Food and Agriculture Organization of the United Nations

Terminal evaluation of the project "Integrating climate resilience into agricultural and agropastoral production systems through soil fertility management in key productive and vulnerable areas using the Farmer Field School approach"

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Project code: GCP/ANG/050/LDF
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Abstract

This report concerns the terminal evaluation of the project "Integrating climate resilience into agricultural and agropastoral production systems through soil fertility management in key productive and vulnerable areas using the Farmer Field School approach" also called "IRCEA" funded by the Global Environment Facility (GEF) and implemented by the Food and Agriculture Organization of the United Nations (FAO) from 2016 to 2022. The evaluation used a Theory of change-based approach, and combined documentary review with primary data collection and ground-truthing. It relied on the criteria required for GEF-funded project. The evaluation results will be used by FAO, GEF, the Government of Angola and other partners and beneficiaries to learn from project performance and inform future interventions.

The evaluation found that IRCEA design was well aligned with the strategic priorities of the government, FAO and GEF and its theory of change (TOC) appropriate to meet the priority needs of populations in terms of climate change adaptation/sustainable land management (CCA/SLM). IRCEA built on previous core government agricultural and environmental programs in Angola and coordinated with other ongoing interventions, to maximize outcomes for beneficiaries. IRCEA experienced COVID-19 pandemic which restricted mobility during approximately 12 months. Two general elections occurred in Angola, creating mixed political effects and some negative implications. At internal level, a new FAO Country Representative took office in 2018 when the project had lacked a Chief Technical Advisor for 1.5 years. Recruitment efforts, including in Portuguese-speaking countries, failed to attract candidates due to the COVID-19 pandemic and language barriers. This prolonged Chief Technical Advisor absence compromised activities under Outcome 4, which depended on Chief Technical Advisor leadership for monitoring and evaluation (M&E) system design, progress tracking, results evaluation and experience systematization. Regarding effectiveness, the project made met most of the targets in building capacity and promoting CCA practices through FFS under Components 1 and 2, but fell short on supporting the CCA mainstreaming into policies and programs under component 3.

In conclusion, the project was relevant to the resilience of target beneficiaries and to the government's priority needs for adaptation to climate change and the promotion of sustainable agriculture. The project Efficiency was moderately unsatisfactory, due to internal and external factors not properly mitigated, gaps in implementation and execution, and a poor monitoring and evaluation system. The project effectiveness was moderately satisfactorily due to gap in meeting Outcome 3. The project sustainability was moderately unlikely, as results remain fragile in a risky environment. However, the project created positive environmental and social effects and satisfactorily integrated and empowered women FFS members.

The evaluation recommends FAO to support the government in embedding the FFS model and CCA/SLM tools in the planning of future national agricultural development programmes and curricula in future similar projects. FAO must put in place adequate measures to prevent and mitigate organizational and operational risks and weaknesses that affect its performance regarding the implementation and the delivery of expected results. FAO should compile a database of master trainers, and Chitaka community contractors who can be mobilized and deployed as local service providers in future resilience projects in the country. The Organization should develop and implement a strategy for disseminating data and knowledge products for greater access and utilization by interested public. It should support the Government of Angola, and partners to conduct a countrywide assessment of national indigenous seeds in danger of extinction with the aim of halting their loss as a result of climate change.

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The evaluation was managed by Aimé Dongmo Ngoutsop (Senior Evaluation Specialist at FAO Office of Evaluation) and carried out by a team of independent consultants composed of Ventura Mufume (Evaluation Specialist) and Domingos José do Nascimento (Project Theme Specialist).

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Abbreviations

ADRA	Action for Rural Development and the Environment
CCA	climate change adaptation
CSA	climate-smart agriculture
EDA	agricultural development stations
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
FGD	focus group discussion
FRESAN	Strengthening Resilience and Food and Nutrition Security in Angola
GEF	Global Environment Facility
GSA	Food Security Office
IFAD	International Fund for Agricultural Development
IDA	Institute of Agrarian Development
INAMET	National Institute of Meteorology
IRCEA	Integrating climate resilience into agricultural and agropastoral production systems
ISCED	Luanda Higher Institute of Educational Sciences
ISPT	Tundavala Polytechnic High Institute
KII	key informant interview
LOA	letter of agreement
M&E	monitoring and evaluation
MOSAP II	Smallholder Agriculture Development and Commercialization Project II
MTE	mid-term evaluation
PIAAPF	Integrated Plan for Acceleration of Family Agriculture and Fishing
PSC	Project Steering Committee
SAMAP	Small Agriculture Market Access Programme
SLA	sustainable land management
SPAA	Participatory Survey with Agroecological Approach
TOC	theory of change

Map of Angola

Source: UN Geospatial. 2004. *Map of Angola*. United Nations, New York, United States of America. [Cited 28 April 2024]. https://www.un.org/geospatial/content/angola-0 Refer to the disclaimer on copyright page for the names and boundaries used in this map.

Executive summary

Introduction

1. This terminal evaluation managed by the Office of Evaluation of the Food and Agriculture Organization of the United Nations (FAO), concerns the project funded by the Global Environment Facility (GEF) entitled "Integrating climate resilience into agricultural and agropastoral production systems through soil fertility management in key productive and vulnerable areas using the Farmer Field School approach" (GCP/ANG/050/LDF, GEF ID: 5432) hereinafter referred to as "IRCEA project". The project was structured into four components pursuing the four results: i) the adaptive capacity of the Ministry of Environment, the Ministry of Agriculture and Fisheries, the Ministry of Commerce, the National Institute of Meteorology (INAMET), the Food Security Office (GSA), provincial governments, civil society organizations, academia and research organizations, to minimize climate risks in both agropastoral and agricultural production systems, is strengthened; ii) 115 000 farmers adopt climate change adaptation/sustainable land management (CCA/SLM) practices; iii) environmental and agricultural policies and programs at national and decentralized levels integrate CCA aspects; and iv) results-based management approach to project implementation based on the application of project lessons learned to facilitate future operations. Its implementation started in November 2016 and officially closed in November 2022.

2. This terminal evaluation covered the entire project implementation with focus on the period from the mid-term review in September 2019 to the project's closure in November 2022. It used the theory of change approach to provide an in-depth analysis of selected key aspects of the project – design, evaluation, implementation, outcomes and post-project continuity prospects – to improve collaboration, learning and adaptation. The assessment and rating (at the request of the GEF) of the project performance was based on the criteria (see below) and evaluation questions agreed with FAO and GEF.

3. The evaluation report is primarily intended to the FAO office in Angola, the Regional Office for Africa, GEF and the Government of Angola at central, provincial and municipal levels in the four towns where the project was implemented, Chicomba, Caconda, Caluquembe and Quilengues. It is also aimed at local academia, non-governmental organizations (NGOs) at project sites, who are secondary stakeholders interested in learning from this evaluation to enhance their prospects as service providers for similar interventions. Additionally, the report targets local Farmer Field Schools (FFS) and other beneficiaries for whom it would enhance advocacy and learning.

4. The evaluation was carried out by a team of two independent consultants under the supervision of the evaluation manager at the FAO Office of Evaluation. Data collection was conducted at project sites in Angola from 30 December 2022 to 13 February 2023, with additional remote interviews and group discussions during the report writing phase. The evaluation was conducted five months after Angola's 2022 general elections, which led to a major government reshuffle, including mergers of key ministries and appointment of new officials to project-related positions. This made it untimely to gather views from new stakeholders barely involved with the project. Another constraint was the unavailability of former project personnel like the Lead Technical Officer, Chief Technical Advisor, National Project Coordinator and GEF representatives who left before completion.

Conclusions

5. **Conclusion 1.** *Relevance and coherence*: Through the FFS approach, the project was relevant to the resilience of target beneficiaries and to the government's priority needs for adaptation to climate change and the promotion of sustainable agriculture. It coordinated or created collaborations and synergies with other similar or complementary interventions carried out by the government and its partners in Angola and was able to adjust its theory of change and its strategy to fill some gaps in its design and to cope with external constraints and major changes that occurred afterward.

6. **Conclusion 2.** *Efficiency - quality of implementation and execution - monitoring and evaluation system*: Despite good collaboration between FAO and the Government of Angola and partial restructuring of the project such as successful introduction of the integrated Production Model Chitaka, the project faced several factors that hampered project implementation and execution and therefore reduced its effectiveness and efficiency. These factors include delays in planning and carrying out activities, interruptions due to bureaucratic procurement and recruitment policies, staff turnover, the COVID-19 pandemic, the limited monitoring and evaluation system and the change of government which weakens or breaks the interest and commitment of the new administration.

7. **Conclusion 3.** *Effectiveness*: The project made a valuable and successful contribution to capacity building and to promoting climate-smart agriculture (CSA) practices through FFS (including through research outputs by academic partners and FAO), but due to constraints encountered during implementation, it has failed to adequately mainstream CSA into policies/programs. The introduction of the Chitaka integrated production system later (2022) in the project motivated farmers to re-engage with FFS activities that most had abandoned during the long interruptions and resulting uncertainty of the communication gap.

8. **Conclusion 4.** *Sustainability*: The project promoted the testing and dissemination of an approach and technologies that are within the reach of producers and can be adapted to the local context. However, the results remain fragile. Although policy makers and FAO senior management are optimistic that CCA/SLM practices will continue beyond the project and its GEF financing, its long-lasting adoption by individual smallholders outside the FFS needs appropriate support for them to obtain investments required for modern agriculture. Chitakas also need such support to upgrade into conventional infrastructure, for greater sustainability.

9. **Conclusion 5.** *Environmental and social safeguards - gender equality*: The project created positive environmental and social effects in terms of improved CCA/SLM practices through FFS without any notable negative environmental impacts. The FFS provided a sense of belonging and recognition to its members, mainly women farmers. The project satisfactorily integrated and empowered women FFS members. Women's presence in management committees was the most visible aspect of gender integration.

Recommendations

Recommendation 1. FAO's future similar projects in Angola should support the government in embedding the FFS model and CCA/SLM tools and technologies in the planning of future national agricultural development programmes and curricula. FAO should strengthen its long-term support to climate resilience of the agropastoral production systems in Angola by re-engaging with specialized public, private and non-governmental research institutions including the Wongo Agricultural Training Centre in Catabola, and the José Eduardo dos Santos University, which are already training master trainers and agricultural extension agents in the country. FAO should assist the Ministry of Agriculture and

Fisheries in ensuring the national Agricultural Market Information System sets reference prices for each crop at the start of each agricultural season and disseminates them to farmers to enhance their bargaining power.

Recommendation 2. FAO must put in place adequate measures to prevent and mitigate organizational and operational risks and weaknesses that affect its performance regarding the execution of GEF-funded projects and the delivery of expected results. These measures must primarily target the strengthening of procurement capacities, activity planning, provision and deployment of human, technical and financial resources, monitoring-evaluation and informed decision-making.

Recommendation 3. FAO should support the development of a database of master trainers, and Chitaka community contractors who can be mobilised and deployed as local service providers in future resilience projects in the country. That would also grant graduating students with access to internship opportunities at local municipalities where they could assist FFS at no cost in exchange for academic coaching by tutors.

Recommendation 4. FAO should develop and implement a strategy for disseminating the content of the scientific material and other intellectual property housed by partner institutions such as the Lubango Herbarium of the Luanda Higher Institute of Educational Sciences (ISCED), the Tundavala Polytechnic High Institute (ISPT) as well as the climatic database at INAMET and the Agrobiodiversity Atlas under the guardianship of the Ministry of Culture, Tourism and Environment for greater access and utilization by interested public.

Recommendation 5. FAO, the Government of Angola and international partners currently funding FFS – the World Bank, the European Union, the French Development Agency (AFD) and the International Fund for Agricultural Development (IFAD), among others – should seize Angola´s membership in the International Treaty on Plant Genetic Resources for Food and Agriculture as an opportunity to conduct a countrywide assessment of national indigenous seeds in danger of extinction with the aim of halting their loss as a result of climate change.

GEF rating table

GEF criteria/dimensions	Rating	Summary comments
A. OUTCOMES (relevance, coherence, effectiveness and progress to impact, efficiency)	**MS**	
A1. Relevance	**S**	See Finding 1 and Finding 2
A2. Coherence	**S**	See Finding 3
A3. Effectiveness	**MS**	See Finding 5, Finding 6, Finding 7, Finding 8, Finding 9, Finding 10, Finding 11, Finding 12 and Finding 13
A4. Efficiency	**MU**	See Finding 4
B. SUSTAINABILITY (financial, sociopolitical, institutional and governance, environmental dimensions including risks to sustainability)	**MU**	See Finding 14, Finding 15, Finding 16, Finding 17, Finding 18 and Finding 19
C. IMPLEMENTATION	**MS**	See Finding 22 and Finding 23
D. EXECUTION	**S**	See Finding 24, Finding 25, Finding 26 and Finding 27
E. M&E design	**HU**	See Finding 29
D. M&E implementation	**MU**	See Finding 30
Overall project rating	**MS**	

Notes:
Ratings: Highly satisfactory (HS); Satisfactory (S); Moderately satisfactory (MS); Moderately unsatisfactory (MU); Unsatisfactory (U); Highly unsatisfactory (HU); Unable to assess (UA); Highly likely (HL); Likely (L); Moderately likely (ML); Moderately unlikely (MU); Unlikely (U); Highly unlikely (HU); Unable to assess (UA)
Source: Elaborated by the Evaluation Team.

1. Introduction

1. This report concerns the terminal evaluation of the full-scale regional project "Integrating climate resilience into agricultural and agropastoral production systems through soil fertility management in key productive and vulnerable areas using the Farmer Field School approach" (GCP/ANG/050/LDF, GEF ID: 5432) hereinafter referred to as "IRCEA project". The project started in November 2016 and was officially closed in November 2022 (Box 1).

Box 1. Basic project information

- GEF project ID number: 5432
- Recipient country: Angola
- Implementing agency: FAO
- Executing agency: FAO
- Project budget: USD 30 287 412 (GEF: USD 6 668 182; co-financing: USD 23 619 230)
- Date of project start: 3 November 2016
- Revised end date of the project: 21 November 2022
- Date of mid-term evaluation: October 2022

1.1 Evaluation purpose and intended users

2. This evaluation as defined in the evaluation terms of reference (FAO, 2022a) had a twofold purpose:

   i. Inform the donor Global Environment Facility (GEF), the implementing partners and the Government of Angola actors and partners about the implementation of the project and its execution; and

   ii. improve learning by identifying project results, their impact on the intended beneficiaries and their contribution to achieving the objectives set out in the project document, as well as what worked and what did not work, with a view to supporting the consolidation of results and informing similar future interventions.

3. The present evaluation is intended to inform the following audience and potential users:

   i. GEF, the Government of Angola, the FAO Angola Office and the FAO Regional Office for Africa, to inform decision-making, ensure accountability to partners and to improve their programmes.

   ii. FAO and government staff, and in particular the future formulators and implementers of the project, who will be able to use it to capitalize on and promote knowledge.

   iii. Other FAO operational partners, such as other national governments, donors and resource mobilization partners, national and global level counterparts interested in using the results of the evaluation to inform their own decisions for future integration of climate change adaptation/sustainable land management (CCA/SLM) into agropastoral production systems and policies.

   iv. Other key stakeholders who could use the findings of the evaluation to inform interventions and/or other forms of technical cooperation in similar contexts.

   v. Beneficiaries of FAO interventions, for accountability to affected populations and ethical purposes.

2. Project and evaluation background

2.1 Context

4. Angola is in southern Africa, bordering the Atlantic Ocean, Namibia, Zambia and the Democratic Republic of the Congo (see map of Angola). It covers 1 246 700 sq. km and has a population of 34 094 077, with 36.5 percent rural (INE, 2023). The relief of Angola is quite heterogeneous: the plateau has different characteristics with some areas reaching heights greater than 1 500 m in altitude, notably in the towns associated with IRCEA project implementation namely Bié, Huambo, and Huíla and some towns in Malange province.

5. The country has arable soils suitable for agriculture. However, the agropastoral sector's contribution to the economy has been inconsistent. Agricultural employment fell from 7 895 jobs in 2017 to 1 888 in 2018. In Q2 2021, agriculture and livestock's contribution to gross domestic product (GDP) decreased by 0.4 percent due to drought and locusts. But in Q2 2023, this sector grew 1.6 percent and contributed 0.002 percent to GDP growth (INE, 2023), driven by increased crop (11.0 percent) and livestock (0.16 percent) production.

6. Data on employment in Angola's agropastoral sector is limited, but rural unemployment (16.2 percent) was lower than urban (36.5 percent) in 2018. Unemployment was slightly higher among women (29.6 percent) than men (27.3 percent) (Open Data for Africa, 2023, based on INE 2014 available at https://angola.opendataforafrica.org/). Agriculture was the fourth largest employer of new labour market entrants, filling 662 vacancies (2.4 percent of total) in 2017 and 1 099 (7 percent) in 2018.

7. Angola's climate varies from north to south, influenced by relief, proximity to the coast, the Namib Desert and the cold Benguela current. There are two seasons: the rainy season from October to April (reaching 1 500 mm on average, peaking around 1 800 mm in north/east) when temperatures are highest (37–39 °C in Cunene and Namibe); and the dry season (Cacimbo) from May to August when temperatures in the south-central region can drop below 5 °C in Bié, Huambo and Huíla.

8. The Angolan civil war began in 1975 and continued, with interludes, until 2002. War damaged and/or prevented the development of Angolan infrastructure, including meteorological infrastructure. This lack of recent data makes the analysis of climate change today difficult. Projections indicate a decline in the agricultural growing period in both southern Angola and along the coast, while areas in the north that now have two growing seasons may only have one in the future. If realized, this would severely impact smallholder farmers who depend on rainfall for staple crops, which are already declining because of unsustainable practices and soil erosion.

9. In 2018/2019, Angola faced an unprecedented drought, described as the worst disaster in 40 years. The drought severely affected the southern provinces of Namibe, Bié, Huíla, Cunene and Cuando-Cubango. It impacted more than 70 000 households' livelihoods and led to more than 73 000 cattle deaths in Cunene province alone (Mateus and António, 2020). The rain deficits in northern Angola during that period resulted from the inhibited movement of moisture by the Intertropical Convergence Zone, escalating into a widespread regional drought that persisted through most of the fall. Analysts conclude that while initially meteorological, the drought conditions have extended to agricultural and hydrological droughts in recent years.

2.2 Project description

10. The project aimed to "integrate climate resilience into agricultural and agropastoral production systems through soil fertility management in key productive and vulnerable areas using the FFS approach." Its objective was to strengthen the climate resilience of agropastoral systems in vulnerable areas of Bié, Huambo, Malanje and Huíla provinces.

11. This was to be achieved through: i) mainstreaming CCA into agricultural and environmental policies, programmes and practices; and ii) capacity building and promoting CCA through soil fertility and SLM) practices using the FFS approach. The project strategy is built on four main components that each pursue four different outcomes:

    i. Component 1 – Strengthen knowledge of climate change vulnerability and adaptation. Outcome 1: Adaptive capacity of the Ministry of Environment, the Ministry of Agriculture and Fisheries, the Ministry of Commerce, provincial governments, civil society, the National Institute of Meteorology (INAMET) and the Food Security Office (GSA) to strengthen staff in order to minimize climate risks in both agropastoral and agricultural production systems.

    ii. Component 2 – Scale up improved CCA/SLM practices through FFS. Outcome 2: 115 000 farmers adopt CCA/SLM practices.

    iii. Component 3 – Mainstream CCA into agricultural and environmental policies and programmes. Outcome 3: Environmental and agricultural policies and programmes at national and decentralized levels integrate CCA aspects.

    iv. Component 4 – Monitoring and evaluation. Outcome 4: Results-based management approach to project implementation based on the application of project lessons learned to facilitate future operations.

12. The project aimed to directly support at least 150 000 farmers through an existing network of 5 150 FFS to develop and implement climate resilient approaches and practices. It planned to train FFS master trainers and facilitators to disseminate these strategies and practices, collaborating with FAO's sub-regional FFS Network. It also worked on building institutional capacity and cross-sector coordination to mainstream CCA into rural development and the agricultural sector.

13. The project underwent restructuring which redirected focus to Component 2, where FAO's introduction of the unplanned Chitaka production model catalysed success. Actions were reduced under Components 1 and 3. In Component 1, despite developing a climate database with INAMET, capacity building was limited to two trainings for ministry officials, and government reshuffling compromised ownership. In Component 3, FAO maintained relations with the Institute of Agrarian Development (IDA) through joint trainings and FFS evaluations, but policy reform efforts fell short of expected outcomes.

14. Overall, the restructuring concentrated efforts on scaling up climate-resilient practices (Component 2) over the building of systematic capacity and policy mainstreaming originally envisioned. The changes had a positive impact by enabling a strong finish after setbacks threatened the project for most of the five-year period. However, it diverted the project from its holistic approach that had integrated agriculture, environment, and policy reforms. Instead, it became solely focused on the Chitaka production model, unsupported by a policy framework and strong institutional climate change capacity and readiness. In essence, the restructuring traded the project's original multi-pronged vision for a narrower but more achievable focus on promoting climate-resilient practices on the ground.

2.3 Theory of change

15. The theory of change (TOC) was not provided in the project document. But one TOC used for this evaluation was developed by the evaluation team who validated it with the project team (see Figure 1.).

16. The project design built upon baseline government agriculture and environmental programs implemented in Angola before IRCEA, to maximize results for beneficiaries. The strengths of the project's TOC include capturing institutional arrangements and strategic alignments to ensure the resilience of agricultural and pastoralist households in Huíla province. At the same time, the TOC has weaknesses that were not considered in project design. Several changes and unforeseen factors presented below emerged during project implementation, challenging the TOC, and in some cases, opening new opportunities.

17. During the project's implementation, two general elections occurred in Angola, creating mixed political effects: the Provincial Governor of Huíla was replaced, while the governors of Bié, Huambo and Malanje remained in office.

18. The project's strategy provided that the deputy governor for social affairs would ensure coordination in each province. This strategy was implemented, but with some minor changes in the missions of the municipal administrators, allowing actions related to the project to proceed with minimal risk of negative impact.

19. At the ministerial level, there was a merger of the ministries of Agriculture with Fisheries and of the Environment with Culture and Tourism, changes which produced some negative implications, resulting from the replacement of the Secretary of State for Agriculture, as ministerial coordinator.

20. Implementation of the project was hampered by the COVID-19 pandemic, with one preventive measure being restricted mobility between Luanda and the remaining regions of the territory. This period lasted approximately 12 months (March 2021 to February 2022), and, according to partner institutions and beneficiaries, negatively affected project activities.

