the adaptive capacities of agro-pastoralism and address the consequences of climate change, including through the systematic integration of CCA strategies, practices and technologies into local initiatives. The project is consistent with national priorities, international commitments and the needs expressed by beneficiaries for climate change adaptation. It also contributes to the implementation of reference policies in the following areas: rural, socio-economic and environment development and, to a lesser extent, biodiversity protection.
105. The project's intervention logic is based essentially on the adhesion of local communities to adoption technologies, a participatory approach, promoting integrated management of agro-pastoral resources for CCA and the involvement of national institutions. The risks identified by the project are also relevant and the strategies identified to reduce them are in most cases considered adequate.

Conclusion 2. The overall relevance of the project is highly satisfactory.

106. The project contributes specifically, through its various deliverables, to the achievement of the defined objectives. The adopted activities and intervention methods contribute to achieving the overall outcome and meeting beneficiaries' expectations. The analyses carried out have shown the soundness of the project and the consistency of the various effects and outputs defined with the various priorities set out, even in the absence of an explicit formulation of the project's intervention logic through a theory of change.

Conclusion 3. Progress towards the achievement of impacts are highly satisfactory. The project has facilitated a continuous and dynamic exchange between agro-pastoralists and has had a positive impact in some areas.

107. The actions carried out focused on activities in the 2015, 2016, 2017, 2018 and 2019 work plans. On average, the physical implementation rates were 128 percent for the first component, 173 percent for the second component, 156 percent for the third component and 123 percent for the fourth component. The project's achievements have thus surpassed expectations: the trajectory of progress is therefore highly satisfactory.
108. Factors that contributed to this success include: the participatory approach of the project, based entirely on APFS, and the adaptability of the project team to institutional and operational challenges. Difficulties are, however, observed despite the progress made. Overall, they concern: the lack of stability of stakeholders within certain structures; the weak capacity of endogenous structures that manage VSLAs; the poor integration of the various measures for implementing local adaptation strategies; the lack of consideration of agro-

pastoral product processing and/or conservation techniques; land tenure problems in the intervention area; the extensive use of harmful practices that contribute to further weakening the ecosystems in the project intervention area (bush fires and pesticides); and the lack of concrete implementation of co-financing.

109. APFS have proved to be learning spaces for good practices, as they globally facilitate an integrated understanding of the ecosystem and agro-pastoral approach, in particular through a number of mechanisms that inevitably have an impact on the economic, ecological and social environment of farmers and breeders. The adoption and respect of good agro-pastoral practices considerably improves the productivity and yields of animal and plant speculation subject to the consequences of climate change in the project intervention area. The setting up of APFS has fostered regrouping in all the villages targeted by the project. In the majority of villages, conflicts between farmers and breeders related to the management of agro-pastoral resources are mostly resolved by APFS.
110. The project has provided women with access to innovative CCA practices to improve their incomes. For example, VSLAs have helped to mobilise significant credit funds to finance development activities for women and men in APFS according to some APFS members.
111. The project has also promoted the establishment of an exchange forum between farmers, breeders and facilitators, notably through the creation of a WhatsApp group.
112. Finally, this project was a precursor to the "Resilient, productive and sustainable landscapes in Mali's Kayes Region" project, whose PIF has already been implemented.

Conclusion 4. The overall efficiency of the project, the quality of execution and management which showed good responsiveness are satisfactory.

113. In accordance with FAO's Direct Execution Modality, FAO is the implementing agency but also the executing agency of the project, with memoranda of understanding to provide services.
114. The project structure consists of a Coordination Unit based in Bamako and a participatory Steering Committee, which met approximately once a year. This structure ensured effective planning and implementation of project activities. The project resources (consisting mainly of GEF's contribution) were used appropriately. However, the low level of co-financing mobilisation did not make it possible to carry out certain specific planned activities. The monitoring-evaluation of the project relied effectively on the various monitoring tools put in place. It also generated effective communication on the progress of activities. The knowledge outputs resulting from the project have been widely shared.
115. With regard to the human and material resources used as well as the financial means used to achieve the different targets, the mission team rates the effectiveness of the project as satisfactory.

Conclusion 5. The effectiveness of the project is highly satisfactory. One of the reasons agro-pastoralists appreciate this approach is that it allows them to meet regularly (once a week), learn new techniques quickly and acquire new knowledge.