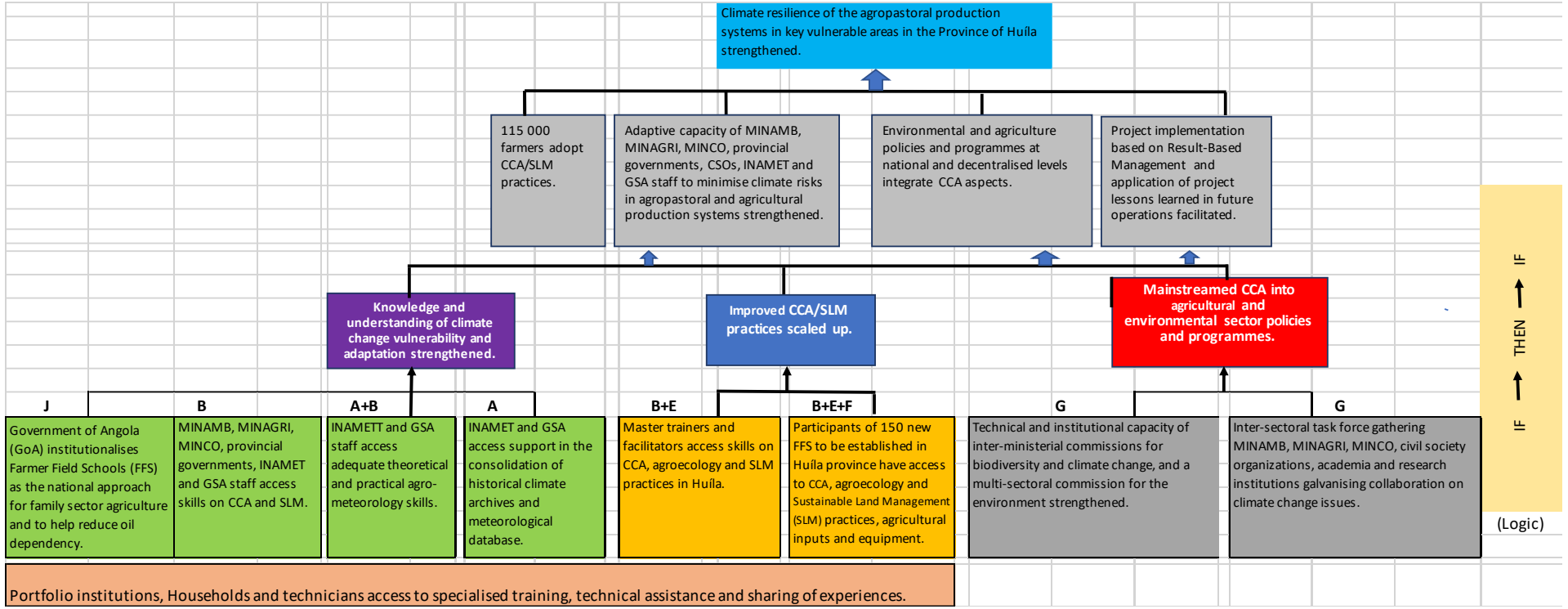
21. The project took place in a context where other government's programmes have been or are being implemented to diversify the economy by turning agriculture into a source of income for the country and a mechanism to fight hunger and poverty, through the reinforcement of family farming (see section on Coherence). These constituted catalyst elements for the involvement and commitment of the authorities.

2.4 Structure of the report

22. Following this introduction, the report includes the following sections: Methodology, Results; Conclusions and Recommendations; Lessons Learned. The report also includes one annex.

    i. Annex 1. Terms of reference for the evaluation

Figure 1. IRCEA project theory of change



Caption: (A) Supporting the National Institute of Meteorology (INAMET) and GSA in the consolidation of the historical climate archive 1971-2000 and meteorological database 2005-2015 for all available stations in the Provinces of Bié, Huambo, Huíla and Malanje; **(B)** Training of Master Trainers, staff from key government ministries and institutions, civil society organizations, and academia or research institutions on CCA/SLM (Climate Change Adaptation/Sustainable Land Management) in crop-livestock production systems.; **(C)** Carrying out a rapid climate vulnerability assessment in collaboration with INAMET and GSA; **(D)** Re-training and equipping Farmer Field Schools (FFS) facilitators involved in the Smallholder Agriculture Development and Commercialization Project II (MOSAP II) according to the updated curricula on CCA and SLM practices and FAO CCA tools; **(E)** Training and equipping of master trainers and facilitators in Huíla Province; **(F)** Supporting the establishment and implementation of 150 new FFS in Huíla Province, focusing on CCA and SLM practices; **(G)** Setting up an institutional task force comprising representatives from the Ministry of Environment, the Ministry of Agriculture and Fisheries, the Ministry of Commerce and civil society organizations for a better inter-sectoral coordination on CCA; **(H)** Developing and supporting the implementation of a land and natural resources management system including CCA considerations in 3 municipalities covered by the project; **(I)** Establishing of a monitoring and evaluation (M&E) system to obtain information on progress in meeting targets, evaluating results and facilitating the systematization of experiences; **(J)** Government´s selection of agriculture as the basis for economic diversification following the economic downturn caused by oil dependency.

Source: Elaborated by the Evaluation Team.

3. Methodology

3.1 Scope and objectives of the evaluation

3.1.1 Scope

23. This terminal evaluation covered the entire project implementation, entire duration and all components. The mid-term review (2019) was the main informative document on the first part of project implementation. Activities under the second outcome (115 000 farmers adopt CCA/SLM practices) were examined in-depth to understand efforts at central, provincial, and municipal levels for training farmers on CCA/SLM innovative practices.

24. The assessment looked at: i) performance against objectives in the project document, compared to other FFS projects under the Smallholder Agriculture Development and Commercialization Project II (MOSAP II); ii) results, sustainability; and transformational SLM changes; iii) implementation shortcomings and good practices; iv) integrating CCA in environmental and agriculture policies/programs at national and decentralized levels; v) applying lessons learned in future operations; and vi) strengthening the adaptive capacity of key ministries (the Ministry of Agriculture and Fisheries, the Ministry of Environment and Tourism, the Ministry of Commerce), provincial governments, civil society, INAMET and GSA staff to minimize climate risks in agropastoral and agricultural systems. Despite project restructuring resulting in less focus on some components by FAO under IRCEA (see section 2.2 Project description), the evaluation team assessed them with equal rigor based on the understanding that changes stemmed from internal/external factors including ministry restructuring after the 2022 elections. Some activities cancelled from Component 1 were reprogrammed elsewhere, e.g. FAO supporting INAMET's agrometeorology stations through the European Union-funded project "Strengthening Resilience and Food and Nutrition Security in Angola" (FRESAN), with six stations installed in Cunene (Curoca and Chiulo), Namibe (Curoca and Chiulo), and Huíla (Gambos and Chicomba).

3.1.2 Evaluation objectives and questions

25. The objectives of this terminal evaluation, as defined in the terms of reference (TORs), were to assess and rate (when requested by GEF) the performance of the project based on the criteria recommended by the GEF guidelines for conducting terminal evaluations of full-sized projects: additionality, relevance, coherence; effectiveness; efficiency; sustainability, implementation and execution, monitoring and evaluation; cofinancing; application of GEF policies and guidelines; lessons learned (GEF, 2023). This exercise aimed to provide insights for improving future CCA/SLM projects and contributed to the FAO Office of Evaluation's evaluation of similar interventions.

26. Three main evaluation questions served as a common thread for the research process, namely:

- EQ 1: To what extent has the project, in line with the priorities of the GEF, FAO and the Government of Angola, effectively contributed to strengthening the climate resilience of agropastoral systems in the targeted vulnerable areas?
- EQ 2: What were the quality and timeliness of the results obtained, and the factors involved?
- EQ 3: To what extent were the results generated by the project sustainable?

27. These main evaluation questions were broken down into questions aligned with each evaluation criterion (FAO, 2022a) and then into sub questions and indicators (see Appendix 5). These subquestions and indicators served as a basis for developing questionnaires and interview guides,

which were translated into Portuguese (Angola's official language). Additionally, for focus group discussions with sampled FFS members, the questions were translated impromptu into Quimbundo and Umbundu in Huíla and Bié provinces, respectively, by an evaluation team member, sometimes with the assistance of local FFS members.

3.2 Methodological design

3.2.1 Evaluation approach

28. The evaluation followed standard practices and principles outlined by the United Nations Evaluation Group norms and GEF guidelines for terminal evaluations of full-sized projects. The approach involved collaboration and transparency among all internal and external stakeholders throughout the evaluation process. The research was carried out by an international and national consultant team, who facilitated a participatory approach by engaging stakeholders at central, provincial, municipal, and communal levels.

29. The evaluation primarily used a qualitative approach based on the TOC to analyse the project's results chain and highlight the outcomes achieved and internal/external factors affecting performance. It considered the underlying assumptions of the TOC, stakeholder experiences, and findings from the mid-term evaluation (MTE). Project performance assessment was based on evaluation questions aligned with the Organization for Economic Cooperation and Development – Development Assistance Committee (OECD-DAC) criteria and other FAO/GEF criteria like additionality, capacity development, co-financing, implementation & execution, monitoring & evaluation, partnerships, communication, knowledge management, safeguarding, gender, human rights, indigenous peoples and lessons learned.

30. The evaluation used a mixed-methods approach that combined and triangulated primary data collected from project stakeholders through interviews, discussions, and observations with information from reviews of project and policy documents, and any other relevant document.

31. Key informant interviews and focus group discussions involved stakeholders at policy level and project sites, including FFS members, master trainers, facilitators and construction brigade members in Huíla, Bié and Huambo provinces. This allowed comparison between IRCEA project FFS and the government's baseline MOSAP II project FFS. Due to time constraints, focus groups had mixed gender participants. The evaluation team reviewed various documents provided by FAO Angola, including project document, progress reports, financial statements, GEF/FAO policies/guidelines, the MTE report, agreements, country policies and related documents for data triangulation to validate findings.

32. Due to long distances between municipalities and FFS, poor road conditions and the United Nations (UN)'s daytime driving policy, the evaluation team in consultation with FAO Angola's senior management and project team decided to adopt a random sampling of municipalities. The focus was on areas severely affected by climate change and which represented the different types of project activities implemented, to ensure fair representation despite limitations.

33. The evaluation matrix in Appendix 5 specifies the evaluation questions, sub-questions, indicators, as well as the methods and tools used for data collection and analysis for each question.

3.2.2 Sampling

34. The evaluation was conducted in five target municipalities in Huíla province: Lubango, Chicomba, Caconda, Quilengues and Caluquembe, where core IRCEA activities are located. It was

complemented by field visits to Bié and Huambo provinces, which, despite being dropped from IRCEA sites, receive similar[1] government interventions as they are part of the Southern and Central regions most critically affected by drought and other climate change effects. This is to expand the possibilities for capturing lessons.

35. The terminal evaluation adopted a purposive sampling involving FFS implemented by the project (FFS project) in four municipalities in Huíla province, and FFS not part of the project (non-project FFS) implemented by the government's agricultural development institute in Bié province. Out of 184 FFS projects, 11 were selected in Huíla and two from another project in Bié, totalling 13 FFS surveyed.

36. The following considerations were made to get a good mix of results:

    i. a balance between FFS located along road corridors and those FFS located further in the interior;

    ii. maturity of the FFS: those established in 2018 whose progress was cut short because of challenges with project implementation due in part to the COVID-19 pandemic shutdown, between those that during the terminal evaluation were awaiting evaluation by IDA to graduate to the next phases;

    iii. the FFS that were farmers' cooperatives/associations who embraced the CCA/SLM aproach, between those that were created as FFS and were in the process of becoming ccoperatives; and

    iv. non-project FFS that faced similar challenges, and adopted the same organisational and managerial model, yet employed CCA/SLM practices.

37. The Evaluation Team visited the following FFS that were part of the evaluated IRCEA project in Huíla province:

    i. ECA Towinhe (Chicomba);

    ii. ECAs 1° de Maio, Marquinha Mahinda and Irmãos Unidos (Caconda);

    iii. ECAs Valódia, Cangombe and Tusseteka (Caluquembe); and

    iv. ECAs Ekumbi, Progresso, Kaussamba, Mutengue (Quilengues).

38. The following MOSAP II project FFS were visited in Bié province:

    i. ECA Ecule (Cooperativa Lucenje) – Cunje Municipality; and

    vi. ECA Okulinga Upange (Cuito Municipality).

[1] The government's FFS in Bié adopted a similar CCA methodology but used conventional practices including chemical fertilizers, irrigation schemes and did not use the Chitaka land management model as IRCEA FFS did.

Table 1. List of provinces and municipalities included in data collection

Province	Municipality	Number of FFS visited	Project to which visited FFS belongs	Focus group discussion completed	Key informant interviews
Huíla	Lubango	None	None	7	1
	Caconda	3	IRCEA	3	1
	Chicomba	1	IRCEA	2	1
	Caluquembe	3	IRCEA	-	5
	Quilengues	4	IRCEA	3	3
Huambo	Chianga	0	None	3	2
Bié	Cunje	1	MOSAP II	1	2
	Catabola	0	MOSAP II	1	-
	Cuito	1	MOSAP II	2	-
Luanda	Luanda	0	None	1	5
Remotely		0	None	3	3
TOTAL	10	13	2	26	23

Source: Elaborated by the Evaluation Team.

39. Fourteen out of 26 focus group discussions (FGDs) were carried out with key informants identified through a snowball approach, including senior government officials on the Project Steering Committee, FAO, municipality representatives, agriculture directors, technical personnel, heads of two agricultural training institutes, master trainers, resilience specialists, service providers from academia and community members employed in Chitaka construction brigades. Twelve FGDs were carried out with members of the FFS of the IRCEA and MOSAP II projects. Each group included farmers, management committee members, facilitators, and resilience technicians, women and men together. Considering the controlled FFS context, the groups were homogeneous with gender as the most significant differential.

40. The evaluation also used key informant interviews (KIIs) with primary stakeholders including separate groups of FFS facilitators, community brigade members involved in Chitaka infrastructure construction, municipal administrators, central/sub-national government representatives, FAO senior management/program personnel at central level in Luanda and the FAO regional office in Lubango (see Appendix 1 for the list of interviewees).

Data collection methods and tools

41. The questionnaire was used adaptively, skipping questions not applicable to certain respondent profiles based on their project role. Questions about integrating CCA/SLM into rural development policies, FAO's adherence to original design, risk mitigation, financial management, stakeholder engagement, and results dissemination through monitoring and evaluation (M&E) were not asked of FFS members during focus group discussions and key informant interviews. The interview and discussion content were tabulated and analysed to respond to the evaluation questions and sub-questions.

i. The evaluation conducted 13 semi-structured interviews, both in-person and remotely, with key informants at various levels and profiles in Luanda. The informants were proposed by the FAO Angola team and identified through a snowball method.

ii. FGDs were used to obtain inputs from FFS members, facilitators, extension agents, and members of the Chitaka construction community brigades, both in-person and remotely. This technique was useful given the large number of people interviewed

over a limited time across long distances, the homogeneity of the groups, and the types of questions aimed at assessing changes in knowledge, attitudes, and practices.

iii. The Evaluation Team directly observed project-supported farmers' fields, FFS demonstration plots, Chitaka infrastructures, technologies used, crop status, maps, and other features during field visits across the sampled municipalities to triangulate information from other sources.

42. To structure the FGDs and avoid bias or power imbalances that could lead to misrepresentation, the evaluation team formed homogeneous groups and treated each group separately. Discussions were held with FFS members, facilitators, extension agents, master trainers, and members of the Chitaka construction committees in their respective separate groups. There were no specific FGDs held exclusively for women for two reasons:

i. limited time at the site (as mentioned in the limitations section); and

ii. women generally had an upper hand and were involved in decision-making across all aspects of the FFS, including labour division, management, production, commercialisation, etc; thus, gender integration was the least concern in the project.

Key informants – Categories of informants interviewed

43. The evaluation selected and categorized key informants.

44. Data collection covered a comprehensive range of stakeholders from FAO, the government, former participants, academic partners, students, local authorities, service providers and others related to the project, as outlined in the TOR. A full breakdown of key informants interviewed per category is provided in Table 2.

Table 2. Categories of stakeholders interviewed

Sector/stakeholder	Category of informant	Number interviewed
Evaluation client (FAO)	Senior management	7
	Project coordination and technician	3
	Resilience technicians	4
	Former project consultant	1
	Former project Lead Technical Officer	1
Government	National Director at Ministry of Environment	1
	Head of National Directorate at Ministry of Agriculture	1
	Deputy governor	1
	Municipal Administrator	1
	Dean of Faculty of Agricultural Science	1
	IDA Municipal director	1
	Graduate from FAO-funded training of trainers (TOT)	1
	Head of agricultural training centre and Master Trainer.	1
Civil society / service providers	Chitaka construction community committee members.	4
	National NGO specialised in training on participatory community land delimitation.	1
	FFS Master trainers.	2
Academia / Service providers	Environmental engineering students (formerly hired by FAO to develop the Participatory Survey with Agroecological Approach (SPAA) tool).	4
	Lecturer and Researcher, Student, Socioecologist, Animal Specialist, Coordinator for the Environmental Engineering course.	5
FFS	Facilitators and Members including management committee.	237

Source: Elaborated by the Evaluation Team.

Stakeholder participation in the terminal evaluation

45. The stakeholders reported in Table 2 include both focus group discussion participants and key informants who were interviewed individually or in groups. These stakeholders were selected for their knowledge of the project based on their roles as focal points, beneficiaries/clients, service providers with agreements signed with FAO, or having participated in some other capacity.

46. All key stakeholders participated in the evaluation, providing inputs on their level of involvement, the results of their participation, and opinions on the prospects of project results. Except for central and municipal government institutions, all local-level stakeholders showcased tangible outputs funded by the project. This involvement provided evidence for the evaluation team to ascertain project results and substantiate the evaluation findings, conclusions, and recommendations.

3.2.3 Data analysis

47. The data was cleaned to identify and eliminate inconsistencies, outliers, and potential biases, then triangulated to check plausibility, consistency, complementarity, and ensure validity.

48. The evaluation questions served as references for analysing the data. Key evaluation indicator values and results of content analysis of responses from the KIIs and FGDs were used to identify key trends in responses and generate useful information to answer each evaluation question and sub-question. Data analysis systematically highlighted key internal and external factors that favoured or hindered the achievement of the project theory of change and the project results for each criterion or main question. All those information generated were used to formulate and support findings and determine the level of project performance for each evaluation criterion based on the GEF rating scale. These findings were further used to formulate and support the evaluation conclusions.

3.3 Limitations

49. The convenient sampling strategy and imbalance between KIIs and FGDs made it difficult to generalize results. Time constraints prevented breaking focus groups into women–only, men–only, and mixed groups for greater gender balance. To mitigate this, the evaluation used focus group discussions and aimed for territorial coverage by visiting selected FFS across all four municipalities.

50. The unavailability of government officers from key ministries in Luanda due to political commitments was a significant limitation. To compensate, the evaluation team prioritized interviewing senior officials in the four municipalities.

51. Assessing the project's effect on individual farms rather than just demonstration plots was important. However, the short time for field data collection prevented visits to individual farms due to long distances from the demonstration plots. To mitigate this limitation, the evaluation cross-referenced the information available in the project progress reports and the responses of the stakeholders questioned on the subject.

4. Project performance

4.1 Relevance

Rating: Satisfactory

Finding 1. The IRCEA project objectives and activities remain relevant and aligned with Angola's agricultural sustainable development priorities and its climate resilience agenda, and the climate change adaptation priorities of the GEF and the FAO in Angola

52. At the policy level, IRCEA's objective and scope were congruent with national strategic priorities, especially when the government formulated the National Environment and Climate Observatory in 2022 to oversee multidisciplinary climate and land data for decision–making on drought, land use, water, uncontrolled fires, agriculture, ecology, and health. The Observatory was coordinated by the Ministry of Culture, Tourism and Environment, the same ministry leading IRCEA's implementation. It integrates the two co-lead ministries (the Ministry of Agriculture and Fisheries and Ministry of Industry and Commerce) among others, and is technically supported by 17 public institutions, including those that benefited from IRCEA's capacity building under Component 1. Component 2 aligned with the pillars of the National Food Security and Nutrition Strategy in the increase and diversification of agropastoral/fishery production and the strengthening of organizational and productive capacity at the level of smallholder associations. The overall resilience goal of the project including the integration of CCA into agricultural and environmental policies and programs (under component 3), is aligned with the country's increasing focus on CCA corroborated by current political discourse that promote sustainable and resilient food systems. This demonstrates the relevance of the project with Angola's strategic and institutional priorities for adaptation to climate change.

53. The IRCEA project cut across FAO's 2013–2017 and 2018–2022 Country Programming Frameworks (CPFs) and aligned with the priority areas in both (FAO, 2012; 2018). In the 2013–2017 CPF, IRCEA's climate resilient livelihood's objective matched all three priorities: i) strengthening smallholder production and productivity for food security and nutrition; ii) natural resource management by local authorities and community groups; and iii) increasing resilience of rural livelihoods to climate shocks and change. These priorities embedded IRCEA's outcomes in improving production techniques, natural resource management and strengthening individual/institutional capacity for CCA.

54. In the 2018–2022 CPF, FAO envisaged extending the IRCEA FFS methodology nationwide, in line with the government's five-year plan. FAO's Priority 1 was to increase food security and support the growth and competitiveness of the agricultural sector. Priorities 2 and 3 reinforced this situation by improving the coordination of natural resource management and strengthening the resilience and adaptive capacity of smallholder farmers and fishers to climate impacts – clearly linked to IRCEA's Component 1 on strengthening knowledge of climate vulnerability, understanding, and adaptation and Component 2 on scaling up CCA/SLM practices through FFS.

55. The project was particularly aligned to the following GEF strategic objectives: CC-A-1: Reducing the vulnerability of people, livelihoods, physical assets, and natural systems to the adverse effects of climate change; CC-A-2: Strengthening institutional and technical capacities for effective adaptation to climate change; and CC-A-3: Integrating climate change adaptation into relevant policies, plans, and related processes.

56. FAO employed the GEF 5/Least Developed Countries Fund (LDCF) funding to IRCEA in partnership interventions with other capacity development actors including the World Bank, the International

Fund for Agricultural Development (IFAD) and the European Union in seven provinces to address the three capacity development dimensions in the country. Administrative data (FAO, 2022b) reported the following results indicating the strengthening of technical and functional capacities of individual farmers, farmers' organisations, and government institutions:

Finding 2. Despite a generally coherent project design in relation to the objectives, and good involvement of the project parties at the design stage, the project missed the opportunity to identify and manage certain risks and realities of the context which were likely to limit its results.

57. The project took a comprehensive approach by linking the three GEF CCA focal areas to the pressing needs of agropastoral population in Huíla province and southern Angola. These needs were related to frequent droughts and floods leading to soil erosion, pest outbreaks, and diseases affecting agricultural production. The Chitaka production system emerged as an innovative solution to accelerate impact given the tight timeline (FAO, 2022c; 2022d and UN, 2023).

58. In Quilengues, stakeholders considered the project design comprehensive. It provided FFS with irrigation systems and the Chitaka manual and technical guides, which addresses knowledge, operational capacity and infrastructure gaps through the Chitaka model, start-up funds, and incentives. In water-scarce Quilengues, the initiative of artisanal borehole was praised, despite pipe difficulties. With intermittent rivers making rainfed agriculture unviable, the boreholes provide long-term benefits. And while the design was good, there was no time for full implementation.

59. FAO experts consider IRCEA to be excellent in southern Angola once delays in implementation were overcome. They established FFS using the proper FFS methodology, leaving them at an improved stage, except in Chicomba, where the FFS initially lacked the graduation cycle themes. Students who supported the development of the Participatory Survey with Agroecological Approach (SPAA) tool found the project relevant despite the delays. They highlighted Huíla's extreme climate pattern as well as the continuous dissemination of knowledge at local institutions in Huíla, such as the Polytechnic of Umpata, which kept the environmental engineering community updated.

60. However, the project strategy had some weaknesses that were not identified and prevented or mitigated at the design stage. They include the poor consideration of road connectivity constraints between FFS and the market, the absence of actions aimed to deconstruct certain negative and non-factual beliefs of farmers, the failure to take into account the security of land tenure and property rights of the FFS, the absence of the Ministry of Commerce which was unable to create the enabling environment, and the absence of a targeted and appropriate advocacy strategy to facilitate the integration of adaptation to climate change into policies and programmes.

61. The project design ignored the need for road connectivity between FFS to facilitate knowledge exchange, reduce dependence on FAO for agricultural inputs, and lower transportation costs for better bargaining power for marketing surpluses. In Holongue, Caconda municipality, the local FFS was unable to carry out peer learning exchange visits due to transport difficulties, leading them to develop synergies within the same community. In Caluquembe municipality, master trainers assisting many FFS faced challenges reaching distant communities due to long distances and lack of transportation. In Caconda, poor access roads forced FFS to lower farmgate prices as produce deteriorated during transportation to distant markets.

62. Mainstreaming climate change adaptation into policies and programs (Component 3) became unrealistic for a five-year project without a targeted advocacy strategy. Despite successful Chitaka

production system initiatives and academic partnerships, and the FAO representative's change management allowing adoption of the innovative Chitaka model, engagement with decision-makers diminished after the 2022 elections and dismantling of the steering committee. Consequently, with major employee departures prior to the COVID-19 pandemic, the overworked team struggled to achieve this component's goal.

63. The project did not clearly include activities or actions aimed at deconstructing some of farmers' pre-established beliefs that could potentially limit the results. For example, in Chicomba, the extension technician challenged the local belief that maize could only be grown in the first season and beans in the second. He had two FFS farmers sow 10 kg of beans in the first season as an experiment. Another FFS was advised to intercrop beans and corn. The *Towinhe* FFS initially thought beans couldn't be grown there but after seeing the results realized beans could be cultivated in the first season.

64. The project design did not address the security of land tenure and the property rights of FFS. However, given that the main objective of the FFS is to disseminate replicable knowledge and practices in individual areas, targeting this issue in the context of the country's land law would have created more obstacles to achieving the project's objectives. It was not possible to verify the property rights of the communities before establishing Chitaka production systems in those communes. Security land tenure is crucial to eradicate poverty, gender inequality, and food insecurity, contributing to multiple Sustainable Development Goals (SDGs) such as 1, 2, 5, 11, 15 and 16 on peace and security. In 2017, FAO engaged Action for Rural Development and the Environment (ADRA) to train personnel on participatory community land delimitation to secure land rights for rural communities in accordance with the 2004 Land Law. The evaluation did not determine whether the FFS communities had secured land tenure rights, as most of the Chitaka lands were informally "loaned" without formal mechanisms. Key informants have noted emerging land conflicts in which landlords demand land back after seeing FFS profits, displaying their unpreparedness to give up investments. With regards to free, prior and informed consent (FPIC) requirements, the evaluation did not find the evidence that the project activities affected the lands, territories and resources that Indigenous Peoples customarily own, occupy or otherwise use.

65. While the Ministry of Commerce was included as project co-executing partner in the original design, the results framework had no clear activities to be implemented by the Ministry of Commerce besides inter-sectoral coordination, thereby misrepresenting its actual role. The project overestimated that in five years, the beneficiaries could be able to consolidate FFS, master techniques, and produce on a scale that justified the Ministry of Commerce's role of market regulation. Ultimately, the absence of the Ministry of Commerce left Huíla farmers unprotected against market distortions, such as high transport costs, forcing local sales at lower prices. The failure to extend CCA/SLM training to align ministries and mainstream practices into policies has compromised the achievement of Components 1 and 3, limiting the depth and breadth of resilience for agricultural/pastoralist households in Huíla. This affected the interwoven TOC sequence.

4.2 Coherence

Rating: Satisfactory

Finding 3. Beside its internal coherence demonstrated in the previous sections (TOC and relevance), the project coordinated with or leveraged similar or complementary interventions carried out by the government and its partners across the country such as CI-GEF Project 10505, 2015–2023 GEF project on strengthening climate resilience in the Current Benguela fisheries system and MOSAP II.

66. IRCEA and the CI-GEF Project 10505 have recognizable links, as the latter is based on IRCEA's capacity building in INAMET. It aims to establish hydrometeorological stations in conservation areas to inform climate-resilient planning and support the integration of climate change adaptation into sectoral strategies and budgets, like IRCEA.

67. IRCEA complemented the 2015–2023 GEF project on strengthening climate resilience in the Current Benguela fisheries system, which promoted adaptation strategies for food and livelihood security in marine fisheries affected by climate change (FAO, 2023a).

68. Other notable programs in the agriculture and environment sectors included the Land Rehabilitation and Pasture Management in Smallholder Agropastoral Production Systems in Southwest Angola (RETESA) that was implemented by the then the Ministry of Environment, and MOSAP II, valued at USD 70 million funded by the World Bank, which in 2019 was extended to the livestock sector covering the provinces of Huíla, Namibe, Cunene and Cuando Cubango to ensure a reduction in meat imports and reinvestment of savings in the country's economy. The terminal evaluation of the Subcomponent 1.1 of MOSAP II (also called SADCP) implemented by FAO to scale up the FFS was achieved and published in 2023 (FAO, 2023b).

69. Also in 2019, the government turned its focus to commercial agriculture by launching the Commercial Agriculture Development Project (PDAC) which focused on key value chains, with funding from the World Bank and the French government. The Small Agriculture Market Access Programme (SAMAP), a USD 28.8 million project from IFAD and USD 8.2 million from the Angolan government for the period 2018 to 2024 covered 33 544 farming families with skills reinforcement in field schools in Kwanza Sul and Huíla provinces and in the municipality of Conda in Kwanza Sul. The project is said to benefit 88 FFS, 42 of which already benefit from FAO funding. Two of the most recent policy incentives were the Integrated Plan for Acceleration of Family Agriculture and Fishing (PIAAPF) launched in 2020 aimed at supporting productive assets, and the Fertilizers Subvention Policy (2021), an import subsidy measure intended to help low-income farmers increase their productivity. In 2018, the Government of Angola approved the Production Support, Export Diversification and Import Substitution Programme (PRODESI), through Presidential Decree # 169/18 of 20 July 2018.[2]

[2] The PRODESI programme seeks to i) increase the production and sales volume of priority products and sectors, speeding up diversification and boosting national comparative advantages; and ii reduce the expenditure of foreign exchange resources on the basic basket among other objectives. To achieve those objectives, the program also defines five critical assumptions and the one directly pertaining to the agricultural sector seeks to design, approve and implement, in stages, import substitution initiatives in the agriculture, livestock, agroindustry, fisheries, food industry, light industry, heavy industry, health, technical and professional training, and education sectors.

4.3 Efficiency

Rating: Moderately Unsatisfactory

Finding 4. The project faced inefficiencies due to FAO's bureaucratic procurement and hiring policies, as well as a mid-term change in government and lack of interest from the new administration. Despite the management team's efforts and the successful introduction of the Chitaka production model, the mid-term evaluation's attempt to re-align the project was hindered by continued government disinterest and difficulties with FAO's processes for procurement and signing of letters of agreement (LOAs).

70. The project faced difficulties in recruiting and retaining key technical personnel, especially expatriate staff, jeopardizing implementation. After the COVID-19 pandemic, FAO Angola struggled to attract competent regional specialists, according to key informants. The final project team failed to effectively re-engage government officials through the Project Steering Committee (PSC).

71. FAO saved project funds by forming task teams with defined roles (zootechnics, irrigation, horticulture), supported by local community members. Only a few paid construction master builders were involved, with others providing voluntary labour. In Catanha and some Caluquembe communes with weak community mobilization, more hired labourers were required due to lack of voluntary participation. In communities without animal transportation for materials, the construction of the Chitaka model incurred high labour costs as brigades had to manually transport materials across rivers to sites.

72. FAO faced challenges in signing agreements with private institutions, leading to complex arrangements like contracting an individual professor, who then had the Tundavala Polytechnic High Institute (ISPT) sub-contract him for implementing the WebGIS municipal profiles component. Key informants noted these agreements lacked clarity on roles/responsibilities, requiring partners to initially self-fund activities. It was recommended that FAO improve administrative processes and communication with partners.

73. The project signed reasonable LOAs with modest budgets (Luanda Higher Institute of Educational Sciences, ISCED – USD 10 000, ISPT – USD 20 000, ADRA – USD 84 000) for the high-value products generated. However, despite the inputs, there was a neutral impact on agricultural outputs under Component 2. A significant budgetary issue was the considerable temporary labour cost. From July to December 2021, FAO spent USD 283 416, with 46 percent (USD 130 372) on consulting fees against a budget of USD 133 987 (148 percent overspend). This is because staffing levels were increased after the COVID-19 pandemic to accelerate the implementation of the project on the ground and support the implementation of the Chitaka and SPAA tools, the costs of which were not initially budgeted for. Conversely, the budgeted local labour (USD 1 331) was underspent at USD 222. The Steering Committee recommended hiring more national consultants to offset high international consultant costs.

74. The late distribution of agricultural equipment by the project to support production did not significantly aid farmers and FFS in getting good harvests. In Caconda, the Irmãos Unidos FFS earned over 16 000 kwanzas (USD 19.31) from previous tomato sales but had to manually fetch and carry water to irrigate the plants before receiving FAO's solar and drip pump systems.

4.4 Effectiveness

Rating: Satisfactory

Finding 5. The project made valuable and successful contributions in capacity building and promoting CCA practices through FFS. Most of its targets were met or exceeded, in particular under Component 2, which introduced the Chitaka agroecological model but fell short in adequately supporting the creation of enabling conditions for mainstreaming CCA into policies and programs.

75. Table 3 and Appendix 3 show an update on the value of the project's outcomes and outputs indicators up to February 2023. Under Outcome 1, a total of 170 staff from the Ministry of Environment, the Ministry of Agriculture and Fisheries, the Ministry of Commerce and provincial government staff as well as civil society organizations, academia and research institutions, were trained on CCA and SLM practices in crop-livestock production systems. The project largely achieved Outcome 2 by training a core group of MOSAP II master trainers and FFS facilitators on CCA/SLM practices and establishing 150 new FFS in Huíla trained on CCA/SLM. However, the depth of beneficiaries' knowledge acquired is questionable due to the short timeframe for technicians to disseminate CCA/SLM practices. Approximately 6 064 project beneficiaries, of whom 3 150 women, (against a target of 4 000) from 185 new FFS established in Huíla province adopted CCA/SLM practices.[3] In coordination with the IDA and the provincial Directorate of Agriculture, CCA and SLM practices covered around 7 850 small farmers in the provinces of Huíla and Cunene (FAO, 2022b). Nevertheless, the evaluation highlighted that as of February 2023, a total of 163 329 beneficiaries were covered by the CCA/SLM practices promoted by MOSAP II, IRCEA, FRESAN and SAMAP projects recently implemented or ongoing in Angola (see Table 3).

Table 3. Combined outputs by MOSAP II, IRCEA, FRESAN and SAMAP projects as of February 2023

Output	Total achieved
Farmer Field Schools established	5 198
Producer groups created	255
Master trainers trained	198
Facilitators trained	4 032
Chitakas constructed	134
FFS who received reinforcement funds	4 071
Total beneficiaries	163 329

Source: Data retrieved from the FAO FFS platform.

76. Under this Component 2, training of master trainers, FFS facilitators and resilience technicians in CCA/SLM techniques, FFS methodology, good practices, Chitaka system and data collection using Kobo Collect equipped project personnel for delivery under demanding circumstances.

77. Involving other partners in IRCEA activities contributed to greater outcomes in selected project indicators:

    i. 94 government master trainers from the Ministry of Agriculture and Fisheries were trained in FFS methodology under MOSAP II, SAMAP, FRESAN projects in conjunction with IRCEA & Agroecological Centres, compared to only 18 from IRCEA alone. This

[3] Initially, a target of 115 000 target was set up considering that FFS have already been established in Bié, Huambo and Malanje provinces through the MOSAP II project and assuming that IRCEA would be implemented in all four provinces (including Huíla) and support around 5 150 FFS overall, which means that around 154 500 farmers were expected to benefit from the project and among these, 75 percent of FFS members would adopt climate resilient technologies/practices, which is equivalent to at least 115 000 farmers.

joint intervention between IDA-the Institution for Veterinary Services and FAO's technical assistance allowed for more comprehensive training.

ii. 2 813 facilitators were trained to implement self-training sessions on market access, marketing, value chains, transformation and FFS monitoring system using the FFS methodology, compared to only 234 facilitators trained by the IRCEA project alone.

iii. 5 156 FFS were implemented across seven provinces (Huambo, Malanje, Bié, Huíla, Kwanza Sul, Cunene and Namibe) by IDA with FAO's technical assistance, compared to only 185 FFS implemented by IRCEA alone.

iv. 383 new farmer groups were sensitized and mobilized by the joint IDA-FAO team, in partnership with local authorities in Kwanza Sul, Huíla and Namibe provinces, for implementing FFS.

v. 104 new FFS, though lower than the 128 established by IRCEA alone, were reinforced with start-up funds for FFS programs under the SAMAP Project in Kwanza Sul and Huíla provinces.

78. The achievements highlight the value-added of strategic partnerships FAO established mainly under IRCEA's Component 2. The joint outcomes with other innovations, including the Agrobiodiversity Atlas and SPAA, demonstrate the significance of these partnerships.

79. The evaluation found a successful FFS in Impulo, Quilengues, producing onions through improved irrigation technology. FFS fields across four municipalities showcased onions, beans, cabbage, maize, and tomatoes using CCA/SLM practices. However, key informants in Quilengues highlighted the negative impact of high FAO personnel turnover, with those starting the project facing difficulties, while 2022 joiners lacked context. Despite this, knowledge was transmitted, though not all schools reached the same development level.

80. As technicians rushed to implement FFS methodology, introduce the Chitaka model, oversee infrastructure, and refresh on CCA/SLM topics, they and master trainers could not transmit all knowledge. Instead, they selected crucial topics to help communities maintain good practices without external assistance after the project. In Quilengues, priorities were: i) seed selection; ii) economic analysis; iii) pest/disease control; and iv) land choice – challenges farmers often face leading to crop changes.

81. "Chitaka", an Angolan word for "small vegetable garden", is an integrated agroecological production model inspired by Brazil's "Mandala" concept. Promoted by the Ministry of Agriculture and Fisheries with FAO, the European Union, and partner support, Chitaka improves the FFS learning space by incorporating a demonstration plot alongside the experimental plot. It demonstrates an integrated system with water, plant, and animal management. A Chitaka has a central area, four parcels for: i) vegetable crops with drip irrigation; ii) poultry and small ruminants; iii) soil-fixing plants; and iv) production area. Local artisans construct Chitakas, while FFS members manage/maintain it, with a facilitator providing weekly briefings to 25-30 members (UN Angola, 2022).

82. Coordination between master trainers and resilience technicians at project sites was crucial in defining priority training topics and implementing a sustainable FFS exit strategy, as recommended by the MTE due to the short remaining timeline. FAO aimed to provide farmers with a basic subsistence model they could later scale up. To this end, basic agroecology, climate resilience, seed multiplication, organic fertilizers, and water management practices were prioritized as key for FFS progression.

83. The project team's directive to establish basic components – a multiplication plot, production section, composting area, demonstration plot, main assembly area (Jango Principal) for adults, and children's playground – was replicated across all four municipalities. At the time of evaluation, the Chitakas were at different stages of completion, with most having installed drip irrigation systems.

84. The FAO Chitaka model has served as a catalyst to re-engage farmers after lengthy project interruptions (UN Angola, 2022). It is believed FAO aimed to innovate around the resilience theme through this model. The IRCEA FFS underwent similar group integration training as MOSAP. However, FAO recognizes partner criticism regarding the local context, since Angolan farmers are naturally scattered, and the culture of working together is still weak, hindering cooperative evolution.

85. Under Outcome 3, a Presidential Decree on the National Environment, Climate and Biodiversity updated the National Committee, allowing IRCEA to engage with the Ministry of Culture, Tourism and Environment to support sectoral meetings and create a task force. A legal opinion was commissioned to support the strategy for integrating CCA into sectoral public policies. However, the enabling conditions for this integration were not achieved within the lifetime of the project and remains an ongoing task. Nevertheless, FAO made effort to engage with the provincial government of Huíla to issue 54 community land titles. The inclusive land and natural resource management systems are being implemented in the target municipalities in line with the activities undertaken in FFS.

86. It should be noted that the activities to mainstream CCA into national policies were ineffective as they relied on ad-hoc measures such as: i) hiring an international consultancy to draft the strategy; and ii) CNAB meeting quarterly for the project to use notes to create a task force. However, the project succeeded in: iii) conducting climate vulnerability assessments; and v) land delimitation process in Chicomba, Caconda, Caluquembe and Quilengues, as FAO and partners had more control over these actions.

87. Under Outcome 4 the digitization of the M&E system through the FFS Platform and Kobo Collect tool enabled faster, more effective data access and reduced paper use. 28 technicians and master trainers, including from agricultural development stations (EDA), were trained to operate the new digital FFS Management Information System using Kobo Collect, providing timely data availability. With IRCEA support, an illustrative catalogue (Agroecological Atlas) of plants with agroecological and medicinal potential was developed. Guidelines for establishing agrobiodiversity canters were also created in the four municipalities. The FAO team georeferenced all 185 IRCEA FFS uploaded to the Management Information System. The process is now extending to the other 5 013 FFS in the country from projects like MOSAP II, SAMAP and FRESAN under the IDA. This will consolidate information on location, members, establishment date, development stage, training topics, and total investments into one FFS executive dashboard.

Finding 6. The project has sustainably strengthened the country's capacity to minimize climate risks, especially through face-to-face trainings of staff and facilitators. The capacity of the Agrometeorology division has improved remarkably. The Government of Angola has modernized INAMET's services, complementing IRCEA's support. FFS and FAO teams enhanced skills in agroecology, seed saving, biochar and composting.

88. The project restored INAMET's capacity by consolidating historical climate archives (1971–2000) and the meteorological database (2005–2015). This helps the government map climate change effects, patterns, severity, frequency, and geographic incidence to forecast floods and droughts, informing disaster response plans. The agriculture sector is expected to benefit from information

on rainfall, moisture, and crop phenology to enhance food security efforts. Agroecological stations under construction in Huíla will provide weather reports to help FFS plan crop seasons and mitigate weather-related losses.

89. IRCEA was a landmark as the first project to upload all its FFS into the national management information system. It introduced the previously unknown locally SPAA, which analysed the environmental and productive situation of farming households in Caluquembe, Caconda and Chicomba municipalities. The SPAA brought research closer to the field, helped understand crop rotation, soil patterns, harvests, and scientifically validated indigenous agroecological knowledge. This enabled FAO to leverage and improve local knowledge for the FFS instead of just imposing untried scientific knowledge.

90. Key informants and FGD participants, the SPAA tool greatly helped FFS facilitator activities. Communities understood resilient agriculture was possible using local organic products for soil correction, water management, moisture retention, and other CCA/SLM techniques disseminated by IRCEA. In-depth diagnostics were necessary to transition farmers from traditional to agroecological practices. Involving local students specialized in environmental areas like hydrology, botany and zootechnics ensured knowledge of the SPAA methodology remained in communities.

91. The project innovated agricultural research by producing an illustrative Agroecological Atlas cataloguing plant and wild fruit species with proven agroecological and medicinal value to improve nutrition of vulnerable groups like children under five and pregnant/lactating mothers. Guidelines were created for establishing agrobiodiversity canters in four municipalities, benefiting local FFS as a reference for trainers, facilitators, and extension agents. Previously, this knowledge existed locally but was neither documented nor exploited.

92. Prior to the FAO project, analysing climate change in Angola was extremely difficult due to lack of recent data to understand climate variations. INAMET underperformed in providing meteorological services to economic sectors due to financial unsustainability, destroyed infrastructure from the civil war, and limited human capacity. There was also lack of coordination between INAMET and partner institutions relying on meteorological data, as INAMET could not provide tailored sub-national information to sectors like food security, water resources, fisheries, industry and energy.

93. INAMET and GSA personnel were trained on agroclimatology, including remote crop monitoring and vulnerability assessment. FAO provided equipment like computers and cameras. Two technicians were hired and trained, along with another for data retrieval continuity. INAMET received training on archiving historical meteorological/hydrological observations. However, the planned third phase of peer and farmer training did not occur due to implementation issues and institutional changes.

94. The technical capacity building and equipment supply to INAMET for rescuing historical meteorological data through satellite imagery has been completed. Meteorological data rescue from IRCEA project sites was also done. Next steps are nationwide data rescue by INAMET, forecasting climate vulnerability scenarios, and designing action plans with adaptation and mitigation measures for climate change impacts. The project's technical staff prioritized completing the FFS training curriculum within the time extension, highlighting gaps the project could not address regarding rainfall data collection by farmers and agricultural marketing. While the master trainer training included marketing, this evaluation covers FAO's SAMAP

implementation in Cuanza Sul and Huíla on agricultural commercialization to complement those linkages and ensure additionality.

95. The Government of Angola has modernized INAMET's services, complementing IRCEA's support. This includes installing automatic weather stations and planned "Robotsonda" radio stations in 2023. FAO continued providing technical assistance to INAMET through other funding to build on IRCEA achievements. In 2022, 15 technicians from the Ministry of Agriculture and Fisheries and INAMET were trained on the Digital Agricultural Drought Monitoring Tool through FAO's Green Climate Fund assistance.

Finding 7. GSA and INAMET are collaborating to issue a joint agrometeorological bulletin, instead of separate reports. However, the current weather data and agricultural information are not well adapted to better suit farmers' understanding and utilization.

96. Agricultural stakeholders recognize the need to install agrometeorological stations to record rainfall and establish a mechanism to collect meteorological and phenological crop data for comparison with satellite input. Meanwhile, the Ministry of Culture, Tourism and Environment's climate change strategy (ENAC 2020–2035) has mitigation and adaptation pillars, with key actions on sustainable agriculture, food security, ecosystem protection and drought/flood risk management. The Ministry of Culture, Tourism and Environment intends to focus on adaptation, climate resilience and sustainable agriculture projects in the upcoming GEF cycle 8.

97. Prior to the project, the Ministry of Agriculture and Fisheries and the Ministry of Culture, Tourism and Environment were part of the Food and Nutrition Security Council's joint coordination under the National Strategy for Food and Nutrition Security (ENSAN) framework (Government of Angola, 2009), with the Ministry of Culture, Tourism and Environment participating in the policy and legal framework technical committee. However, it was under IRCEA that the two ministries had a more intertwined role, as Components 1 and 3 cut across their portfolios, leading to their prominent roles in the project's steering committee.

98. As part of building a national climate database, IRCEA attempted to integrate GSA's network into INAMET's database, using INAMET's protocol with UNITEL for subsidized data transmission from weather stations to INAMET's data centre. The aim was to improve data collection, processing, and storage. However, these efforts could not be fully accomplished during the project lifetime due to the 2022 government restructuring. Hence, the ongoing GSA-INAMET collaboration pursues the objective initiated under IRCEA.

Finding 8. The project generated new knowledge on climate change adaptation and sustainable land management practices for farmers and technicians. FFS members demonstrated mastery of these practices in the demo plots. However, it is unclear how well farmers are replicating the technologies on their own farms.