116. The analysis of the physical implementation rates per component shows that overall effectiveness is satisfactory. More than 98 percent of the planned outputs per component have been achieved. The project has thus achieved almost all the outcomes of the different

components and progress is visible. This is sufficient evidence of the effectiveness of APFS which create a strong interaction and dynamic between agro-pastoralists and facilitators (technicians of the technical service).

Conclusion 6. The sustainability of the project is moderately likely.

117. At the socio-economic level, the activities implemented by the project have a fundamental role in the creation of sustainable job and income. At the financial level, although most of the beneficiary communities are poor and their financial capacities make it difficult for them to continue the activities, some beneficiaries will certainly finance the activities they deem appropriate. In addition, the networking of stakeholders through a functional WhatsApp link, and the Village Savings and Loan Associations set up, are elements that strengthen the resilience of agro-pastoralists and render their achievements sustainable. Nevertheless, the weak capacity of the endogenous structures that manage VSLAs should be considered.
118. Besides, land tenure remains a problem in the intervention area.
119. The involvement of decentralised and deconcentrated state services helps to channel efforts and resources so as to perpetuate the project's achievements.
120. The weak capacities of the beneficiaries in terms of good governance represent a significant risk that may have an impact on the sustainability of the achievements. The use of herbicides by some beneficiaries of degraded land restoration activities, and the frequent practice of bushfires pose serious threats to the agro-pastoral resources of the project area. It should be noted that information on the hazards of pesticides and on existing alternatives (plant extracts) is exchanged through the WhatsApp network.
121. Insecurity in the project intervention area, particularly in the Banamba and Niono districts, represents the highest risk for the project even if the communities in the intervention villages of these areas try to adapt.

Conclusion 7. Environmental and social safeguards are respected.

122. The project is classified in category B (projects whose negative impacts on the environment and populations are less severe than those of category A projects. These impacts are limited and rarely irreversible) pursuant to Decree No. 2018-0991/ P-RM of 31 December 2018. The actions undertaken under the project have an overall positive impact on the ecosystems of the Banamba, Kita and Niono districts since they divert communities from bad practices, as it can be seen throughout the intervention area.

Conclusion 8. The project has made modest efforts to address gender mainstreaming.

123. However, gender mainstreaming is insufficiently analysed in the project document in the sections dealing with the assessment and justification of the project feasibility. Indeed, the relevance analysis does not take into account women's vulnerability to climate change and its consequences on the project's resilience and adaptation activities. Furthermore, no reference is made to social discrimination and the unequal access of women pastoralists and agro-pastoralists to productive resources, which limit their equitable participation in achieving the objectives of APFS.

124. The lack of a specific analysis differentiated according to the socio-economic and socio-environmental realities of the three districts selected as the project intervention area, has resulted in a global planning model that is not gender-specific and often inadequate in relation to the practical and strategic needs of the project's female and male beneficiaries. Nevertheless, during the implementation, the project has made efforts, in the area of women's empowerment, to promote a dynamic of collaboration between men and women.

4.2 Recommendations

4.2.1 Measures to enhance the final benefits of the project

125. The main recommendations of the evaluation team to strengthen the final effects of the project are as follows:

Recommendation 1 to FAO and ESDA, with high importance.

Advocate for the institutionalisation of the APFS approach.

126. In order to address the uncertain stability of stakeholders within certain structures (especially within the technical services providing the active APFS facilitators), the project should seek the institutionalisation of the APFS approach from the Ministry of Agriculture, as a particularly effective extension tool for building resilience to climate change.

Recommendation 2 to national structures (DNA, DNPIA), FAO, with high importance.

Build the capacities of VSLA members.

127. The project has facilitated the setup of 42 VSLAs practising financial intermediation. The staff of these VSLAs needs to be more structured and trained to promote effective and efficient governance of resources in order to ensure their sustainability. Some members need to be trained in simplified bookkeeping and financial statements. The evaluation acknowledges that the project is nearing completion. FAO can seek VSLA capacity building from DNA and DNPIA.

Recommendation 3 to national structures (DNA, DNPIA), FAO, with moderate importance.