99. The definition of "adoption" for Outcome 2 is unclear – whether it refers to using new skills in the collective FFS Chitaka or on individual farms. There is an information gap to conclusively determine adoption. While some farmers and technicians suggested new technologies are being individually applied, this evaluation doubts the effectiveness of those claims given the short timeframe for establishing integrated agroecological Chitaka systems.

100. In Chicomba, one farmer was observed applying organic pesticides and other climate-smart techniques on their smallholder farm. More farmers may be adopting these practices, as master trainer training at Wongo Agricultural Centre included practicing agroecological techniques on individual farms.

101. Key informant interviews confirmed the project team visited four FFS members who adopted new methodologies on their farms, with extension agents aiding. However, the existence of individual climate-smart production systems in households could not be verified.

102. While this evaluation could not extensively verify the adoption of climate-smart farming techniques on individual farms beyond a few cases, testimonies from extension technicians suggest some farmers have changed their practices based on what they learned in the FFS.

103. Like other municipalities, farmers at Valodia FFS in Caluquembe described techniques learned from the project including mulching, 50/40 compass sowing, crop rotation (corn/beans), varying crops seasonally, seed banking, composting for natural fertilizer, making pesticides from local plants, land measurement/plotting, and proper spacing/intercropping for cassava and soybeans. A member of an FFS in Caluquembe municipality told the evaluation team that "The project's new techniques are better and more effective. Chitaka's arrival was very advantageous - a good experience. We now practice these techniques in our fields. It strengthened the concept of group work, unlike before when we worked alone." The opinion of another IRCEA participant is as follows "In Quilengues, I learned a lot from cultivating beans. It was said beans could not grow in the dry season due to heat and lack of rain. However, when tested, excess rain hindered bean development, but with normal watering, farmers managed to produce. The same occurred with the local 'ECA Feijão' FFS in Cunene."

104. In Chicomba, beans sold for much higher prices (equivalent to USD 0.72/kg) than corn (USD 0.12/kg). Farmers were going to abandon corn production, but the FAO extension agent persuaded them to grow both crops for consumption and sale. The technician advised four aspiring farmer entrepreneurs to aggregate 4-5 producers to facilitate production flow. Technicians were instrumental in experimenting with new techniques. Farmers' willingness to learn contrasted criticisms that locals are aid-dependent and unwilling to produce.

105. Farmers now better understand climate change's effects on agriculture. Providing irrigation technology allows them to draw water from rivers and underground sources, minimizing shifting cultivation. In Caconda, FFS members explained that due to low rainfall and rivers, along with insufficient dew, irrigation systems are required for farming. Recently, a nearby community's crops were damaged by hail.

106. The partnership with academia facilitated mutual learning between local farmers and students, like farmers and FAO technicians. In Caluquembe, farmers initially doubted the project when interviewed by student researchers. Doubts dissipated when researchers explained using medicinal plants to treat illnesses like diarrhoea, fever and vomiting. In turn, community members taught researchers about local cultural habits.

107. Most newly established IRCEA FFS learned new production techniques from the project. However, farmers could not specify how those techniques improved cereal crop outputs, as the techniques were still new to them, except for some already established FFS.

108. In Caconda, members of a 2019 local FFS said they adopted IRCEA's agroecological techniques on their farms. However, they could not yet determine if production increased, decreased or stayed the same using the new techniques. This was their first full crop season with these techniques, and they had not harvested maize to assess the difference.

109. From previous vegetable sales, one FFS reported earning 16 000 Kwanzas (USD 19.31) in income. Farmers could not predict their 2022–2023 agricultural outputs due to inconsistent attempts since 2019 without consistent technical assistance, compounded by COVID-19 pandemic setbacks.

However, establishing the Chitaka methodology in 2022 and deploying locally based FAO resilience technicians restored farmer participation and optimism for positive 2022–2023 harvests.

Finding 9. FAO successfully got the IDA to adopt the FFS approach, use it to reinforce rural extension methodology, and seek FAO's collaboration to embed FFS into the framework of national agricultural policy. The Organization has also leveraged good government relations to showcase the project's agroclimatic resilience agenda through national-level policy discussions until 2021. However, this momentum was lost due to government structural changes after the 2022 elections.

110. IDA expressed satisfaction with collaborating with FAO on using FFS to strengthen rural extension methodology through letter 44/37/GAB.DG.IDA/2019. This justified the Ministry of Agriculture and Fisheries' choice of FFS as the model for promoting family farming in Angola. Consequently, IDA requested FAO's support to institutionalize FFS in the country's policies.

111. The project document states that the Government of Angola endorsed and backed the project's identification and design, officially expressed in writing by the Ministry of Environment to FAO. The government pledged sectoral institutions' commitment to be involved in project preparation and implementation. This support motivated FAO's initiative. However, cabinet changes following two elections undermined the government's initial commitment.

112. Responding to IDA's request to institutionalize FFS in Angola, FAO participated in the 2021 Climate Roundtable. FAO presented on climate-smart agriculture under IRCEA, involving project technicians in preparatory activities. Angola's National Climate Change Strategy was presented. The project and FAO actively participated, as the Ministry of Environment was still the government interlocutor in 2021.

113. Institutional challenges arose when the Ministry of Environment was restructured into the Ministry of Culture, Tourism and Environment in 2022. This disrupted the dynamic FAO had promoted through IRCEA, involving discussions on Angola's National Climate Change Strategy and climate-smart agriculture, which was one of IRCEA's outputs. The restructuring disrupted the momentum built around these discussions.

114. The Climate Roundtable provided an opportunistic platform for IRCEA to disseminate its agenda on agroclimatic resilient livelihoods. The forum involved over 40 participants, including international agencies, government institutions, the Ministry of Foreign Affairs and the then Ministry of Environment. The Roundtable was a national strategy to help achieve project objectives under this component, but those hopes faded after the Ministry of Environment 's restructuring in 2022.

115. FAO developed an FFS user guide to institutionalize FFS into national policies. The guide offers 15 years of FFS implementation experiences and lessons, stressing institutionalization needs (Hurtado, 2020). It outlines five innovative proposals toward this end. The figure below shows the accomplishment degree of each FAO-formulated proposal.

Table 4. Status of FAO proposed actions for institutionalization of Farmer Field Schools into public policies

FAO Proposal	Status	Evidence/institutional arrangement in place
Involve academia (universities, polytechnics, technical schools) and applied research centres in training rural extension technicians, facilitators, and farmers through field schools.	Done	Training curricula at the José Eduardo dos Santos University in Huambo, Wongo Agricultural Training Centre (Bié) ISPT (Lubango)
Strengthen territorial approach to aggregate FFS services like processing, commercialization, climate adaptation solutions, and increasing producer family resilience.	Not yet accomplished	N/A
Strengthen monitoring and evaluation system for rural extension services expansion. Use efficient FFS evaluation protocol and quality standards to enable appropriate quality assurance decisions.	Partially accomplished	National electronic FFS portal design and data entry done for IRCEA project; process ongoing for other projects´ FFS.
Strengthen collection and availability of FFS results and impacts data. Format the monitoring and evaluation system to focus on determinants, collect intervention impacts, and contrast them with processes. This would improve knowledge management and FFS impact.	Not yet accomplished	Same
The Lubango Herbarium (ISCED) has a scientific collection resulting from the FAO agreement, including the project-funded Agrobiodiversity Atlas and a catalogue of agroecologically important plant species.	Done	The Lubango Herbarium (ISCED) has a scientific collection resulting from the FAO agreement, including the project-funded Agrobiodiversity Atlas and a catalogue of agroecologically important plant species.

Source: Elaborated by the Evaluation Team.

116. On FFS institutionalization into national policies, the Angolan government adopted FFS in 2022 as a blueprint for family agriculture development, with the Agreement for two development projects namely, MOSAP 2 and SAMAP. This needs to be reviewed. Some agricultural institutions[4] consider practices need instruments like a technical assistance strategy, reinforced IDA support, and secure funding to be embedded into policies. Currently, IDA champions institutionalization with FAO's support, but there is a missing link with financial institutions for continued funding.

117. It is worth remembering that the project was affected by the 2017 and 2022 general elections in Angola, leading to government restructuring with new political leadership and senior personnel changes in the three ministries piloting and coordinating IRCEA. This impacted project focal points across the state administration. The nationwide rollout of the farmer field school production model was likely curtailed by high-level political changes in Angola since 2022, leaving the project unsupported at the central level by the new political structure.

118. IFAD and the French Development Agency (AFD) Smallholder Resilience Enhancement Project (SREP) is ongoing, and the World Bank has supported FFS expansion in southern Angola. This

[4] The Wongo Institute's master trainer curriculum provides second cycle FFS with skills on managing membership fee funds. It's unclear if training included other funding sources like savings/revolving credit that FAO incentivized elsewhere, in addition to FAO's start-up fund, to ensure FFS financial sustainability beyond FAO/GEF funding.

implies visiting existing FFS established by IRCEA. The current government sees agriculture as the basis for economic diversification, but there is no concrete action plan yet, only hope.

Finding 10. Four years into IRCEA, Angola formulated key national policies on agriculture and fisheries and the project missed the opportunity to influence those instruments. The stop-start negativity experienced during implementation, the absence of a specialist in national policy engagement in the project team and the need to consolidate certain resilient agroecological practices and methodologies linked to FFS, may have hindered the integration of CCA/SLM into policies. national.

119. In 2020, Angola approved the PIAAPF 2020/2022 through Presidential Decree n. º 227/20. The Plan aims to mitigate COVID-19 pandemic effects, reduce oil dependence, promote inclusive sustainable economic growth, ensure food/nutrition security, and increase production/investment in key value chains. However, apart from briefly mentioning FFS expansion, the plan does not integrate CCA/SLM, or the integrated production model advocated by IRCEA.

120. The evaluation noted IRCEA's contribution to family agriculture is not visible in the important PIAAPF national policy, despite: i) the project's smallholder farmers being engaged in nine of the 18 value chains PIAAPF aims to promote; ii) Huíla province, IRCEA's headquarters, being a PIAAPF target area; and iii) FAO being the only non-governmental organization part of the PIAAPF institutional task force.

121. The lack of a national policy engagement specialist in the project team may have hindered the integration of CCA/SLM into national policies. This issue worsened after the 2022 elections, as former project focal points were displaced, making it difficult to continue engagement due to institutional mergers and the need to onboard new officials. Although the project document envisioned hiring experts for mainstreaming climate change into sectoral programming and budgeting (Component 3), high staff turnover left this component without a dedicated full-time staff person to navigate government bureaucracies toward that objective.

122. From an academic point of view, certain resilient agroecological practices and methodologies linked to FFS deserve to be consolidated with farmers before integrating the approach into government policies. The existence of different FFS typologies, especially those from MOSAP II and FAO's IRCEA project in Huíla province, highlights the need to harmonize agroecological methodologies embedded in national rural development policies. Interviews in Huambo revealed that unlike IRCEA's emphasis on researching and raising farmer awareness of soil-improving plants/combinations, other partner projects in Longonjo and Chinjenje do not prioritize soil correction, despite studies showing southern Angola's generally ferralitic soils require prior study before use. Additionally, some projects promote using chemical fertilizers to maximize food production, which could ultimately affect soil physicochemical properties, unbalance microbial flora and damage the ecosystem if not properly managed.

123. According to a respondent in Chianga, Huamba: "Knowledge of the new techniques is still experimental, so it is too early to integrate it into government policies. The government's own policies lack efficiency - there is a three-year ban on logging, yet log trucks pass through daily. More follow-up is needed, and more time for people to consolidate the knowledge retained from the project." This view was also substantiated by discussions in focus group with technical personnel in Huíla province. Indirectly, low buy-in to project results by central government officials could indicate that they felt unprepared to advocate for the adaptation of rural development policies to aspects of CCA/SLM. The lack of defined sustainability strategies with clear responsibilities has hindered consolidating and retention of the results from baseline projects. Key informants pointed to RETESA, a former Ministry of Environment project, which has achieved many things, but stakeholders admit that none of those achievements currently exist.

Finding 11. The IRCEA project could have had a greater impact on livelihoods and visibility as a pioneering initiative if FAO had leveraged the project's integrated Chitaka production system innovation. This system mainstreamed CCA/SLM practices into local agricultural systems. However, FAO missed the opportunity to establish IRCEA as a national "centre of excellence" in Huíla province by failing to tap knowledge from other agriculture projects to fully implement IRCEA's approach.

124. The GEF M&E Policy (2010) notes the importance of knowledge sharing to capitalize on lessons learned. FAO's 2022 Annual Report highlights their involvement in: i) training 21 technicians on operationalizing the National Forest Monitoring System for agricultural insurance and drought monitoring under a Green Climate Fund initiative; and ii) training technician brigades on using the "eLocust3" application for pest control and monitoring in remote areas. However, FAO did not integrate these various interventions in one province, which could have potentially amplified their impact.

125. FAO had previous partnerships with the José Eduardo dos Santos University in Huambo and Wongo Agricultural Training Centre (Bié), as well as new partnerships with ISPT and ISCED. Coordinating with IDA and MOSAP II could have helped FAO draw lessons to add value to the IRCEA FFS in Huíla province. Concentrating experiences from other provinces and partner projects around the new Huíla FFS, instead of scattered interventions, could have been beneficial. The case of a non-IRCEA FFS below offers some lessons FAO could have capitalized on.

126. Angola has four agroecological centres. A project is underway with the African Development Bank (AfDB) to integrate climate action into agriculture. In the upcoming GEF funding cycle 8, resilience in agricultural systems will continue to be a government priority.

Box 2. The case of the Longonjo Farmer Field School/Cooperative in Bié Province

Longonjo FFS/Cooperative location: Kwito municipality,
Funding agency: World Bank under the Family Farming and Commercialization Project (MOSAP II)
Humble beginnings, growth and challenges:
An FFS started in 2018 with 35 members, now has 90 members and became a cooperative in 2020. MOSAP II establishes a 2.5-year cycle for FFS graduation.
Previously, they planted 5 kg of seeds per plot with very low yields – a problem the surrounding community still faces. The FFS learned proper thinning techniques, planting 1–2 seeds per cluster and making seed selection. They share this knowledge with neighbouring farmers who observe their use of BIOL organic fertilizer, explaining its composition and benefits.
MOSAP II has implemented a community fund that provides credit, not grants. Members borrowed money and repaid with 20 percent interest to invest in inputs.
The FFS had an initial fund of 5 million kwanzas (USD 6 013). They provided 1.7 million kwanzas (USD 2 045) as credit to members, who repaid it with 20 percent interest. Members used this credit for land preparation of land and inputs. On 6 hectares, the FFS produced 75 tonnes of potatoes. IDA facilitated a contract that allowed them to sell the potatoes for 260 kwanzas/kg to a buyer.
On 6 hectares, the FFS produced 75 tonnes of potatoes in one season. IDA facilitated a contract to sell the potatoes for a good price per kg.
Key lessons appear to be around effective FFS training on improved techniques, access to affordable credit for inputs, and facilitation of market linkages – lessons FAO could have capitalized on for IRCEA.
Regarding the seed bank, the cooperative provides seeds from their production to beneficiaries, who return the seeds with interest. The seed bank was created to support other FFS who need seeds, instead of traveling to the city. For every 50 kg of seeds received, beneficiaries return 75 kg.
Structural challenge:
In 2020, the FFS produced 5 tonnes of onions. They transported some to Menongue to sell, receiving 400 000 kwanzas (USD 401.6), but paid 120 000 kwanzas (USD 144.32) for transport costs. Preferring to sell locally, they sold the remaining onions for 300 000 kwanzas (USD 360.79).

127. Despite not using CCA/SLM practices, some FFS from the MOSAP II project in Bié and Huambo provinces have consolidated their structures and achieved notable success. In Longonjo

community, Bié Province, there were more than four FFS that have all graduated from the programme.

Finding 12. The project generated some unplanned positive social benefits: providing temporary employment for local artisans constructing Chitakas in four municipalities in Huíla province, creating new knowledge for FAO resilience technicians who initially expected only to teach farmers but also learned from them, and facilitating unlikely market linkages between FFS and agricultural wholesalers.

128. The construction of the 120 Chitaka integrated agroecological production systems (18 in Caconda, 69 in Caluquembe, 22 in Chicomba, 11 in Quilengues) funded by the project generated temporary employment for approximately ten permanent local construction technicians and an unspecified number of local assistants in all municipalities. FAO recruited skilled locals in areas such as zootechnics, horticulture and irrigation to set up the Chitakas. Employing people from the region has brought much-needed cash flow while also fostering local ownership attachment to the Chitaka infrastructure. With the continuation of the construction of Chitaka in Huíla province and expansion to other provinces through projects such as SAMAP and FRESAN, it is likely that local artisans who provided services under IRCEA will be contracted for the construction of new Chitakas in the future.

129. Beneficiaries from the temporary employment were able to do with some lasting investments with the money they earned from the project including improving housing and purchasing motorcycle for passenger transportation (moto-taxi).

130. In Quilengues and other municipalities, the "learning by doing" approach in FFS has often resulted in reverse learning, where FAO resilience technicians have learned from farmers. For example, in areas where sorghum is the main crop, unlike millet-dominant Cunene, technicians learned how to make biochar from farmers and discovered locally adapted, drought-resilient crops such as peanuts that were new to them.

131. The resilience technicians underwent social and technical learning. Socially, they had to adapt to new cultures and overcome cultural shocks to build effective community relationships. Technically, there was productive knowledge exchange – in the FFS demo plots, technicians encouraged farmers to bring native crop varieties alongside FAO-provided seeds. This enabled comparing crop resilience, demonstrating differences to FFS members, and facilitating mutual learning between technicians and farmers.

132. The biochar production technique deeply impressed technicians and farmers due to its effects when mixed with compost – improving soil texture, structure, water retention, and nutrient distribution. While communities had velvet beans locally for other uses, technicians advised using them for nitrogen fixation in soil, as mulch, and green manure. This exchange of knowledge on sustainable soil management practices proved highly impactful for both the resilience technicians and communities.

133. In Caconda and a few other municipalities with steady FFS production, farmers initially sold vegetables locally. This attracted wholesalers and buyers from Caluquembe who demanded more supplies. Without a formal market information system, this informal arrangement linked demand and supply while ensuring social inclusion.

Finding 13. The project built a strong foundation by leaving behind a broad scientific collection on CCA/SLM practices at the Lubango Herbarium (ISCED), a holistic agricultural training curriculum at the Wongo Agricultural Training Centre in Bié, and skills developed at the Faculty of Agricultural Science at José Eduardo dos Santos University in Huambo. This contributed to mastering these skills by key players including FFS master trainers, resilience specialists, facilitators and ultimately farmers.

134. Angola's Lubango Herbarium houses the third largest ornithology collection in Africa, after two in South Africa. The significant scientific work by ISCED and ISPT, and the need to publicly display this material, led them to partner with the Moçâmedes National Railway Company. The Moçâmedes National Railway Company donated its former railway station to house the scientific collection developed with IRCEA's support.

135. Through IRCEA, FAO funded the development of at least three new products nearing completion during this evaluation: an Agrobiodiversity Atlas[5] to be hosted at the Ministry of Environment, a Climate Database at INAMET, and an FFS portal expected to inform future operations.

136. FAO resilience technicians targeted peasants whose daily diet consists of funge (maize meal). With ecological agriculture focusing on nutrition, they learned that the only way for farmers to diversify their diet is through intercropping, which requires good agricultural practices for both vegetables and staple cereals.

137. Other important future reference products include: i) the FAO Manual for FFS Chitaka Infrastructure Construction, providing technical details on the ideal site and standard measurements for the main hut, creche, kitchen, and stove specifications; and ii) a practical guide on the Chitaka agroecological integrated production system, developed by FAO and the IDA.

138. Both products systematize the knowledge generated through IRCEA and inform new FAO/government projects, such as knowledge pools for farmers, associations developing Chitakas, and contractors specializing in infrastructure building. Specifically, the Chitaka guide helps replicate the new agroecological methodology in public agricultural extension, an innovation implemented in FAO's FRESAN project co-funded by the European Union.

139. The project capitalized on two workshops during this terminal evaluation in May 2023. The ISPT service provider leveraged the Government of Angola's Biodiversity Fortnight in Lubango to present research results on 'useful plants of Huíla', following research conducted in Caconda, Caluquembe and Chicomba municipalities under an agreement with FAO. This event was organized with partners from FAO, the United Nations Development Programme, the European Union and Instituto Camões.

140. The Biodiversity Fortnight event was an appropriate means of raising public awareness of climate change. In addition to presenting research results, it aimed to raise awareness of biodiversity preservation and promote engagement with global biodiversity framework principles. The workshop generated great interest from participants in acquiring the illustrative catalogue of agroecologically important plant species exhibited. At the time of this evaluation, the catalogue awaited FAO cataloguing prior to public release.

[5] The Atlas classifies plants according to their use.

4.5 Sustainability

Rating: Moderately Unlikely

Finding 14. There is strong government interest and engagement through IDA, EDAs and municipal administrations in institutionalizing and expanding farmer field schools countrywide. However, risks exist, as some populations in the South have become accustomed to receiving free inputs from pre-IRCEA projects, which may negatively influence the adoption of production concepts introduced by the IRCEA project if there is no support afterwards.

141. Most policy-level stakeholders pointed to IDA (at central level) and EDAs (provincial/municipal levels) as pillars for sustainability, providing technical assistance and agricultural inputs to farmers. IDA has coordinated with IRCEA and expressed its intention to expand the project's activities nationwide. Proponents cite ongoing government initiatives, such as "Polígonos Florestais"[6] (forestry plantations) observed in Bié, as evidence of political willingness to scale up agroclimatic resilient practices envisioned for the future of Angola's agricultural development.

142. FAO senior management sees potential for continuation of project results, as in the Huíla region there are two other FAO projects (FRESAN and SAMAP) focusing on farmer field schools or related aspects. There is also hope for continued government investment through the upcoming MOSAP III project, which is expected to cover all provinces, based on the farmer field school methodology. The table below shows the combined outputs of all FAO and government projects being implemented in the country under the farmer field school methodology:

143. According to this view, the IRCEA FFS emphasizing CCA/SLM around the Chitaka production system are likely to last longer, at least 2–3 years. They will be part of the preparatory process for upcoming projects as IRCEA is the first with this type of CCA/SLM-focused FFS model. With RETEZA completed long ago, and IRCEA replicating the MOSAP FFS approach in southern Angola while SAMAP is still new, the IRCEA FFS of Huíla province will become the only reference point where future investors can validate the methodology.

144. The Government of Angola overlooked the IRCEA project when planning subsequent initiatives. Despite IRCEA's different approach, failing to establish synergies with the Commercial Agriculture Development Project (PDAC)[7] not only contributes to donors working in silos within the same provinces, but also compromises sustainability of efforts.

145. Agriculture is seen as a key sector for economic diversification. FAO is confident that most advanced IRCEA farmer field schools will serve as valuable social capital, with Huíla province being a government priority for climate change response efforts in southern Angola.

146. Key government entities, such as GSA, acknowledge the project's early outputs in setting up farmer field schools and employing extension agents who taught agroclimatic techniques in local languages. However, these institutions do not know whether local communities are still applying the knowledge acquired, creating doubts around continuation of post-project outputs. To ensure

[6] The "Polígonos Florestais" degraded during the civil war period. However, the new Bill 42/19 (March 2023) aims to reinstitute regulated exploitation, promote beekeeping by training 1 050 beekeepers, install 30 500 hives to produce 630 000 kg of honey annually.

[7] The *Projecto de Desenvolvimento à Agricultura Comercial* (PDAC) is a EUR 185 million project (2019–2024) funded by the World Bank and French Development Agency, aimed at increasing productivity and market access for selected beneficiaries in six provinces including Huíla. It covers value chains like maize, soya and beans, which are also priorities for the FFS members in Huíla under IRCEA.

sustainability, GSA recognizes the need for government action to absorb and sustain the project's outputs while the field schools are still active.

147. There are questions as to whether IRCEA sufficiently considered the different cultural aspects across the country and aligned with the government's social protection initiatives impacting livelihoods in Huíla province. These factors may have affected beneficiary buy-in to the new production concepts introduced by the project.

148. It has been pointed out that some populations in the South (e.g. Quilengues) have become accustomed to receiving free inputs from previous projects before IRCEA. Technicians acknowledge that the implementation of field schools in the South aims to change the sedentary lifestyle, but the perceived habit of receiving handouts was a major challenge to motivate beneficiaries, as some see no reason to continue the efforts while expecting cash transfers from the government's KWENDA[8] social protection programme.

149. A contrasting view indicated that the problem is not so much the habit of receiving handouts, but rather poor community consultation in project design. A thorough consultation could help identify the underlying community hardships. For example, in Cunene (which is not part of IRCEA), the implementation of a project that goes against the local pastoralist culture creates initial resistance before eventual adoption. FAO senior management acknowledged the need to improve project design through the involvement of all partners and better alignment with local contexts.

150. FAO senior management is aware of the challenges in implementing FFS due to different local typologies. In Caluquembe, the approach differs because of existing land protection measures, so local producers are less likely to be nomadic. However, in general, farmers tend to be nomadic, which poses difficulties for the FFS approach.

Finding 15. The project established partnerships with ISCED, ISPT and ADRA to enhance sustainability, primarily addressing Component 2, but lacking formal agreements in other components.

151. Like the MTE (2019), the Evaluation Team found evidence of outcomes from active partnerships during the evaluation, such as plant/vegetation catalogues used by some FFS for soil correction, pest/disease control and consumption. These resulted from agreements with ISCED and ISPT.

152. These agreements demonstrate FAO's compliance with the recommendation of the MTE to strengthen partnerships with national institutions and reduce reliance on international consultants. Additionally, the October 2019 meeting of the PSC urged FAO to create synergies with public and private institutions for greater sustainability of interventions.

153. In 2017, FAO signed an agreement with ADRA to strengthen the capacity of municipal, provincial, and civil society administration in Huíla province on participatory land delimitation and legalization of rural communities. It resulted in training 30 master trainers, 20 of whom were municipal technicians, on principles of protecting land tenure rights, regulations for issuing land titles, and using participatory rural appraisal (PRA) for community land participatory delimitation including community consultation, institutional arrangements, roles and responsibilities until land title issuance.

154. In 2020, FAO partnered with the International Environmental Data Rescue Organization (IEDRO), resulting in the training of six technicians from INAMET (five) and GSA (one), along with six

[8] KWENDA provides a monthly USD 12 allowance per person to over 1.5 million poor and vulnerable families, with USD 420 million in funding from the World Bank (USD 320 million) and national treasury (USD 100 million).

Mozambican counterparts, on agrometeorology in Italy. IEDRO provided equipment and assembled a meteorological database with invaluable historical data from the colonial era until recently. This database was one of FAO's greatest contributions to Component 1 amid the uncertainties and changes of the project over the years.

Finding 16. FAO implemented Chitakas to verify the adoption of practices, aiming for their long-term sustainability after project closure. However, government counterparts doubt smallholders' ability to succeed individually outside FFS due to lack of investment required for modern agriculture once the project ends. Some of them want the Chitakas upgraded to conventional infrastructure for greater sustainability.

155. FAO's rationale for the Chitaka model lies in upgrading the previous simple FFS demonstration plots into an integrated system designating space for fruit trees, animal protein, compost, and a demonstration plot typically sowing millet, sorghum, corn and beans. Adapted from the Brazilian mandala concept to the local Angolan agropastoral context, the Chitaka model shows great applicability, but its sustainability would require further consolidation for the positive intervention effects to take hold. While some government counterparts want conventional infrastructure upgrades for durability, FAO defends the Chitaka's sustainability based on its integrated, self-sustaining farming design for households.

156. Some municipal officials advocate the construction of Chitakas with conventional materials for greater durability. The evaluation team observed some dilapidated FFS jangos, with members waiting for the rainy season to harvest grass and poles for annual rebuilding. This recurring process diverts FFS members' time and effort away from production activities.

157. A risk to sustainability is that many FFS had not yet graduated from the first cycle by the time of this evaluation. FFS often achieve greater autonomy and sustainability in cycle 3 when they become Associations or Cooperatives, eligible for government funding, bank credit and legal contracts. Currently, the IRCEA FFS remain informal groups with limited self-sustainability and bargaining power.

158. The scattered settlement of Angolan farmers challenges the long-term continuation of the Chitaka model, which brings people together to work collaboratively. FAO views the positive aspect of FFS as a club-like model where groups contribute to a reinforcement fund, regardless of amount or modality, if there is an inflow of members' contributions on top of FAO's USD 300 provision. However, government counterparts doubt smallholders' ability to succeed individually outside FFS due to lack of investment required for modern agriculture once the project ends.

159. FAO acknowledged the institutional challenges FFS faced, particularly the turbulent set-up process. Initially, over a year was spent just bringing rural people together. Once groups of max 30 people were trained, FAO had hoped the government's Agricultural Extension Services (IDA) would follow up. However, realizing IDA couldn't reach all sites, FAO decided to provide municipal follow-up as the FFS were often abandoned without extension agent technical assistance.

160. Central agricultural officers acknowledge the facilities and support FFS receive from FAO, including drip irrigation, water storage, solar power, and funding. However, they wonder what will happen if farmers leave the FFS and try to replicate those systems individually. They doubt commercial banks would provide credit to isolated smallholder farmers due to the risks in agriculture and farmers' typical lack of collateral.

Finding 17. Some technology provided by the project to FFS is not suitable year-round. Informants suggested eventually replacing it to ensure service continuity. Additionally, in attempting to innovate its needs assessment tools, FAO may have duplicated underlying efforts.

161. Some municipal officials advocate the construction of Chitakas with conventional materials for greater durability. The evaluation team observed some dilapidated FFS jangos, with members waiting for the rainy season to harvest grass and poles for annual rebuilding. This recurring process diverts FFS members' time and effort away from production activities.

162. The solar-powered electric water pumps provided are unable to generate energy during winter periods, compromising the maintenance of animals and plants that depend on the pumped water. As an alternative, it is suggested to use locally available petrol pumps.

163. Some FFS, e.g. in Caluquembe, have funds in their savings to purchase spare parts and repair water pumps. However, this was an exception, as many FFS had not yet set up their accounting systems to receive FAO's start-up funding, despite having treasurers and accounting books in place.

164. FAO used a PRA to determine maize and beans as the flagship crops, with PRA being the methodology for deciding crop changes. However, the project also developed the SPAA, a new tool altogether, which may create long-term dependency for its implementation and technical assistance since it was developed under the leadership of a contracted foreign expert. This parallels the existing PRA approach, representing potential duplication.

Finding 18. Technical opinions are skeptical about the continuity of the Chitaka production systems due to the "top-down" approach used to establish them. Awareness of the project varies across government levels (national, provincial, municipal), likely influencing the continuity of project results.

165. For some key informants, only a few Chitakas will continue beyond project support due to disconnects in implementing the methodology. Extension technicians who implemented it were not involved in designing the production system. Ongoing debates with IDA officials, who will theoretically inherit the Chitakas, question the viability of these systems. This suggests underlying doubts about the sustainability of the Chitaka model, despite FAO's optimistic narrative at high-level forums, which could compromise absorption of this model long-term.

166. Farmers in Caconda echoed reservations about alternative support continuing the FFS work, stressing: "If FAO leaves us, we'll only be left with the techniques they taught us, but we don't see the possibility of a government department coming in to continue this work." (FFS members in Caconda).

167. In the IDA model, FFS technicians are transferred but facilitators remain, challenging the autonomy of FFS. Considering the critique on failing to include partner interventions in the State Budget for public funding beyond GEF support, and the lack of recognizable results from some baseline projects like RETESA, sustainability models should be thoughtfully designed, piloted and supported with tangible exit plans at present.

168. In Caluquembe, awareness raising happened through trainings and workshops. This municipality has an advantage as the municipal administrator, like Lubango's, is highly connected with agriculture and has visited project FFS. Similarly, the Caluquembe EDA director showed keen interest, participating in many project trainings and activities, bringing high project awareness among local authorities. This suggests that in some municipalities, the level of local authority engagement will be a decisive factor for sustaining results after GEF funding ends.

169. In Chicomba, a week prior to this evaluation's data collection, the municipal administrator had requested a project report with statistics on the local FFS – including progress status, topics disseminated, inputs distributed. When projects are implemented within municipalities, government officials have replicated project messages in political meetings, appealing for community participation.

170. In Quilengues, informants shared that previously agricultural directors could be appointed regardless of being agronomists, if they had political trust. Recently, there has been a change – the current director is a veterinarian with great rural development skills. This tends to be the case where administrators are agronomists by training, which adds value to the project. Similarly, past EDA officials only knew conventional agriculture, but now they possess FFS knowledge, providing more technical rather than political support.

171. FAO desires the government to take over the FFS and continue providing extension services, as IRCEA was a pilot project for IDA and farmers to take ownership of after funding ends. During this evaluation, FAO was exploring ways to continue supporting FFS until graduation from the second to third cycle where they could move forward with minimal external support. However, no final decision had been reached for IDA to provide continued FFS support via the public extension network.

Finding 19. A risk to sustaining the ecological agriculture approach is the government's continued fertilizer import subsidies.

172. As discussed later, technical personnel unanimously agree there is a lack of bold government decision to embark on ecological agriculture. The underlying priority is increasing productivity and food supply levels in markets and communities. There is still disbelief that this objective can be achieved solely through adopting organic production in the country.

173. However, there is a general belief that with persistence, information could eventually flow from the bottom up. Advocates like FAO can advise the government, and over time, the government may decide to disincentivise chemical fertilizer imports and adopt the good practices proven effective by the IRCEA project.

174. The government recognizes the need to diversify the economy through agricultural investment, and that agriculture in general needs greater consideration, investment, and project emphasis. However, if agriculture itself does not yet have high visibility in the government's top priorities, ecological agriculture has even less. While municipalities now know about IRCEA's achievements impacting smallholder farmers, more time and effort is needed for these local practices to be known nationwide. Raising awareness is still required, as ecological agriculture remains an unfamiliar concept in Angola.

175. Technicians shared testimonies from some municipalities suggesting that greater awareness-raising about CCA/SLM agriculture principles/practices and the risks of chemical fertilizers could reduce demand for the latter. There are anecdotal reports of vast quantities of fertilizer deteriorating in many EDAs as farmers are wary of soil saturation and not buying those inputs. If communities, the biggest stakeholders, opt for more resilient agricultural practices, they may gradually move away from chemical fertilizers toward organic inputs. Additionally, the global need for climate resilience is driving the replacement of electrical generators with solar panels.

4.6 Additionality

Finding 20. As already presented in detail in the section "Effectiveness", the IRCEA project brought additional value by advancing climate resilience beyond baseline investments, introducing an ecological agriculture approach for resilient livelihoods.

176. The project built upon prior initiatives like MOSAP II's focus on FFS and three previous GEF projects in Angola. With GEF funding, FAO extended FFS to Huíla province and introduced an agroecological methodology, bringing a new mindset for agriculture in drought-prone areas among farmers and technicians. This went beyond the foundations laid by predecessor projects. This is also illustrated by one IRCEA resilience technician who said: "For me, the results were very positive. I learned a lot from the FFS members and IRCEA project. Before joining FAO, I used technologies with chemicals for high yields, not the ecological agricultural techniques IRCEA teaches. After joining about a year ago, I learned to professionally make compost and use biochar – things that captivated me for contributing to more sustainable agriculture."

177. Technically, the GEF's additional funding allowed the project to deliver the most intended results under Component II. This included: i) integrating CCA into the national rural extension training curriculum, as outlined in the master trainers' programme at Wongo Agricultural Training Centre in Bié under MOSAP II; ii) developing cost-effective tools and capacities for delivering climate change support to vulnerable rural communities; and iii) providing and disseminating resilient agroastoral practices to many rural communities.

178. The project was executed in collaboration with public and private field institutions, notably IDA (representing the Ministry of Agriculture and Fisheries), academia, and traditional Sobas authorities. Extending the project to academia led to the development of the Agroecological Atlas.

179. The agroecological approach in southern Angola contributed to: i) institutional capacity building, including information management for better decision-making, with the FFS methodology aiding this; and ii) increasing producers' knowledge on production, water management, and introducing seed banks. FAO reportedly trained 140 smallholder farmers (FAO, 2022b) for multiplying and managing community seed banks, aiming to build input autonomy and ensure sustainable smallholder agriculture.

Finding 21. The IRCEA partnered with projects like FRESAN, MOSAP II, and government entities IDA and EDA for promoting FFS activities, including trainings for master trainers, facilitators and resilience technicians. FAO ensured partners' activities were resourced appropriately through oversight and Letters of Agreement. However, as mentioned in other sections, some weaknesses existed, thus affecting the scope and quality of interventions and results and sustainability.

180. Funds from the FRESAN project with FAO support continued the FFS methodology. However, the government lacks a clear strategy and funding to sustain IRCEA's outputs beyond the project. Agricultural authorities visiting the Cafu Canal[9] region, where several FFS were established, have demanded such a plan.

181. Key stakeholders' ownership of project results is an unconsolidated process. Some government officials question whether farmers have transitioned knowledge from FFS to their individual farms. During this terminal evaluation, the IRCEA FFS remained with FAO, with no hand-over process initiated.

9 The Cafu Canal is a major post-independence irrigation infrastructure in southern Angola, spanning 165 km and costing around USD 140 million, built to mitigate drought effects on agriculture and pastoralism in the region.

182. Key informants noted the partnership between IRCEA and provincial/municipal authorities (IDA and EDA) to show the project wasn't standalone. In all three municipalities, EDA validated the FFS.

183. The partnership with the NGO ADRA stands out for quality execution. FAO regularly verified ADRA's expenditures and audits to ensure transparency and proper use of funds. Although ADRA has a monitoring tool matrix, no imminent risk was identified during the LOA's duration.

184. To ensure ADRA's community land participatory delimitation training aligned with objectives, FAO engaged the former Chief Technical Advisor and National Project Coordinator to design the training with the service provider. This achieved two key objectives: i) training public institutions and civil society on the community land participatory delimitation methodology; and ii) building local capacities for implementing community land delimitation in the four target municipalities.

4.7 Quality of implementation and execution

4.7.1 Implementation

Rating: Moderately Satisfactory

4.7.2 Execution

Rating: Satisfactory

Finding 22. Although the activities of identification and preparation and start-up, and monitoring and supervision of the project were generally well carried out by FAO, some project's internal factors reduced implementation. Indeed, even though the risk identification was thorough and most of the identified risks materialized, the exercise was too outward-looking. Internal pitfalls were not properly identified, but prevention and mitigation measures were not applied, hampering implementation capacity.

185. FAO identified five potential risks at design phase, most of which occurred but mitigation measures were insufficient to avoid derailing implementation, leading to patchy results except for Component 2. The risks around i) inter-institutional cooperation difficulties, ii) government management changes, and iii) decreased project ownership/support from government all materialized. However, the response was disjointed across government levels. The two institutions tasked with risk mitigation were themselves affected by central government reformulations, hampering their role.

186. The failure to involve the PSC in mitigating government-related risks left a void, as the very at-risk institutions identified in the project document were supposed to provide mitigation measures. However, changes in the government disempowered institutions, transferring government liaison responsibility to FAO leadership. Ultimately, with the PSC's diminishing role after 2019, focal ministries' disengagement after the 2022 elections, and the COVID-19 pandemic, risk management depended on FAO senior management's engagement.

187. The risks identified in the project document missed other internal adversities that impacted implementation, including changes in FAO Country Representatives and loss of momentum during transitions, challenges in attracting and retaining key project personnel before and after the COVID-19 pandemic, and heavy administrative procedures affecting procurement and delivery of results. None of the identified risks accounted for potential risks posed by FAO's own operating modalities, which proved to be a misjudged assumption.

188. A new FAO Country Representative took office in 2018 when the project had lacked a Chief Technical Advisor for 1.5 years. Recruitment efforts, including in Portuguese-speaking countries,

failed to attract candidates due to the COVID-19 pandemic and language barriers. This prolonged Chief Technical Advisor absence compromised activities under Outcome 4, which depended on Chief Technical Advisor leadership for M&E system design, progress tracking, results evaluation, and experience systematisation. Consequently, dissemination of project-funded scientific materials and M&E lessons learned has been weak and ad-hoc.

Finding 23. Implementation faced challenges due to due to weaknesses and bottlenecks in the government commitment, FAO bureaucracy and regulations, staff turnover, the COVID-19 pandemic and other setbacks. Despite good intentions, the project lacked sufficient traction or support from both the overworked FAO Angola office and the dispersed government of Angola pursuing too many projects and whose interest faded after changes of government.

189. The Evaluation Team could not meet with some government officials in Huambo province, where the project had a Steering Committee member. Ongoing political activities at the time prevented meetings that would have provided a more balanced geographic perspective.

190. The post-election period in 2022 posed institutional challenges as government technicians from three institutions (Culture, Tourism and Environment) had to unite under one minister. For FAO, the ongoing changes made it difficult to advance the project, as some new officials forgot about IRCEA due to lack of institutional memory transfer. Once the new government settled, FAO showcased the Biodiversity Atlas as an important asset for the government's policy shift towards making agriculture central to economic diversification. With this new discourse in Angola and donors aligning efforts, the FFS model from southern Angola is being targeted for visits by investors and policymakers.

191. Another factor sustaining progress is the belief that previously FFS were concentrated in Huambo and Malanje, but since FAO's investments in the south through IRCEA, the next step is countrywide expansion, with special focus on drought-affected southern Angola. The hope is for more donor investment in strengthening agroecological resilience, as seen with recent World Bank and IFAD funding. GEF pioneered this, followed by PRODESA, IRCEA, and later IFAD/AFD's SREP project.

192. The ongoing expansion of FFS was viewed as a positive trend compared to the prior five years when the economy solely relied on oil exports. However, this does not represent sustainability, as agricultural expansion is heavily donor funded. Some key government informants insisted that mere talk of FFS institutionalisation is insufficient without demonstrating it through policy formulation and allocation of public investments.

Finding 24. The project, through FAO, established partnerships with implementing entities, which generally carried out the activities entrusted to them and delivered the expected outputs. However, some outputs were delivered late, and others were slightly below expectations due to internal and external constraints encountered by the project.

193. FAO signed partnership agreements, notably with ISPT for execution of Component II interventions. This evaluation noted the high engagement of young scientists who participated in and were impacted by the project, and who are highly regarded by the Huíla provincial government.

194. The local NGO ADRA successfully procured the necessary services to carry out training for local government officials, civil society organizations, and other stakeholders in partnership with FAO under the IRCEA project.

195. LOAs signed with ADRA, INAMET, ISPT, ISCD and other partners involved procurement activities by these executing entities. Key informants, particularly public entities unfamiliar with FAO/GEF

procurement guidelines, generally rated their relationship with FAO as good and viewed the organisational controls as part of an acceptable accountability culture.

196. A lifelong FAO executing partner in Huambo stated that: "FAO is organized, setting clear requirements, timelines, and reporting procedures for partnerships. Compliant partners have a smooth relationship, with timely payments and supportive government focal points ready to clarify doubts. It portrays FAO as a facilitator of good working relationships when partners meet established requirements."

197. ADRA leveraged its existing capacity from prior partnerships to deliver services for FAO. With previous cadastral training experience, ADRA had technical experts to provide participatory community delimitation training. For this partnership, ADRA formed a paid team of trainers, including personnel from the Provincial Directorate of Agriculture and the Geographical and Cadastral Institute of Angola.

198. Limited information existed on executing entities adherence to FAO's "Best Value for Money" procurement principle. However, partners' procurement execution may have been impacted by the lack of systematized financial information disaggregated by Outcome, as required by GEF and noted in the MTE. At least two senior key informants criticized FAO's internal bureaucracy.

Finding 25. At inception, FAO engaged with stakeholders in Huíla province through the Lead Technical Officer and program personnel. However, while the project design included comprehensive training on various interlinked topics, stakeholders noted that not all training could be delivered because FAO resilience specialists were recruited late in implementation.

199. FAO Angola's offices in Luanda and Lubango facilitated project implementation. The Lubango office provided closer support to farmer field school communities, while the Luanda office liaised with central government, coordinated steering committee meetings and ensured logistics for field activities.

200. The setup with a de facto project team in Lubango led by the National Project Coordinator addressed the mid-term review's findings of limited supervision and lack of results-based management. The coordinator's constant field presence and ability to leverage joint missions with other Lubango-based projects like SAMAP and FRESAN were decisive factors in turning the project around.

201. Having the Project Coordinator based in Lubango facilitated smooth day-to-day contacts with service providers like ADRA, ISPT, and the Lubango Herbarium (ISCED). The on-site team enabled oversight of outsourced activities, such as ADRA's 2017 training on participatory land delimitation, ISPT's agroecological survey presented during the government's Biodiversity Fortnight, and ISPT's related workshop.

202. Utilizing its favourable Huíla location, the project convened master trainers, IDA technicians, and extension officers in Caluquembe for two refresher trainings during late implementation stages. It also facilitated peer-to-peer learning sessions with FFS members from other projects and locations to share experiences. These interactions were overseen by the Lubango-based National Project Coordinator.

203. Service providers had smooth communication with FAO's Luanda and Lubango offices, facilitated by the National Project Coordinator's role. Stakeholders reported no political barriers in carrying out agreed activities with FAO. ADRA had institutional support from the provincial agriculture office and Caluquembe municipal administration.

204. Due to interruptions in the implementation, holistic progress was undermined. The FFS theme should have preceded agricultural practices implementation. Some technicians fear communities will struggle to continue project components after its end, as there wasn't enough time to impart theoretical themes and demonstrate them practically so that farmers will continue to practice what they learned.

Finding 26. The late provision of farming technology to some FFS, due to early implementation challenges, is seen as negative. When the equipment eventually wears out after the project ends, FAO will have missed the opportunity to fairly assess the efficiency of the distributed technology.

205. Some respondents in Quilengues expressed reservations about the drip irrigation systems received by the FFS. Some time had passed since their installation and these systems had a limited defects liability period and required maintenance. At the time of this evaluation, several FFS were still waiting for installation or accessories to operationalise the drip irrigation systems, raising uncertainty about implementing the small-scale irrigation systems.

206. In 2022, project activities were stalled, and many farmers had lost hope due to previous project managers' long absence and the little time remaining before closure. The new technicians couldn't create holistic FFS involvement but managed to disseminate essential practices through a major awareness campaign. Over the following months, community members regained belief in the project as the resilience technicians focused on the project objective and analysed farmers' greatest production difficulty at that stage.