Strengthen the various measures for implementing local adaptation strategies

128. For a better integration of locally implemented measures, it is important to build the capacities of VSLA members in the processing and preservation of agricultural and animal products. The evaluation acknowledges that the project is nearing completion. FAO can seek the capitalisation of the local adaptation strategies developed from DNA and DNPIA.

Recommendation 4 to the Project Team, FAO and ESDA, with high importance.

Organise a national workshop on land tenure issues after project closure.

129. Equitable access to land is an essential component of land tenure security. Collaboration between stakeholders, including the State, the project, communities and chambers of agriculture, does not seem to provide a significant response to the land tenure issue in the project intervention area, particularly in the Niono area and the area covered by the Office du Niger. For the continuity and sustainability of participatory learning, APFS must have spaces dedicated to demonstrations. The ongoing process of acquiring plots is not effective and most APFS do not have their own plots. To facilitate the acquisition of these plots, the evaluation team recommends that a national workshop bringing together the

various stakeholders (FAO, Project, communities, regional authorities, rural technical services, Office du Niger, etc.) should be organised in order to address the problem and find solutions.

Recommendation 5 to the Project Team, FAO, GEF and ESDA, with moderate importance.

Draw lessons from the weakness and difficulties in mobilising co-financing.

130. Co-financing as provided for in the project document was not effective. Although co-financing letters were drawn up, none of these commitments were respected. In addition, the stakeholders concerned do not seem to understand GEF's co-financing policy. The mission recommends that a study be carried out prior to the closure of the project to document co-financing bottlenecks and draw lessons for other FAO/GEF projects.

Recommendation 6 to FAO, national structures (DNA, DNPIA, Mali Meteorological Agency, IER), with high importance.

Consolidate project achievements such as the transformation of APFS into cooperatives and cooperative union, and contribute to their scaling up with the new GEF project in the Kayes region.

131. The project outcomes are very satisfactory. It is important before the end of the project to design an additional three-month programme to capitalise on the achievements and contribute to their scaling up with the new GEF project in the Kayes region. Among the achievements, we can mention the transformation of APFS into cooperatives and a cooperative union. This complementary programme must also provide for the centralisation and dissemination of good agro-pastoral practices, in particular through the implementation of a small-scale programme.

5. Lessons learned

132. The lessons learned at this stage of the project are as follows:

- i. The implementation of the project through the APFS approach has created a strong momentum in the adoption of good agro-pastoral practices by the stakeholders in the intervention area. Henceforth, this approach appears to be the best in terms of climate change adaptation and resilience building and it is gradually being institutionalised.
- ii. The concentration of adaptation and resilience building activities (set of adaptation activities) in villages improves the achievement of outcomes and promotes integration between agriculture and livestock.
- iii. Routine and conventional practices are abandoned in favour of sustainable practices when popularised adaptation models produce changes that positively affect the livelihoods of farmers and pastoralists.
- iv. APFS provide a forum for the exchange of experiences and the development of agro-pastoral innovations adapted to the needs and constraints of farmers and pastoralists.
- v. When most APFS members prefer to start work on their own plots before joining work on APFS plots – which therefore start late – results on these plots are poor, often below those of individual fields.
- vi. Positive discrimination should be integrated into poultry farming practice through means that facilitate the construction of improved poultry houses and take into account the difficult socio-economic conditions of widows, single mothers without children or young women without significant support.
- vii. The implementation of water and soil conservation practices (Zaï, half-moon ...) by women requires specific support to ensure access to additional labour for this hard and exhausting work.
- viii. The promotion of fodder crops among women agro-pastoralists involves strengthening them in terms of agricultural equipment and production resources (particularly land and agricultural credit).
- ix. Although this is essentially a pastoral programme, integrating vulnerable producers' needs requires a strategic focus on agricultural production, given that the project operates in a food-insecure area and women have the heavy burden of providing cereal supplements and all the ingredients needed to make sauces.
- x. The gender effectiveness and efficiency of CCA practices within APFS require gender mainstreaming in the selection process, based on an analysis of the social division of labour according to gender and the practical and strategic needs of women in carrying out the targeted actions. This approach will facilitate the integration of specific actions and support aimed at reducing the constraints of women and men social status. Indeed, it will create favourable conditions to reduce women's vulnerability in the workplace and promote their involvement in the project.
- xi. The choice of CCA practices must be accompanied by the development of a coherent strategy to strengthen the basic resources that support their sustainable achievement (the case of water resources for composting and sufficient availability of Neem stands for the manufacture of bio-pesticides).