Finding 27. Government officials at central level generally have knowledge gaps about the project´s latest results.

207. Some central-level government officials involved during FFS establishment confirmed participating in monitoring visits but had limited knowledge of farmers' activities in the closeout phase. While municipal agricultural directors in the four municipalities were well-engaged, the same was not true at the central level, where lack of consistent information did little to dispel doubts about knowledge transition from FFS to communities.

208. The PSC[10] was responsible for liaising between central government officials and the project. Evidence shows PSC meetings occurred in 2016, 2018 and 2019, but none beyond that. The scheduled July 2022 PSC meeting did not take place due to elections, which created insufficient guidance given the project's intensity during the closeout phase after nearly two years of inactivity. The lack of PSC meetings in the last three years weakened oversight and compliance with recommendations from the MTE, particularly those pertaining to partner actions.

209. The absence of a central coordinating body during the project's final stage deprived key stakeholders like the Ministry of Environment (later the Ministry of Culture, Tourism and Environment) of project information. By the time of this evaluation, that ministry was unaware the project had ended, reflecting difficulties in sustaining the early liaison mechanism. Communication became more challenging due to rapid ministerial changes posing ownership constraints of interventions by the new National Directorate for Climate Action and Sustainable Development post-elections.

[10] The PSC comprised representatives from relevant ministries, provincial governments, implementing agencies, civil society and focal points.

4.8 Financial management and co-financing

Finding 28. Financial information was mostly scattered and ultimately inconclusive on whether the planned co-financing at project design actually materialized and to what extent. Reports provided no insight into this aspect. The MTE identified a gap in co-financing reporting by partners and tracking by the project team. This gap apparently persisted until project conclusion.

210. The project had a total GEF/LDCF budget of USD 6 668 182. Budget execution followed the implementation trend, with operational setbacks and delays. In FY 2021, impacted by the COVID-19 pandemic, about 45 percent of the budget was spent despite reaching 60 percent of the estimated duration (FAO and GEF, 2021). However, disbursements were timely. Out of the USD 6 668 182 budget, FAO received USD 3 330 000 by 2021, with USD 2 892 155 spent.

211. After the 2017 and 2022 elections, the government's notable support was IDA/EDA collaborating to train 27 master trainers in Huíla province. They integrated CCA and SLM approaches. FAO did not review the partner co-financing strategy per the MTE recommendation. FAO also did not account for other unreported project support. In the first two years, FAO reported slightly positive co-funding. But the co-financing received from partners was almost 50 percent below target. Some partners contributed to food production interventions. This aligned with the government's plan. They allocated resources to rehabilitating rural infrastructure. As of June 2019, the actual co-funding was USD 11.9 million. This was 50 percent behind the commitment at CEO endorsement approval.

212. From November 2022 to March 2023, FAO had cost overruns for nine out of 12 project line items, with some up to 133 percent over budget, like travel expenses (Appendix 4). This suggests challenges in balancing project delivery and financial discipline.

213. The MTE reported high training costs in Component 1. After project activities resumed post-COVID-19 pandemic, those costs could not be verified. During this evaluation period, only two refresher trainings occurred in Huíla province, likely reducing capacity building costs.

214. The MTE recommended strengthening national partnerships and reducing international consultants' role. However, consultant expenditures remained high at 20 percent of total spent in less than a year, while local labour expenditure was negligible during this period (see Accounts 5013 vs. 5020, Appendix 4). This suggests the recommendation may not have been achieved.

215. Despite challenges such as lack of government buy-in, FAO bureaucracy, the COVID-19 pandemic, and government personnel changes, the management team successfully executed project management and administration as much as possible under the circumstances.

216. When the current FAO Country Representative took over in 2019, the project had lost its first Chief Technical Advisor after more than a year of implementation. The COVID-19 pandemic then caused another stoppage. The new FAO leadership was pivotal in quickly embracing the project and reviving it when beneficiaries had lost hope.

217. Since 2018, FAO realized the need to innovate, like using the Representative's management funds for constructing female toilets during master trainer training, as FAO had no construction budget line. This showed flexibility in achieving project results within fiscal policies.

218. FAO reduced daily subsistence allowance for travel and introduced the Chitaka Manual to standardise infrastructure costs. These measures aimed to curb high travel costs, the second-highest expense after salaries, and provide financial leeway. However, travel remained the third-

largest expenditure with the highest variation (USD 102 679) per Appendix 4, indicating FAO Angola needed tighter financial prudence.

4.9 Monitoring and evaluation system

4.9.1 Monitoring and evaluation design

Rating: Highly Unsatisfactory

4.9.2 Monitoring and evalaution implementation

Rating: Moderately Unsatisfactory

Finding 29. Apart from the digital platform set up to monitor and collect data on activities carried out in the farmer field schools, no clear, detailed, and appropriate monitoring-evaluation plan to measure the progress of the implementation of the project in its entirety has been provided nor observed. The project's M&E design was unclear in the original project document. The MTE identified a lack of an M&E Plan, and this gap persisted until the end.

Finding 30. *The M&E system lacked a tailored M&E Plan to guide performance monitoring, external evaluations, and documenting lessons learned for dissemination, although its development at the start of the project was planned in the project document. To reduce this gap, the Project Steering Committee's active role until 2019 guided project implementation more than the M&E function. Also, the project focused its efforts on monitoring the performance of the activities of component 2 through the implementation of the FFS platform.*

219. Initially, government officials participated in field visits with FAO counterparts to track implementation and engaged in PSC sessions. However, key informants from GSA and the Ministry of Environment could not comment on the overall effectiveness of the M&E system, as they lacked access to progress reports from the later project implementation stages.

220. The Project Steering Committee's active role until 2019 to guide implementation including frequent review of progress and planning of activities and budget. Key M&E activities like the Mid-Term and Terminal Evaluations occurred but could not compensate for the role of a well-functioning M&E Plan to detect deviations early, and to propose corrective actions. Also, the project focused its efforts on monitoring the performance of the activities of component 2 through the development of the FFS platform which made it possible to record, monitor and manage those entities through their life cycle Consequently the M&E system is credited with delivering the FFS Platform – a registration and monitoring tool aimed at effective management and remote monitoring of field schools through their life cycles. It involves different user levels, information sources, and allows decision-makers timely information access. The tool gathers all FFS information and verifies their structure/organisation briefly. With georeferencing of all projects FFS, the system pinpoints their exact locations, allocated technicians, and project-trained master trainers and facilitators.

221. The project conducted an agroecological assessment resulting in the Agrobiodiversity Atlas, a resource expected to inspire more evidence-based decisions in the future based on the gathered and systematised knowledge. This work was carried out by the service provider ISPT, who collected field data in Huíla province, organized and processed it, and ultimately helped in correcting the Atlas.

222. Some field technicians expected more field visits from M&E personnel to verify reported data on yields and Chitaka progress. M&E personnel only travelled to project sites during management

or high-profile FFS visits. Contradicting views suggest: i) FAO's limited resources at the Lubango regional office, with multiple projects like FRESAN and SAMAP besides IRCEA, required rationalizing resources through integrated, multidisciplinary joint visits; and ii) M&E technicians trained field personnel to regularly send data, negating the need for constant visits.

223. Some stakeholders stressed that FAO's promises made in the context of a project should be monitored, as with IRCEA there were unfulfilled promises of motorcycles for master trainers and seed provision.

224. The field data collection for the Agrobiodiversity Atlas could have been used as a Tool for Agroecology Performance Evaluation (TAPE), but this assessment was not integrated as a monitoring and evaluation tool. This missed an opportunity to compare farm practices before and after the project, which would have helped determine its overall impact. There is no information on how TAPE's identified priorities compare to the project's original priorities.

4.10 Application of GEF policies and guidelines

4.10.1 Environmental and social safeguards

Finding 31. The project had positive environmental effects because of its interventions in Component 2 – scaling up of improved CCA/SLM practices through FFS without any noticeable negative environmental impacts.

225. The project received a Category C environmental impact assessment, and this evaluation confirmed its generally positive environmental contribution. The farmer field schools practiced climate change adaptation and sustainable land management techniques like intercropping, water and soil management, soil correction, crop rotation, organic pesticides, and other improved agro-climatic methods.

226. One of IRCEA's greenest innovations was an improved, fuel-efficient stove used at the Chitakas for cooking, earning it the name "firewood and charcoal saving stove."

227. The IRCEA project members in sampled FFS accepted the environmentally friendly techniques learned and had no plans to return to traditional practices. In contrast, MOSAP II project members in Bié, despite adopting FFS without CCA/SLM, depended on the government for fertilizers, facing delays, price fluctuations, and water contamination risks from fertilizer use.

228. The use of local materials like poles, ropes, and grass for constructing Chitakas could inadvertently contribute to deforestation in the country. As more FFS adopt the Chitaka model, local construction materials become scarcer and harder to access. Without a reforestation plan, IRCEA's initiative could undermine environmental preservation long-term. Some officials suggested using conventional materials for durability to avoid this unsustainable precedent.

Finding 32. The FFS provided a sense of belonging and recognition for members, mostly women and farmers. Anecdotal information suggests Angolan farmers' agricultural production supplied the market with food commodities during the COVID-19 pandemic's shutdown of regional and international markets.

229. The evaluation found no divisive factors like political/religious affiliation, ethnicity, gender, or discrimination in selecting FFS members, aligning with FAO's "leaving no one behind" policy. All members displayed camaraderie and good relationships with facilitators and extension agents, indicating FFS and the Chitaka concept promoted social inclusion and cohesion. Management positions like Treasurer and Secretary required literacy skills, while President and Vice President roles were elected based on demonstrated leadership qualities through community scrutiny.

230. Anecdotally, during the COVID-19 pandemic in Angola, national smallholder producers reduced imports naturally, building the country's food and social resilience. These positive outcomes suggest improved local food system resilience, which was not normal prior to the project.

231. Other additional economic gains were activities generated and skills transferred during the project, and these constitute successes, e.g. the small businesses that have emerged from production and sale of bio-inputs and the construction of Chitakas.

232. The project document lacks clarity on the dispute resolution and social safeguard mechanism adopted across the four municipalities. Potential conflicts could arise from limiting FFS members to a maximum of 30 per group, and land occupancy issues arising from setting up Chitakas.

Finding 33. The project appropriately targeted farming and pastoralist populations in southern Angola, leaving no one behind. However, there is a clear absence of youth in the core FFS structures.

233. All project beneficiaries were disadvantaged and vulnerable due to their rural status, remoteness, and most being illiterate women. FAO technicians involved everyone by conducting trainings in Portuguese and the local Quimbundo language.

234. The project engaged youth as extension agents but lacked youth members or roles in FFS. There is a notion that family agriculture is a way of living, not a business, leading to lack of youth interest despite their significant population share (the youth aged 15 to 35 years is lower than 49.3 percent for the 15 to 65 age group, as per INE 2023). This misses an opportunity, as the youthful population is underutilized in agriculture.

235. The project engaged youth as research assistants for SPAA, where they gained skills in tool design, data collection, participatory methods, interpreting findings, and designing responsive actions. Youth were also involved in research activities by ISPT, exhibitions at the Lubango Herbarium, and as resilience technicians assisting FFS. However, there was no action plan to promote social inclusion by targeting young and emerging farmers.

4.10.2 Gender equality

Finding 34. The project successfully integrated and empowered women FFS members. Women's presence in management committees was the most visible aspect of gender integration. There are suggestions of societal perspective changes as a result.

236. Aligned with FAO's "Leaving no one behind" approach, IRCEA aimed for at least 35 percent women participants. Some field schools had only women members. By project close, 3 150 women (52 percent of the total) were FFS members. Women did most of the work in the Chitakas, with 90 percent handling FFS financial management.

237. Female FFS members demonstrated strong capability in agroecological techniques taught by the project. During field visits, women commonly explained processes like making organic pesticides, composting, crop spacing, using manure, composting timeframes, soil absorption, and avoiding groundwater contamination. In Caconda, FFS members explained learning study plot setup, using compass/line sowing with specific spacing for maize, tomatoes, and cabbage to allow growth and enable harvest estimation.

238. Women mastered nutrition skills, preparing soups at Chitakas using locally grown products - a cultural change. Initially less vocal, these FFS members grew into leadership roles over time, with changes including improved feeding practices. In Caluquembe, women demonstrated strong work ethic, contributing significantly to project success. In 50 percent of FFS, at least two women

held leadership roles like facilitator, coordinator or president, challenging the notion that only men can. Women's inclusion in Caluquembe's field schools was well accepted.

239. A major impact of IRCEA in Giraul, Caluquembe municipality, is that the local FFS has owned a corn mill since 2021. Stakeholders credit this success to having a female treasurer and a detailed investment plan.

240. IRCEA Resilience Technician in Huíla province said: "In terms of gender, the IRCEA project was highly relevant within the field schools because members were fully committed. Overall gender mainstreaming was around 45 to 50 percent (near parity in FFS membership). There was a community taboo that men should lead, but through sensitisation and gender framing, they realized women could do tasks traditionally seen as men's work. For example, during plot installation and sowing, instead of calling men for measurements, girls differentiated meters and centimetres, learning what they never thought possible.

241. At ECA Cangombe in Caluquembe, focus group participants reported a clear gender-based division of labour. Their FFS treasurer is a woman, and workload is divided – men cut down trees while women carry the sticks from the bush to construction sites.

242. Despite low literacy among women and gender disparities in Angola's division of labour, the project's basic reading/writing requirement did not inhibit women from taking leadership roles like treasurer, secretary, and facilitator in local FFS. Women were often selected for these roles, aligning with the perception that they are more trustworthy with collective money. In almost all sampled FFS like Valodia, Irmãos Unidos, Ekumbi, Progresso, Cecília, and Ecule, the treasurer role was handled by female members.

Finding 35. The significant presence and active role of women[11] in the FFS is partly due to women comprising most of the agricultural workforce in family sector farming in Angola and southern Africa, rather than solely a project strategy success.

243. The MTE reported the project lacked a consistent gender strategy during implementation. While FAO set some metrics like proportion of female beneficiaries and had some all-women FFS, this Evaluation noted with concern the lack of female extension technicians hired by FAO across the four municipalities, including among the 27 master trainers trained in Huíla province.

244. The MTE findings showed a huge underrepresentation of qualified women benefitting from the project, particularly in components 1 and 3. Out of 28 participants trained in high-tech disciplines like SHARP, TeleGIS, and Agrometeorology, only eight were women.

245. The 2017 training on Participatory Community Land Delimitation methodology for 30 personnel from municipal administrations and civil society organisations in Caluquembe, Caconda, Chicomba and Quilengues only had four female trainees out of the total of 30.

246. Regarding a gender-based division of labour, it was in some communities necessary due to the manual labour required for the predominant type of cultivation. In Caconda, one local field school has a balanced leadership with two women as president and treasurer, and a male advisor. Women and men collaborate in agriculture – men drive oxen and use plows, while women sow the fields. The bulk of FFS work from production to commercialization is done jointly by male and female

[11] Women represent approximately 70 percent of the agricultural workforce and 75 percent of livestock raising labor in Angola (FAO, 2016).

members, including taking produce to market, contacting buyers, fixing farmgate prices, and other activities.

4.10.3 Stakeholder engagement

247. Stakeholder engagement has already been assessed in the sections Sustainability and Implementation.

4.10.4 Knowledge management and learning

Finding 36. The project developed the Agrobiodiversity Atlas by ISPT/ISCED, the "Participatory Survey with Agroecological Approaches", the FFS Management Information System, and other products are innovations that will transform applied research, stakeholder participation, and results based FFS network management in Angola. For instance, the Polytechnic Institute of Umpata's scientific fortnights disseminating new findings interest students in environmental management courses. However, the low investment in the dissemination of project results, and the lack of a clear and time-limited exit strategy were the weaknesses.

248. The project developed support materials for refresher trainings of master trainers, Facilitators, and Climate Resilience Specialists from IRCEA and MOSAP II. These materials aimed to harmonize the understanding of CCA and SLM topics between the technicians of the two projects, through coordination between FAO and IDA.

249. The absence of a clear and time-bound exit strategy with a handover process poses a risk for the technical expertise needed for the new products developed under the project to be properly absorbed by those who will use them beyond the project's end.

250. The dissemination of project results and opportunities was not properly planned. The FAO/Government Cooperation Programme Agreement established an obligation for an independent evaluation report, not scientific products, for educating public opinion. This gap led the Project Steering Committee to recommend in March 2019 that FAO increase the visibility of project results.

251. The stakeholder engagement activities included in agreements with key public institutions specify deliverables such as trainings, meetings, databases but do not mention dissemination of resulting project products.

252. Towards the end, FAO commissioned some publicity materials including shirts, caps, office materials, but with little effect as even project roadside signage to the Chitakas was limited, improvised and non-standardized.

5. Conclusions and recommendations

5.1 Conclusions

Conclusion 1. Relevance and coherence: Through the FFS approach, the project was relevant to the resilience of target beneficiaries and to the government's priority needs for adaptation to climate change and the promotion of sustainable agriculture. It coordinated or created collaborations and synergies with other similar or complementary interventions carried out by the government and its partners in Angola and was able to adjust its theory of change and its strategy to fill some gaps in its design, and to cope with external constraints and major changes that occurred afterward.

Conclusion 2. Efficiency- quality of implementation and execution - monitoring and evaluation system: Despite good collaboration between FAO and the Government of Angola and partial restructuring of the project such as successful introduction of the Chitaka production model, the project faced several factors that hampered project implementation and execution and therefore reduced its effectiveness and efficiency. These factors include delays in planning and carrying out activities, interruptions due to bureaucratic procurement and recruitment policies, staff turnover, the COVID-19 pandemic, the limited monitoring and evaluation system and the change of government which weakens or breaks the interest and commitment of the new administration.

Conclusion 3. Effectiveness: The project made a valuable and successful contribution to capacity building and to promoting CSA practices through FFS (including though research outputs by academic partners and FAO), but due to constraints encountered during implementation, it has failed to adequately mainstream CSA into policies/programs. The introduction of the Chitaka integrated production system later (2022) in the project motivated farmers to re-engage with FFS activities that most had abandoned during the long interruptions and resulting uncertainty of the communication gap.

Conclusion 4. Sustainability: The project promoted the testing and dissemination of an approach and technologies that are within the reach of producers and can be adapted to the local context. However, the results remain fragile. Although policy makers and FAO senior management are optimistic that CCA/SLM practices will continue beyond the project and its GEF financing, its long-lasting adoption by individual smallholders outside the FFS needs appropriate support for them to obtain investments required for modern agriculture. Chitakas also need such support to upgrade into conventional infrastructure, for greater sustainability.

Conclusion 5. Environmental and social safeguards - gender equality: The project created positive environmental and social effects in terms of improved CCA/SLM practices through FFS without any notable negative environmental impacts. The FFS provided a sense of belonging and recognition to its members, mainly women farmers. The project satisfactorily integrated and empowered women FFS members. Women's presence in management committees was the most visible aspect of gender integration.

5.2 Recommendations

Recommendation 1. FAO's future similar projects in Angola should support the government in embedding the FFS model and CCA/SLM tools and technologies in the planning of future national agricultural development programmes and curricula. FAO should strengthen its long-term support to climate resilience of the agropastoral production systems in Angola by re-engaging with specialized public, private and non-governmental research institutions including the Wongo Agricultural Training Centre in Catabola, and the José Eduardo dos Santos University, which are already training master trainers and agricultural extension agents in the country. FAO should assist the Ministry of Agriculture and Fisheries in ensuring the national Agricultural Market Information System sets reference prices for each

crop at the start of each agricultural season and disseminates them to farmers to enhance their bargaining power.

Recommendation 2. FAO must put in place adequate measures to prevent and mitigate organizational and operational risks and weaknesses that affect its performance regarding the execution of GEF-funded projects and the delivery of expected results. These measures must primarily target the strengthening of procurement capacities, activity planning, provision and deployment of human, technical and financial resources, monitoring-evaluation and informed decision-making.

Recommendation 3. FAO should support the development of a database of master trainers, and Chitaka community contractors who can be mobilised and deployed as local service providers in future resilience projects in the country. That would also grant graduating students with access to internship opportunities at local municipalities where they could assist FFS at no cost in exchange for academic coaching by tutors.

Recommendation 4. FAO should develop and implement a strategy for disseminating the content of the scientific material and other intellectual property housed by partner institutions such as the Lubango Herbarium (ISCED), ISPT as well as the climatic database at INAMET and the Agrobiodiversity Atlas under the guardianship of the Ministry of Culture, Tourism and Environment for greater access and utilization by interested public.

Recommendation 5. FAO, the Government of Angola, and international partners currently funding FFS - the World Bank, the European Union, AFD and IFAD, among others - should seize Angola´s membership in the International Treaty on Plant Genetic Resources for Food and Agriculture as an opportunity to conduct a countrywide assessment of national indigenous seeds in danger of extinction with the aim of halting their loss as a result of climate change.

5.3 Lessons learned

253. The following lessons learned were identified from FAO's implementation of the IRCEA project in Angola, which have the potential to inform regional projects where this GEF intervention is implemented:

i. When farmers assemble all required inputs, including irrigation pumps, it is possible to set up a Chitaka in 15 days and reduce unnecessary additional costs provided the project prepares in anticipation a community brigade with a clear division of labour between members and the availability of local support. The technicians are there to ensure compliance with standards for a chicken coop as it needs a bridge to the pasture area, and drip irrigation components.

ii. Both the technicians and FAO senior management learned that project design flexibility and adaptability are essential to withstand internal and external shocks.

iii. FAO Angola should quickly learn from the pragmatism it had in reshuffling the IRCEA initial design and adopt this to its internal procurement procedures without necessarily breaking corporate rules. Emergency-type response mechanisms should be adopted to re-stabilize the project when high staff turnover occurs at crucial stages in project implementation.

iv. FAO should avoid the tendency to improve one instrument by creating another as was the case with the MTE recommendation to finalize the analysis of the SHARP survey results to inform training themes in Components 1 and 2. Supposedly as a complement to the first survey, FAO responded by developing SPAA.

v. CCA/SLM practices have proven to be suitable to meet production needs in emergency situations such as that of the COVID-19 pandemic during which people produced more food locally to satisfy the country needs. Whoever knew how to

produce food was more resilient to COVID-19 than others because the country had a sanitary barrier and there, the theme of sanitary resilience was better understood.

vi. IRCEA helped promote and create renewed interest at the producer level for agroecological techniques, some of which were already known locally but not widely used. In some communes, when the resilience technicians started working there, farmers were already using dust to fight funnel caterpillar. Similarly, to chase goats from invading farms and destroying crops, farmers used goat manure to grow the corn, and that way, goats don't even pass by. Farmers also learned that in addition to fighting pests with ash, the organic compost Biol and Biocide could also eliminate the funnel caterpillar (tchinguxa) and whitefly. In Quilengues there are FFS that also kill the tchinguxa with sand.

vii. The IRCEA project could have had a greater impact on livelihoods and visibility as a pioneering initiative if FAO had leveraged the project's integrated Chitaka production system innovation. This system mainstreamed CCA/SLM practices into local agricultural systems. However, FAO missed the opportunity to establish IRCEA as a national "centre of excellence" in Huíla province by failing to tap knowledge from other agriculture projects to fully implement IRCEA's approach.

viii. The integration of CCA into policies is not a one-off action consisting simply of producing some outputs by service providers (consultants) or periodic meetings (government technical agents), but a continuous and long-term process, which requires on the part of FAO, advocacy, awareness-raising and continuous dialogue with the government, and on the part of the government, awareness-raising of managers and decision-makers at several levels (executive, parliamentary, authorities at central and local level) on the opportunities to be to input.

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Appendix 1. People interviewed

Name	Organization	Location	Position
Cajina, Gherda Barreto	FAO	Luanda Head Office	FAO Country Representative
Gonçalves, Anastácio Roque	FAO	Luanda Head Office	Assistant Country Rep. for programme
Amado, Josina Jacinto	FAO	Luanda Head Office	Head of Operations
Oliveira, Clemente	FAO	Luanda Head Office	Programme technical staff
Nascimento, Maria de Fatima	FAO	Luanda Head Office	
Watangua, Miguel	FAO	Luanda Head Office	
Saiobe, Ludmila	FAO	Luanda Head Office	
André, Fernando	IDA / Ministry of Agriculture and Fisheries	Luanda	Head of Food Security Dept.
Carlos, Rosalina Da Silva	FAO	Huíla Regional Office	IRCEA Coordinator
Alberto, Yuri	FAO	Huíla Regional Office	FAO M&E Officer
Soares, João Carlos	FAO	Huíla Regional Office	
Landaeta, Catalina Guadalupe	Formerly FAO	Online	Former FAO consultant
Constantino, Luís	Ministry of Culture, Tourism and Environment	Luanda	National Director and project focal point
Francisco, Ruth	Herbário do Lubango	Lubango - Huíla	Environmental Engineering student
Nacale, Grece	Herbário do Lubango	Lubango - Huíla	Socio-ecologist
Lutondo, Eduardo	ISPT / Herbário do Luango	Lubango - Huíla	Animal Specialist
António, Telmo	ISPT / Herbário do Lubango	Lubango - Huíla	Lecturer and Researcher
Pires, Ivanilton	ISPT / Herbário do Lubango	Lubango - Huíla	Coordinator for the Environmental Engineering course
Bassia, Joaquim	Env. Engineering student	Lubango - Huíla	Env. Engineering Student
Katekava, Jorge	Env. Engineering student	Lubango - Huíla	Env. Engineering Student
Soke, Ãngela	Env. Engineering student	Lubango - Huíla	Env. Engineering Student
Clemente, Anabela	Universidade do Namibe	Lubango - Huíla	Env. Engineering Student
Cabral, Wilson	Instituto de Desenvolvimento Agrário (IDA)	Chicomba - Huíla	Director
Wehunga, Antonio	ECA Towinhe	Chicomba - Huíla	ECA president
Chipando, Gabriel Camate	ECA Marquinha Mahinda	Caconda - Huíla	Facilitator
Pedro, Gildo	Municipality level	Caconda – Huíla	FAO Resilience technician
Borges, Cristina	ECA Marquinha Mahinda	Caconda - Huíla	Member
Augusto, Teresa	ECA Marquinha Mahinda	Caconda - Huíla	Member
Benguela, Catarina	ECA Marquinha Mahinda	Caconda - Huíla	Member
Mandele, Susana	ECA Marquinha Mahinda	Caconda - Huíla	Member
Eliseu, Maria	ECA Marquinha Mahinda	Caconda - Huíla	Member

Name	Organization	Location	Position
Calandula	ECA Marquinha Mahinda	Caconda - Huíla	Facilitator
Francisco, Rodrigues	ECA Marquinha Mahinda	Caconda - Huíla	Member
Lugange, Feliciano	ECA Marquinha Mahinda	Caconda - Huíla	Member
Baeta, Delfina	ECA Marquinha Mahinda	Caconda - Huíla	Member
Chilulu, Florência	ECA Marquinha Mahinda	Caconda - Huíla	Member
Cafindula, Adriano	ECA Marquinha Mahinda	Caconda - Huíla	Counsellor
Correia, Inácio	ECA Marquinha Mahinda	Caconda - Huíla	President
Luis José, António	ECA Marquinha Mahinda	Caconda - Huíla	Member
Francisco, Ulundo	ECA Marquinha Mahinda	Caconda - Huíla	Member
Camosso, Januário	ECA Marquinha Mahinda - Caconda	Caconda - Huíla	Member
Pedro, Gildo	Municipality level	Caconda – Huíla	FAO Resilience technician
Carlos, Job João	ECA Irmãos Unidos	Caconda - Huíla	Facilitator
Salomão, Gabriel	ECA Irmãos Unidos	Caconda - Huíla	Secretary
Zacarias, António	ECA Irmãos Unidos	Caconda - Huíla	Member
Frasão Manuel	ECA Irmãos Unidos	Caconda - Huíla	Member
Ferreira, Jeremias	ECA Irmãos Unidos	Caconda - Huíla	Advisor
Manuel, António	ECA Irmãos Unidos	Caconda - Huíla	Head of Production
António, Salomé	ECA Irmãos Unidos	Caconda - Huíla	Member
Muele, Joaquim	ECA Irmãos Unidos	Caconda - Huíla	Member
Jone, Ana	ECA Irmãos Unidos	Caconda - Huíla	Member
Isabel, Catarina	ECA Irmãos Unidos	Caconda - Huíla	Treasurer
Catarina, Rabeca	ECA Irmãos Unidos	Caconda - Huíla	President
Viqueia, Teresa	ECA Irmãos Unidos	Caconda - Huíla	Member
Pedro, Isabel	ECA Irmãos Unidos	Caconda - Huíla	Member
Manuel, João	ECA Irmãos Unidos	Caconda - Huíla	Member
Augusto, Manuel	ECA Tussuteka (Negola)	Caluquembe - Huíla	President
Domingos, Francisca	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Camosso, Domingos	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Kapapolo, José Ernesto	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Rogério, Daniel	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Guefondo, Ernesto	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Catumbila, Tomás	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Kuva, Luzia	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Cristina, Avelina	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Arão, Luna	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Paulo, Suzana	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Kapitayo, Albino	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Dande, Avalina	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Arão, Domingas	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Ngumve, Vissa	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Mbimbi, Avelina	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Mbando, Isabel	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Pacheco, Gabriel	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Augusto, Manuel	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Manuel, Abel	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Manuel, João	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member

Appendix 1. People interviewed

Name	Organization	Location	Position
P. Kapata, Celestina	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Moisés, João Baptista	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Arão, Ana	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Machala, Clemente	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Bernardo Paulina	ECA Tussuteka (Negola)	Caluquembe - Huíla	Member
Jandir Fins	Municipality level	Caluquembe - Huíla	FAO Resilience Technician
Sitomba Manuel	ECA Ekumbi	Caluquembe - Huíla	President
Maria Donativa	ECA Ekumbi	Caluquembe - Huíla	Member
Francisco Peio Capipa	ECA Ekumbi	Caluquembe - Huíla	Facilitator
Albertina Kanga	ECA Ekumbi	Caluquembe - Huíla	Member
Vitória Dengue	ECA Ekumbi	Caluquembe - Huíla	Treasurer
Francisco Mandele	ECA Ekumbi	Caluquembe - Huíla	Member
Fernando Thombe	ECA Ekumbi	Caluquembe - Huíla	Member
Francisco Chitongo	ECA Ekumbi	Caluquembe - Huíla	Member
Faustina Teresa	ECA Ekumbi	Caluquembe - Huíla	Member
Teresa Muhimba Rafaela	ECA Progresso	Caluquembe – Huíla	President
Domingos Tchombe	ECA Progresso	Caluquembe – Huíla	Secretary
Ana Kahuma	ECA Progresso	Caluquembe – Huíla	Treasurer
Miguel Kaleya	ECA Progresso	Caluquembe – Huíla	Member
José Joaquim	ECA Progresso	Caluquembe – Huíla	Member
Joaquim César	ECA Progresso	Caluquembe – Huíla	Member
Joaquina Tchombe	ECA Progresso	Caluquembe – Huíla	Member
Maria Rosa	ECA Progresso	Caluquembe – Huíla	Member
José Mangundo	ECA Progresso	Caluquembe – Huíla	Member
José Mukondo	ECA Progresso	Caluquembe – Huíla	Member
Joaquim Chiputo	ECA Progresso	Caluquembe – Huíla	Member
Belchior Cayumba	ECA Valódia	Caluquembe - Huíla	President
Miguel Francisco	ECA Valódia	Caluquembe - Huíla	Member
José Lopes	ECA Valódia	Caluquembe - Huíla	Member
Santoque Albino	ECA Valódia	Caluquembe - Huíla	Member
Manuel Soba	ECA Valódia	Caluquembe - Huíla	Member
André Livongue	ECA Valódia	Caluquembe - Huíla	Member
Eduardo Kanhanga	ECA Valódia	Caluquembe - Huíla	Member
António Mundenguela	ECA Valódia	Caluquembe - Huíla	Member
Boaventura Mario	ECA Valódia	Caluquembe - Huíla	Member
Maria ndjundjo	ECA Valódia	Caluquembe - Huíla	Member
Catarina Cafeka	ECA Valódia	Caluquembe - Huíla	Member
Helena Nangomba	ECA Valódia	Caluquembe - Huíla	Member
Lucia Lussati	ECA Valódia	Caluquembe - Huíla	Member
Bermardo Tchulombo	ECA Valódia	Caluquembe - Huíla	Member
Maria da Conceição Bransa	ECA Valódia	Caluquembe - Huíla	Member
Mariana Malenço	ECA Valódia	Caluquembe - Huíla	Member
Luísa Dina	ECA Valódia	Caluquembe - Huíla	Member
Isabel Jauka	ECA Valódia	Caluquembe - Huíla	Member
Teresa Lussati	ECA Valódia	Caluquembe - Huíla	Member
Vitória Chilombo	ECA Valódia	Caluquembe - Huíla	Member
Margarida Wimbo	ECA Valódia	Caluquembe - Huíla	Member
Inácio Kathiveko	ECA Valódia	Caluquembe - Huíla	Member
Isabel Mariana	ECA Valódia	Caluquembe - Huíla	Member
Maria Candeia Job	ECA Valódia	Caluquembe - Huíla	Member
Ester Lourenço	ECA Valódia	Caluquembe - Huíla	Member
Emília Joaquina	ECA Valódia	Caluquembe - Huíla	Member
Graça Lourenço	ECA Valódia	Caluquembe - Huíla	Member
Teresa Domingos	ECA Valódia	Caluquembe - Huíla	Member

Name	Organization	Location	Position
Joaquim Non´gulo	ECA Cangombe	Caluquembe - Huíla	President
Florindo Maurício	ECA Cangombe	Caluquembe - Huíla	Member
Manuel Pedro	ECA Cangombe	Caluquembe - Huíla	Member
Mario Tchulombo	ECA Cangombe	Caluquembe - Huíla	Member
Ana Donana Gabriel	ECA Cangombe	Caluquembe - Huíla	Member
Rita Massanga	ECA Cangombe	Caluquembe - Huíla	Member
Francisca Luzia	ECA Cangombe	Caluquembe - Huíla	Member
Isabel Angélica	ECA Cangombe	Caluquembe - Huíla	Member
Palmira Nené	ECA Cangombe	Caluquembe - Huíla	Member
Teresa Kambili	ECA Cangombe	Caluquembe - Huíla	Member
Valeriana Tchamlé	ECA Cangombe	Caluquembe - Huíla	Member
Domingos Ngando	ECA Cangombe	Caluquembe - Huíla	Member
Miguel Cipriano	ECA Cangombe	Caluquembe - Huíla	Member
António Cambula	ECA Cangombe	Caluquembe - Huíla	Member
Tomás Julio e Maria Martinho	ECA Cangombe	Caluquembe - Huíla	Member
Isabel Ngouka	ECA Cangombe	Caluquembe - Huíla	Member
Leopoldina Nené	ECA Cangombe	Caluquembe - Huíla	Member
Inácio Domingos	ECA Cangombe	Caluquembe - Huíla	Member
Lourenço Domingos	ECA Cangombe	Caluquembe - Huíla	Member
Luís Abel	ECA Cangombe	Caluquembe - Huíla	Member
Gonçalves Ndombe	ECA Cangombe	Caluquembe - Huíla	Member
Manuel Tchi Wenhengue	ECA Cangombe	Caluquembe - Huíla	Member
Elias João	ECA Cangombe	Caluquembe - Huíla	Member
Salvador António	ECA Cangombe	Caluquembe - Huíla	Member
José Kassungo Malanga	ECA Cangombe	Caluquembe - Huíla	Member
António Guilherme	ECA Cangombe	Caluquembe - Huíla	Member
Pedro António	ECA Cangombe	Caluquembe - Huíla	Member
Maria João Chipalavela	Huíla Government	Lubango - Huíla	Deputy Governor
José Francisco Elias	Municipality level	Caluquembe - Huíla	Master Trainer
Agostinho Zacarias	Municipality level	Caluquembe - Huíla	Master Trainer
Domingos Mupolo	ECA Mutengue	Quilengues – Huíla	President
Cristóvão Paulino	ECA Mutengue	Quilengues – Huíla	Facilitator
Alberto Capusso	ECA Caussamba – Muloi I	Quilengues – Huíla	President
Esperança Câmia	ECA Caussamba – Muloi I	Quilengues – Huíla	Facilitator
António Costa Tchiaque	ECA Caussamba – Muloi I	Quilengues – Huíla	Treasurer
Ferreira Chita	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Evaristo Ngala	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Paulo Alberto	ECA Caussamba – Muloi I	Quilengues – Huíla	Head of production
Domingas Adelaide	ECA Caussamba – Muloi I	Quilengues – Huíla	Secretary
Cristina Valengue	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Joaquina Bimbi	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Madalena Catumbo	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Dionisia Bela	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Domenica Kawaia	ECA Caussamba – Muloi I	Quilengues – Huíla	Member

Appendix 1. People interviewed

Name	Organization	Location	Position
Jacinda Maria	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Joaquina Pequenino	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Bernarda Julele	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Guilhermina Noloti	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Helena Dumbo	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Joaquina Katumbo	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Florinda Candeia	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Josefina Benguela	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Paulina Wangi	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Domingos Jovati	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Alberto Camosso	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
David Janga	ECA Caussamba – Muloi I	Quilengues – Huíla	Member
Daniel Elavoko	Municipality level	Quilengues - Huíla	FAO Resilience technician
Fernando Francisco Longuenda	Quilengues Municipality Administration	Quilengues - Huíla	Municipal Administrator
José Luís Jonatão Navalha	Director of Agriculture, Fisheries & Livestock	Quilengues - Huíla	Director
Ambrósio Fortunato Almeida	Universidade José Eduardo dos Santos / Faculty of Agricultural Science	Huambo	Dean
Moisés Livongue	Agricultural Research Institute (IIA)	Huambo	Technician and graduate of the 2019–2020 training of trainers (TOT) by FAO
Non-IRCEA-related entities			
Nsimba Malamba	Centro de Treinamento do Wongo	Catabola - Bié	Master trainer and head of the centre
Adolfo Sequalane	Agricultural Development Institute - IDA	Cuito - Bié	Technician and co-trainer of the 2019–2020 TOT by FAO
Francisco Chawakwa Miguel Vieira	Agricultural Development Institute - IDA	Cuito - Bié	Technician and graduate of the 2019–2020 TOT by FAO
Inácio Caheque	ECA Uculinga Upangue- FFS	Cunje - Bié	President
Armando Cacinda	ECA Uculinga Upangue- FFS	Cunje - Bié	Vice-president
Faustino Catetula	Uculinga Upangue FFS	Cunje - Bié	Facilitator
Tiago Sonho	Uculinga Upangue FFS	Cunje - Bié	Member
Ana Paula Jeremias	Uculinga Upangue FFS	Cunje - Bié	Member
Verónica Cangilo	Uculinga Upangue FFS	Cunje - Bié	Member
Ermelinda Lussaka	Uculinga Upangue FFS	Cunje - Bié	Member

Name	Organization	Location	Position
JuditeCassulela	Uculinga Upangue FFS	Cunje - Bié	Member
Xavier Jungo	Uculinga Upangue FFS	Cunje - Bié	Member
Ana Bela Domingos	Uculinga Upangue FFS	Cunje - Bié	Member
Laurinda Vissoni	Uculinga Upangue FFS	Cunje - Bié	Member
Bernabé Sangondjo	Uculinga Upangue FFS	Cunje - Bié	Member
Hermelinda Visapa	Uculinga Upangue FFS	Cunje - Bié	Member
Adelina Nambabioolo	Uculinga Upangue FFS	Cunje - Bié	Member
Paulo Elísio	ECA Ecule / Coop. Lucengue	Cunje - Bié	President
Elias Cambimbi	ECA Ecule / Coop. Lucengue	Cunje - Bié	Facilitator
Basílio Elísio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Secretary
Monica Natombela	ECA Ecule / Coop. Lucengue	Cunje - Bié	Treasurer
Domingos Francisco	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Alberto Júlio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Afonso Sapalo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Feliciano Salohambi	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Bartolomeu Dias	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Fernando Vitangue	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Domingas Cafeca	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Adriana Mbaca	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Adriana Nassume	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Mizelia Cassinda	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Anita Natchumbo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Manuel Basílio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Natália Navundo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Celestina Teresa	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Domingas Chilombo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Veronica Candumbua	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Vitoria Nalongolo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Fernando Vitangue	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Fernando Ngongoiavo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Domingas Candive	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member

Appendix 1. People interviewed

Name	Organization	Location	Position
Sebastião Manuel	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Domingos Camutale	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Augusta Cambundo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Pascoal Cufa	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Adelina Cambundo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Valentina Cilengo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Esperança Capunduva	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Rosaria Natchimonhio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Donieta Lussati	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Elina Cassova	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Maria Lussinga	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Eurico Huambo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Alberto Júlio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Maria Lucas	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Vasco Saponda	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
David Tchendovava	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Judith Henhengo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Evalina Cassova	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Augusto Inacio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Aida Namchila	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Teresa Wimbo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Filipe Ndumbo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Manuel Ngombi	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Vasco Amaral	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Lucas Sanguende	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Cristina Natchame	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Cristina Rosa	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Isabel Nassapalo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member

Name	Organization	Location	Position
Veronica Cassoma	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Justino Cassengue	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Alberto Julio	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Evaristo Napindo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Domingos Canindo	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Latina Cassinda	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Júlio Alberto	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Gabriel Chimunge	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Domingas Navingueia	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Rita Catarina	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Joaquim Cateco	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Adelina Cassoma	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Luciano Sacumbi	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Josilia Nacutala	ECA Ecule / Coop. Lucengue	Cunje - Bié	Member
Dr. Abram Bicksler	Former Lead Technical Officer	Remotely	Technical person

Appendix 2. GEF evaluation criteria rating table

GEF criteria/dimensions	Rating	Summary comments
A. OUTCOMES (relevance, coherence, effectiveness and progress to impact, efficiency)	**MS**	
A1. Relevance	**S**	See Finding 1 and Finding 2
A2. Coherence	**S**	See Finding 3
A3. Effectiveness	**MS**	See Finding 5, Finding 6, Finding 7, Finding 8, Finding 9, Finding 10, Finding 11, Finding 12 and Finding 13
A4. Efficiency	**MU**	See Finding 4
B. SUSTAINABILITY (financial, sociopolitical, institutional and governance, environmental dimensions including risks to sustainability)	**MU**	See Finding 14, Finding 15, Finding 16, Finding 17, Finding 18 and Finding 19
C. IMPLEMENTATION	**MS**	See Finding 22 and Finding 23
D. EXECUTION	**S**	See Finding 24, Finding 25, Finding 26 and Finding 27
E. M&E design	**HU**	See Finding 29
F. M&E implementation	**MU**	See Finding 30
Overall project rating	**MS**	

Notes:

Outcomes/Implementation and execution/ Monitoring and evaluation ratings: Highly satisfactory (HS); Satisfactory (S); Moderately satisfactory (MS); Moderately unsatisfactory (MU); Unsatisfactory (U); Highly unsatisfactory (HU); Unable to assess (UA)

Sustainability ratings: Highly likely (HL); Likely (L); Moderately likely (ML); Moderately unlikely (MU); Unlikely (U); Highly unlikely (HU); Unable to assess (UA)

Source: Terminal Evaluation

Appendix 3. Status of project output indicators

Outcome / Output number	Output indicator	Planned target (per revised project document)	Status as of February 2023
Outcome 1 Output 1.1	Staff from the Ministry of Environment, the Ministry of Agriculture and Fisheries, the Ministry of Commerce and provincial government staff as well as civil society organizations, academia and research institutions, trained and aware of CCA and SLM practices in crop-livestock production systems.	170 105 (year 1) 65 (year 2)	170 staff trained
Output 1.2	Rapid vulnerability assessment conducted, and relevant staff trained to ensure regular updating of vulnerability information.	Rapid climate vulnerability assessment conducted and relevant staff trained (output 1.2 and Activity 1.2.3)	A total of 61 IDA, Forestry Development Institution and Institution for Veterinary Services technicians were trained to implement the FFS methodology in the provinces of Huíla and Cunene. The rescue of historical meteorological data for 1971–2000 and 2005–2015 concluded. The Participatory Survey with Agroecological Approach (PSAA) methodology was conducted, but it's unclear if the results influenced the selection of FAO resilience technician training topics.
Outcome 2	Farmers adopt CCA/SLM practices.	115 000	Approximately 6 064 project beneficiaries, of whom 3 150 are women (against a target of 4 000), from 185 new FFS established in Huíla province adopt CCA/SLM practices[1] In coordination with the IDA and the provincial Directorate of Agriculture CCA and SLM practices covered around 7 850 small farmers in the provinces of Huíla and Cunene (FAO, 2022b).

[1] The 115 000 target was set up taking into account that FFS have already been established in Bié, Huambo and Malanje provinces through the MOSAP II project and assuming that IRCEA would be implemented in all four provinces (including Huíla) and would support around 5 150 FFS overall. This means that around 154 500 farmers were expected to benefit from the project. Among these, 75 percent of FFS members would adopt climate resilient technologies/practices, which is equivalent to at least 115 000 farmers.

Outcome / Output number	Output indicator	Planned target (per revised project document)	Status as of February 2023
Output 2.1	A core group of master trainers and FFS facilitators involved in MOSAP II trained in CCA and SLM practices.	Re-train previous master trainers and facilitators from MOSAP II, and for future master trainers and facilitators in Bié, Huambo and Malanje provinces.	18 master trainers in climate-smart agriculture (CCA/SLM) practices were trained under MOSAP II with funding from FAO in the province of Bié. They then trained 234 facilitators (24 women) for each FFS. IRCEA provided refresher trainings to both groups on the FFS methodology, good monitoring and evaluation practices, and data collection using Kobo Collect to upgrade the FFS Platform M&E system.
Output 2.2	New FFS in Huíla trained on CCA/SLM.	150	185
	Number of beneficiaries assisted in 4 target municipalities in Huíla province.	4 000	6 064
	Proportion of total beneficiaries who are women.	30%	52%
Outcome 3 Output 3.1	Inter-sectoral task forces in place/strengthened, defining integrated CCA agendas and tailoring them into sector-level programming.	-Inter-ministerial commission for biodiversity and climate change. - Technical proposal developed. - An institutional task force on CCA. - A 5-year strategy for future sectoral programming and budgeting. -Annual planning and budgeting processes at the Ministry of Environment, the Ministry of	A Presidential Decree on the National Environment, Climate and Biodiversity updated the National Committee, allowing IRCEA to engage with the Ministry of Culture, Tourism and Environment to support sectoral meetings and create a task force. A legal opinion was commissioned to support the strategy for integrating adaptation to climate change (CCA) into sectoral public policies. However, this integration was not achieved within the lifetime of the project and remains an ongoing task.