- xii. Compliance with environmental protection standards is necessary when the project opts for the promotion of market gardening practices in CCA actions. In particular, the project should endeavour to make the perimeter operational by securing the plot with wire fences rather than wood to combat deforestation. The project should also guarantee all the conditions of water availability and the necessary facilities so that the beneficiaries can proceed with the exploitation of the plot before the end of the project.
- xiii. The reinforcement of women's literacy is a necessity to improve their effectiveness in the management of local project management structures (APFS, VSLA and network offices). Young women in particular are a guarantee for the sustainability of the actions and practices popularised by the project. Their high level of education and their active participation in APFS give them the opportunity to be part of decision-making and governance of the governing bodies. The presence of young women, who are more competent, alongside older women, who are more available and more listened to, increases the chances of reducing inequalities in access to decision-making power. Gender-specific support measures are therefore needed to promote the participation of young women in APFS.
- xiv. A gender strategy is necessary to support the development and implementation of the communication plan as well as the use of the media, in order to highlight the importance of women and men's participation and contribution in the adoption of CCA practices.
- xv. Appropriate measures must be defined to support the collection and use of VSLA funds so that the credits granted are not used for activities that are harmful to natural resources and the environment (trade in wood and charcoal, wildlife hunting development fund, purchase of pesticides, motorcycle pumps, etc.).
- xvi. APFS are in favour of gender complementarity as they allow both women and men to benefit from the sharing of experiences and expertise. Complementarity makes it easier to carry out activities that require physical effort, which are difficult for women to perform. Mixed APFS therefore meet the objectives of equal opportunities for women in order to enable them to benefit from the project services.
- xvii. Co-financing under GEF-funded projects must be understood and accepted by all stakeholders in order to facilitate its effective implementation.
- xviii. The creation of a WhatsApp group under the APFS approach helps to maintain a dynamic of exchange of experiences and problem-solving between farmers and pastoralists.

References

FAO. 2012. *Country programming framework, Mali (2013-2017)*. Bamako (also available at: <http://www.fao.org/3/a-bl902f.pdf> [French language] consulted November 2019).

FAO. 2017. *Country programming framework, Mali (2018-2022)*. Bamako.

Ministry of Environment and Sanitation, Environment and Sustainable Development Agency. 2010-2017. *Climate Change Action Plan*. Bamako.

Ministry of Environment and Sanitation, Environment and Sustainable Development Agency. 2010. *Strategic Investment Framework for Sustainable Land Management*. Bamako. (also available at: http://aedd.gouv.ml/wp-content/uploads/2017/12/CSI_GDT_Last_CIS.pdf [French language], consulted November 2019).

Ministry of Environment and Sanitation, Environment and Sustainable Development Agency. 2011. *Framework for a Green and Climate Resilient Economy (EVRCC)*. Bamako.

Ministry of Environment and Sanitation. 2011. *National Policy on Climate Change*. Bamako.

Ministry of Environment and Sanitation. 2011. *National Strategy on Climate Change*. Bamako.

Ministry of Equipment and Transport. 2007. *National Climate Change Adaptation Program*. Bamako. (also available at: <http://extwprlegs1.fao.org/docs/pdf/mli147201.pdf> [French language], consulted November 2019).

Ministry of the Environment and Sanitation and Sustainable Development. 2018. National environmental protection policy. Bamako.

Quizon, Jaime & Feder, Gershon & Murgai, Rinku. 2001. *Fiscal Sustainability of Agricultural Extension: The Case of the Farmer Field School Approach*. Journal of International Agricultural and Extension Education. 8. 10.5191/jiaee.2001.08102. (also available at: https://www.researchgate.net/publication/228716088_Fiscal_Sustainability_of_Agricultural_Extension_The_Case_of_the_Farmer_Field_School_Approach, consulted April 2020).

Office of Evaluation
E-mail: evaluation@fao.org
Web address: www.fao.org/evaluation

Food and Agriculture Organization of the United Nations
Viale delle Terme di Caracalla
00153 Rome, Italy