Outcome / Output number	Output indicator	Planned target (per revised project document)	Status as of February 2023
		Agriculture and Fisheries and the Ministry of Commerce.	
Output 3.2	Climate change adaptation integrated into an effective land and natural resources management system in 3 municipalities	Natural resource management systems developed in the 4 intervention municipalities of Caconda, Caluquembe, Chicomba and Quilengues in the province of Huíla.	FAO made effort to engage with the provincial government of Huíla to issue 54 community land titles. The inclusive land and natural resource management systems are being implemented in the target municipalities in line with the activities undertaken in FFS.
Outcome 4 Output 4.1	Project monitoring system providing systematic information on progress in meeting project outcomes and output targets.	Project outcomes fully achieved and showing sustainability. By mid-term, a 60% progress realised in achieving project outcomes.	The digitization of the M&E system through the FFS Platform and Kobo Collect tool enabled faster, more effective data access and reduced paper use. 28 technicians and master trainers, including from EDA, were trained to operate the new digital FFS Management Information System using Kobo Collect, providing timely data availability.

Outcome / Output number	Output indicator	Planned target (per revised project document)	Status as of February 2023
Output 4.2	Project-related "best-practices" and "lessons learned" disseminated via publications and other means.	Project best practices and lessons learned collected, compiled and disseminated through annual newsletters, and reports.	With IRCEA support, an illustrative catalogue (Agroecological Atlas) of plants with agroecological and medicinal potential was developed. Guidelines for establishing agrobiodiversity centres were also created in the four municipalities.

Source: Terminal Evaluation based on FAO secondary data

Appendix 4. GEF co-financing table to the IRCEA project envisaged at project approval phase

Name of the co-financer	Co-financer type[1]	Type of co-financing[2]	Co-financing at project start (Amount confirmed at GEF CEO endorsement/approval by the project design team) (in USD)			Materialized co-financing at project mid-term (in USD)		
			In-kind	**Cash**	**Total**	**In-kind**	**Cash**	**Total**
Ministry of Environment			200 000		3 325 000			
	Contente			2 000 000				
	Novo Rumo			1 125 000				
Ministry of Agriculture and Fisheries	Smallholder Agriculture Development and Commercialization Project			13 500 000	13 500 000			
Ministry of Commerce	PMIDRCP			2 494 230	2 494 230			
FAO	Terra			4 000 000	4 300 000			
			300 000					
Sub-total co-financing					23 619 230			
Total Budget (in USD)					**30 287 412**			

IRCEA Co-Financing Table as of 30 June 2019

Sources of Co-financing	Name of Co-financer	Type of Co-financing	Amount confirmed at CEO endorsement / approval amount (in USD)	Actual amount materialized 30 June 2019 (in USD)
	FAO	In-kind	4 300 000	1 400000
National government	Ministry of Environment	In-kind	3 325 000	3 000 000
National government	Ministry of Agriculture	In-kind	13 500 000	6 000 000
National government	Ministry of Commerce	In-kind	2 494 230	1 500 000
		TOTAL	23 619 230	11 900 000

Source: Adapted from FAOAO

[1] Examples of categories include: local, provincial or national government; semi-government autonomous institutions; private sector; multilateral or bilateral organizations; educational and research institutions; non-profit organizations; civil society organizations; foundations; beneficiaries; GEF agencies; and others.

[2] Grants; loans; equity participation by beneficiaries (individuals) in form of cash; guarantees; in-kind or material contributions; and others.

IRCEA Financial statement from November 2022 to 9 March 2023

Account description	Soft commitment (in USD)	Hard commitment (in USD)	Total commitments (in USD)	Actuals (in USD)	Commitments & actuals (in USD)
5011 Salaries Professional	0	0	0	0	0
5013 Consultants	0	(286 967)	(286 967)	316 379	29 412
5014 Contracts	(54 383)	(32 924)	(87 307)	42 156	(45 151)
5020 Locally Contracted Labour	0	(442)	(442)	703	261
5021 Travel	(3 090)	(26 331)	(29 421)	132 100	102 679
5023 Training	(482)	(98 463)	(98 945)	119 068	20 123
5024 Expendable Procurement	(484 597)	(352 565)	(837 162)	831 019	(6 143)
5025 Non-Expendable Procurement	0	(54 889)	(54 889)	56 266	1 377
5027 Technical Support Services	0	0	0	156	156
5028 General Operating Expenses	(18 577)	(19 511)	(38 088)	58 555	20 467
5040 General Operating Expenses - External Common Services	0	0	0	0	0
5050 Internal Common Services and Support	0	0	0	0	0
Totals	**(561 129)**	**(872 092)**	**(1 433 221)**	**1 556 402**	**123 181**

Source: Elaborated by the FAO Angola Country Office.

Appendix 5. Evaluation matrix

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
Relevance	I	**Was the project design appropriate for delivering the expected outcomes?**				
	1.1.	Were the project outcomes congruent with the GEF focal areas/operational programme strategies, country priorities and FAO Angola's Country Programming Framework?	• Alignment with needs assessments, country and regional agriculture and environment strategies. • Evidence of alignment and complementarity with government-led responses, e.g. cases where FAO supported the national response or national counterparts implemented FAO-funded interventions. • Evidence of efforts to seek coherence and synergies with interventions in the agriculture, environment and climate change adaptation clusters and related institutions.	• Government representatives at central and municipality levels. • FAO personnel at country office and regional office in Lubango, resilience technicians, master trainers, former project officers. • IRCEA FFS members in Huíla province: • MOSAP II FFS members in Bié province. • Agricultural research and academia representatives	Document analysis, KII and FGD	IRCEA project document, FAO resilience strategy key informant interviews (KII) and FGD guide.
	1.2.	Has there been any change in the relevance of the project since its design, such as new national policies, plans	• Evidence of consistent project interventions throughout implementation. • Evidence of national policies, strategies or plans endorsing and/or scaling up the climate change adaptation/sustainable land	• Government representatives at central and municipal levels.	Document analysis. Portfolio analysis Minutes from the Project Steering Committee meetings. KII	IRCEA project document. Integrated Plan for Acceleration of Family Agriculture and Fishing (PIAAPF); National climate policy monitoring, reporting

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
		or programmes that affect the relevance of the project objectives and goals?	management approach as part of government's future priorities.	• FAO personnel at country office and regional office in Lubango, resilience technicians, master trainers, former project officers. • IRCEA FFS members in Huíla province • MOSAP II FFS members in Bié province • Agricultural research and academia representatives	FGD	and verification system (Government of Angola, 2022); National Strategy for Climate Change. KII interview guide FGD interview guide.
	1.3.	To what extent has the project responded to identified capacity needs across the three capacity development dimensions, and how have they capitalized on existing capacities?	• Evidence of replication of training activities to line technicians in key ministries by senior level technicians trained in Italy and in-country. • Evidence of Participatory Community Land Delimitation activities by cadastral technicians in the 4 municipalities. • Evidence of capacity needs assessment conducted.	• Central level government officials trained in agroclimatology in Italy • Technicians from municipal administrations and civil society organizations • Agricultural extension agents	Document analysis. Portfolio analysis Minutes from the Project Steering Committee meetings; KII; FGD.	Project Steering Committee meeting notes; ADRA *Relatório da formação sobre a metodologia da Delimitação Participativa de Terras Comunitárias*; KII interview guide FGD interview guide

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
				• Representatives from agricultural training institutions (e.g. the José Eduardo dos Santos University and Wongo Agricultural Training Institute).		
	II	Was the project design congruent with the GEF focal areas/operational program strategies, government priorities and FAO Angola's Country Programming Framework?				
	2.1.		• Existence, in the project Document, of aspects drawn from GEF priority areas and FAO Angola Country Program including but not limited to CCA/SLM thematic, areas of interventions, common objectives and strategies adequately embedded.	FAO personnel; Government representatives at central and municipality level; GEF political and technical focal points; FFS members.	Document analysis; KII; FGD;	• IRCEA project document • PIAAPF • National climate policy monitoring, reporting and verification system document • National Climate Change Strategy • KII interview guide • FGD interview guide • National Strategy for Food Security and Nutrition (ENSAN)
	III	Was the project design coherent with SDG13 and SDG2 goals and targets, as well as with relevant international conventions and agreements (e.g. UNFCCC)?				
	3.1.		• Extent to which metrics from the UN 2030 Agenda, regional or international programs and conventions on climate change, resilient livelihoods and climate-smart	FAO personnel. Government representatives at	Document analysis; KII;	Interview guide; project document;

Appendix 5. Evaluation matrix

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
			agriculture are identified in the IRCEA project document.	central level, FFS members.		
	IV	Were there any contextual changes which may have affected its relevance (e.g. new national policies, plans or programmes, disasters or emergencies, the Covid-19 pandemic)?				
	4.1.		• Evidence of contextual analysis conducted.	FAO personnel; Government representatives at central level, FFS members in target municipalities.	Document analysis; KII;	Interview guides; Reports; Questionnaire; Government sectoral policies.
	V	To what extent has the project responded to identified capacity needs across the three capacity development dimensions, and how have they capitalized on existing capacities?				
	5.1.		• Evidence of multi-sectoral needs assessment conducted on resilient agricultural/pastoralist livelihoods and environment.	Municipal administrators, FAO personnel. Government representatives at central level, FFS members in affected communes.	Document analysis. KII; FGD.	Interview guides; Reports; Questionnaire; Government sectoral policies.
Effectiveness of results	VI	**To what extent and how effectively has the project objective been achieved?**				
	6.1.	To what extent have project objectives been achieved, and were there any unintended results?	• Extent to which interventions generated the goal formulated ex-ante in the project document;	FAO personnel; Government representatives at central and municipal levels; FFS members in target communities.	Document analysis; KII; FGD.	Interview guides; Reports; Questionnaire; Government sectoral policies.
	6.2.	To what extent did the target of 115 000 farmers adopt climate change adaptation (CCA)	• Evidence of mastery newly introduced climate-resilient farming practices by targeted farmers in their FFS demo plots and homesteads;	FFS members in target communities;	FGDs; KII; Document analysis Direct observation.	Interview guide; project document;

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
		and sustainable land management (SLM)?		FAO resilient technicians; Government representatives; FAO personnel.		
	6.3.	To what extent are CCA aspects integrated into Environmental and agriculture policies and programs at national and decentralized level?	• Evidence of climate change adaptation topics, training curricula, and actions addressing all dimensions of resilience mainstreamed in Angola's agricultural and environmental policies and implementation strategies post-IRCEA. • Evidence of resilience-oriented components within projects/programs in Angola.	FFS members in target communities. FAO resilient technicians. Government representatives. FAO personnel; Government representatives.	Policy analysis; KII; Document review.	Interview guides; Government policies; Questionnaire
	6.4.	To what extent can the attainment of results be attributed to the GEF-funded component?	• Evidence of positive or negative changes in agropastoral households' resilience status connected to services put forth by IRCEA.	FFS members in target communities. FAO resilient technicians. Government representatives. FAO personnel. Government representatives.	FGDs; KII; Document analysis	Interview guides. Government policies. Questionnaire
	6.5.	To what extent did the intervention enhance target beneficiaries' functional and technical skills and their knowledge?	• Target beneficiaries demonstrating practical knowledge of CCA/SLM farming practices learned from the project.	FFS members in target communities. FAO resilient technicians. Master trainers. Government representatives. FAO personnel.	FGDs; KII; Document analysis. Direct observation.	

Appendix 5. Evaluation matrix

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
	6.6.	To what extent has the capacity development intervention contributed to changed behaviour/attitudes?	• Target beneficiaries demonstrating intended positive change in response to the capacity building program implemented by IRCEA.	FFS members in target communities. FAO resilient technicians; Master trainers. Government representatives. FAO personnel.	FGDs; KII; Document analysis. Direct observation.	KAP survey. Project reports. Third-party reports including Mid-Term Evaluation report.
	6.7.	Are target beneficiaries implementing/using and demonstrate changes in attitudes and practices?	• Evidence of target beneficiaries replacing traditional slash and burn/ shifting cultivation practices with newly learned SLM techniques.	FFS members in target communities. FAO resilient technicians. Master trainers. Government representatives. FAO personnel.	FGDs; KII; Document analysis. Direct observation.	KAP survey. Project reports. Third-party reports including Mid-Term Evaluation report.
	6.8.	To what extent did the intervention contribute to improve the performance of the organization, promote institutional changes and informed decision making in the concerned development sector?	• Areas in which FAO adapts internal procedures as a result of lessons learned.	FAO personnel; Government representatives;	KII; Document analysis	Institutional Reports Interview guides
	6.9.	What are the outcomes at enabling environment level, within the intervention/country programme framework?	• Evidence of lasting results in FAO programmatic cycle, strategic plans, projects and partnerships.	FAO personnel; Government representatives;	KII; Document analysis	Institutional Reports Interview guides

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
Efficiency	VII	**To what extent has the project been implemented efficiently, cost-effectively, and has management been able to adapt to any changing conditions to improve the efficiency of project implementation?**				
	7.1.		• Demonstrated generation of maximum benefits to intended beneficiaries with available resources. • Evidence of seamless FAO administrative support to project implementation. • Extent to which FAO operations (hiring, procurement, processing agreements) were adequate and up to the task. • Evidence of adequacy of FAO's coordination of operations.	• FAO personnel including Resilience Technicians in Lubango regional office • FAO senior management and program officers at Country Office • Project focal points in key government ministries • Service providers and/or implementing partners with agreements (LOAs) signed with FAO.	Document analysis. KII; FGD.	Project reports; External reports including Mid-Term Evaluation report and audit reports; KII and FGD guides.
	VIII	Was the project cost-effective? How does the project cost/time versus output/outcomes equation compare to that of similar projects?				
	8.1.		• Extent to which project results constitute Value for Money.	FAO personnel; Government representatives; Service providers and / or implementing partners who had	Document analysis KII	Project reports; External reports including Mid-Term Evaluation report and audit reports; KII and FGD guides. FAO financial reports. Country annual reports.

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
				LOAs signed with FAO.		
Sustainability	IX	**What is the likelihood that the project results will continue to be useful or will remain even after the end of the project?**				
	9.1.		• Evidence of a sustainability/exit strategy and its implementation status. • Evidence and/or prospects of scaling up IRCEA results. • Extent to which national/local capacities are used or continue to be used to sustain positive changes after project closure. • Evidence of national/local ownership.	FAO personnel including resilience technicians; Government representatives; implementing partners; FFS members in target municipalities; master trainers; service providers i.e. ADRA, ICED, etc.	Document analysis KII	Project reports; External reports including Mid-Term Evaluation reports; KII and FGD guides. Country annual reports.
	9.2.	What are the key risks which may affect the sustainability of the project benefits?	• List of potential risks, their likelihood to occur, potential impact, proposed mitigation measures.	FAO personnel; Government representatives; Implementing partners; FFS members; master trainers.	Document analysis; KII; FGD.	Project reports; External reports including Mid-Term Evaluation report; KII and FGD guides. Risk analysis matrix. Government documents..
	9.3.	How sustainable are the achieved results on capacity development?	• Proven ability of goods and services generated by the project being able to continue building systems and skills that can support beneficiaries and institutions´ resilience.	FAO personnel; Government representatives; Implementing partners; FFS members; Master Trainers.	Document analysis; KII; FGD.	Project reports; External reports including Mid-Term Evaluation report; KII and FGD guides. Government documents..
	9.4.	What mechanisms are in place to ensure sustainability?	• Evidence of existence of key success factors put in place to ensure continuity of results in an autonomous manner.	FAO personnel; Government representatives;	Document analysis; KII.	Project reports; External reports including Mid-Term Evaluation report; KII guides. Government documents..

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
	9.5.	To what extent did the achievement of capacity development outputs and outcomes contribute to development outcomes?	• Connection between project results and long-term impacts. • Extent of farmers' transition from recovery to resilient livelihoods and development.	FAO personnel. Government representatives; Implementing partners; FFS members; Master Trainers.	Document analysis; KII; FGD.	Project reports; External reports including Mid-Term Evaluation report; KII and FGD guides. Government documents..
	9.6.	What are the cumulative and/or long-term effects expected/resulted from the capacity development intervention, including contribution towards the intended impact, positive or negative impacts, or intended or unintended changes?	• Evidence of presence or absence of lasting side benefits conducive to aggregate better living conditions.	FAO personnel; Government representatives;	Document analysis; KII.	Project reports; External reports including Mid-Term Evaluation report; KII guide.
	9.7.	How has the intervention generated transformational change contributing to (or having the potential to contribute to) capacity development and the creation of spillover effects with positive interconnections?	• Key aspects in which project results have positively affected all three dimensions of resilience.	FAO personnel; Government representatives;	Document analysis; KII.	Project reports; External reports including Mid-Term Evaluation report; KII guide.

Appendix 5. Evaluation matrix

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
	9.8.	To what extent did FAO deliver on project identification, concept preparation, appraisal, approval and start-up, oversight and supervision?	• Evidence of climate vulnerability assessment, resilience needs mapping, and tailored actions for agropastoral populations in target areas. • How project interventions holistically addressed climate change vulnerability. • FAO's resource mobilization and deployment for project implementation.	FAO personnel. GEF focal points;	Document analysis; KII.	Project document and reports; External reports including MTE report;
	9.9.	How well risks were identified and managed	• Evidence of context analysis conducted leading to risk mapping and measures taken to mitigate them throughout project implementation.	FAO personnel; Government representatives. GEF focal point.	Document analysis, KII	Project document and progress reports. External reports including MTE report. KII guide.
	9.10.	To what extent did the execution agency effectively discharge its role and responsibilities related to the management and administration of the project?	• Extent to which LOAs were delivered upon as mutually signed.	FAO personnel, Implementing entities; Government officials,	Document analysis, KII	FAO annual reports; External reports including Mid-Term Evaluation report. Steering committee meeting notes, KII guide.
	9.11.	Was the M&E plan practical and sufficient? (M&E Implementation)	• Existence of M&E plan tailored to project interventions.	FAO personnel in Luanda and Lubango offices including Resilience Technicians; Government officials;	Document analysis KII	M&E Plan; Information Management System (MIS); Interview guides

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
				Implementing partners; FFS members		
	9.12.	Did the M&E system operates as per the M&E plan?	• Extent to which M&E provided useful data for shaping and steering the project as well as for accounting and reporting to FAO, government and the GEF.	FAO personnel in Luanda and Lubango offices including Resilience Technicians; Government officials; Implementing partners; FFS members	Document analysis; KII	M&E Plan; Information Management System (MIS); Interview guides
	9.13.	Was information gathered in a systematic manner, using appropriate methodologies?	• Traceability of pathway, data quality protocol, timeframe and other methodological parameters followed in assembling primary and administrative data.	FAO personnel; Government officials; Implementing partners; GEF focal point.	Document analysis; KII	M&E Plan; Information Management System (MIS); Interview guides
	9.14.	Was the information from the M&E system appropriately used to make timely decisions and foster learning during project implementation?	• FAO adopts an evidence-based decision-making culture and adapting based on information generated from IRCEA M&E system.	FAO senior management; Government officials; Implementing partners; GEF focal point.	Document analysis, KII	FAO Financial reports; Internal/external auditing reports; Mid-Term Evaluation report; KII guide.
	9.15.	To what extent did the expected co-financing materialize, and how short fall in co-financing or	• Existence of a resource mobilization strategy and its outcomes. • Evidence of resource mobilization support from RAF and FAO globally.	FAO senior management. Government officials; Implementing partners; GEF focal point.	Document analysis, KII	FAO Financial reports; Internal/external auditing reports; Mid-Term Evaluation report; KII guide.

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
		materialization of greater than expected co-financing affected project results?				
	9.16.	Were other actors, such as civil society, indigenous population or private sector involved in project design or implementation, and what was the effect on the project results?	• Evidence of community consultations conducted with indigenous population groups, women, pastoralist communities. • Extent to which FAO protected and incorporate indigenous knowledge in its community engagement initiatives. • Extent to which social was deliberately mainstreamed in project strategies and interventions and was implemented.	FFS members FAO personnel at central and Lubango level.	KII; FGDs; Document analysis;	Interview guides Reports Questionnaire
	9.17.	How is the project assessing, documenting and sharing its results, lessons learned and experiences?	• Evidence of good practices and templates devised by FAO to generate and incorporate knowledge and practices into internal systems.	FAO personnel at central and Lubango level. Implementing partners; Steering Committee members	KII; Document analysis;	Interview guides Reports Questionnaire
	9.18.	To what extent are communication products and activities likely to support the sustainability and scaling-up of project results?	• Evidence of connection between information, communication and education materials with continued change in attitudes and behaviour.	• FAO personnel centrally and in Lubango. • Implementing partners. • Steering Committee members.		

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
	9.19.	To what extent were environmental and social concerns taken into consideration in the design and implementation of the project?	• Measures to prevent soil and groundwater pollution. • Accessible complaint and dialogue mechanisms for residents.	• FAO personnel centrally and in Lubango. • Implementing partners. • Steering Committee members.	KII. FGD; Document analysis;	Interview guides Reports Questionnaire
Gender	X	**To what extent were gender considerations considered in designing and implementing the project?**				
	10.1.	To what extent did manuals, guides, trainings, tools, and other knowledge products in general, as well as policies and plans included gender con siderations?	Extent to which gender and equity considerations were mainstreamed in strategies and implementation	FAO personnel centrally and in Lubang. Implementing partners; GEF focal points. FFS members	KII; FGD; Document analysis;	Interview guides Reports Questionnaire
	10.2.	Was the project implemented in a manner that ensures gender equitable participation and benefits?	Extent of gender-disaggregated data collection and use, including for gender/equity analysis and program design/implementation.	FAO personnel centrally and in Lubango. Implementing partners; GEF focal points. FFS members	KII; FGD; Document analysis;	Interview guides Reports Questionnaire
Progress to Impact	XI	**To what extent may the progress towards long-term impact be attributed to the project?**				
	11.1.	Was there any evidence of environmental stress reduction and environmental?	Evidence of national policy instruments emphasizing environmental protection to address climate vulnerability.	FAO personnel centrally and in Lubango. Implementing partners;	KII; FGD; Document analysis;	Interview guides Reports Questionnaire

Evaluation Themes		Evaluation Questions & Sub-questions	Indicators	Target Respondents	Data Collection Method	Tools/Data Sources
		status change, or any change in policy/legal/regulatory framework?		GEF focal points. FFS members.		
	11.2.	Are there any barriers or other risks that may prevent future progress towards long-term impact?	Identified threats to resilient livelihoods for local agropastoral populations from systems, policies, economy, etc.	FAO personnel centrally and in Lubango. Implementing partners; GEF focal points. FFS members.	KII; FGD; Document analysis;	Interview guides Reports Questionnaire
Lessons to inform future policies and plans (cross-cutting)	XII	**What knowledge has been generated from project results and experiences, that has a wider value and potential for broader application, replication and use?**				

Annex

Annex 1. Terms of reference

http://www.fao.org/3/cc3477en/GCP_ANG_050_LDF_Annex_1.pdf

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