

Terminal Evaluation

UNEP/ GEF Project “Multi Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making” (GEF ID 5283)



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It is hoped that these findings, conclusions and recommendations will inspire, guide and be useful in improving the work of the MCP-ICLT/ LMO project, the GEF Biosafety Programme's Thematic support on LMO Detection and other projects implemented to support the Cartagena Protocol on Biosafety.

Brief consultant biography

Ms. Federica Pilia is a senior Specialist in Social Development and International Evaluation with extensive experience in the coordination, management and evaluation of development projects. She has a strong understanding of complex contexts, particularly in Africa, especially in Portuguese-speaking countries, including capacity development and the role of different stakeholders in political and democratic participation. She also has experience in capacity building and relations with government institutions at all levels, NGOs, UN agencies (including UNDP, UNICEF, FAO and WFP), the private sector and donors, and a clear understanding of the issues involved in achieving community development.

Mr. Vassen Kauppaymuthoo is a Registered Professional Environmental Engineer, an Oceanographer and Lawyer with more than 28 years working experience in the field in Small Island Developing States, Africa and the Southwestern Indian Ocean. His multi-disciplinary competence and approach together with his working experience with international and regional organisations (including UNEP, UNDP, ILO, NORAD, JICA, AFD, IOC) governments, academics, the private sector and CBOs/NGOs have allowed him to acquire an integrated analytical perspective to set up, manage, conduct and evaluate projects using a transversal approach in the context of the implementation of the international conventions and protocols and GEF funding.

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About the evaluation

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Evaluation Type: Terminal Evaluation

Brief Description: This report is a Terminal Evaluation of the UNEP/GEF Project “Multi Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making” (GEF ID 5283), implemented between July 2017 and December 2022. The overall objective of the project was therefore to build and strengthen institutional and human capacities for the detection of LMOs to support national biosafety decision-making processes in selected countries in Southern Africa: Angola, DRC, Lesotho, Madagascar, Malawi and Mozambique. The evaluation had two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP, GEF and the relevant agencies of the project participating countries.

Key words: LMO Detection, Biosafety, Equipment and Human Capacity Development, Environment, Cartagena Protocol on Biosafety (CPB), Regional Cooperation in SADC, Socio-political and Institutional Sustainability, GEF Project Evaluation.

Primary data collection period: February 2024 – April 2024

Field mission dates:

- **Field mission 1:** Angola, 28 February to 1 March 2024
- **Field mission 2:** South Africa, 10 to 16 March 2024
- **Field mission 3:** Mozambique, 16 to 20 March 2024
- **Field mission 4:** Lesotho, 18 to 20 March 2024
- **Field mission 5:** Malawi, 20 to 23 March 2024
- **Field mission 6:** South Africa, 23 to 27 March 2024
- **Field mission 7:** Madagascar, 8 to 11 April 2024

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Abbreviations

AICS	Italian Agency for Development Cooperation
ANUBIS	A New UNEP Biosafety Information System
CBD	Convention on Biological Diversity
CFT	Confined Field Trial
CNA	Competent National Authority
CPB	Cartagena Protocol on Biosafety
CRENK	Centre Regional d'Etudes Nucleaires de Kinshasa
DNA	Deoxyribonucleic Acid
DRC	Democratic Republic of the Congo
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GM	Genetically Modified
GMO	Genetically Modified Organism
IIAM	Agriculture Research Institute of Mozambique
LEA	Lead Executing Agency
LMO	Living Modified Organism
MCP-ICLT	Multi-Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making, or the "LMO project" (GEF ID 5283)
MEA	Multilateral Environmental Agreement
MTR	Mid Term Review
MTS	Medium-Term Strategy (UNEP)
MoU	Memorandum of Understanding
NBF	National Biosafety Framework
NEA	National Executing Agency
NGO	Non-Governmental Organisation
PMU	Project Management Unit
PoW	Programme of Work
PPG	Project Preparatory Grant
PQD	Project Quality Design
PRC	Polymerase Chain Reaction (DNA testing method)
ProDoc	Project Document
PSC	Project Steering Committee
QMS	Quality Management System
RAEIN-Africa	Regional Agricultural and Environmental Innovations Network-Africa
RSC	Regional Steering Committee
SADC	Southern Africa Community Development
SANGL	Southern African Network of GM Detection Laboratories
SDG	Sustainable Development Goals
SINBF	Strengthening the Implementation of National Biosafety Frameworks in Southern Africa (GEF ID 10584)
ToC	Theory of Change
ToR	Terms of Reference
ToT	Training of Trainers
UN	United Nations
UNEP	United Nations Environment Programme

Project identification table

Table 1. Project identification table

GEF Project ID:	5283		
Implementing Agency:	UNEP	Executing Agency:	Regional Agricultural and Environmental Innovations Network-Africa (RAEIN-Africa)
Relevant SDG(s) and indicator(s):	Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture. Target: 2.5 - By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels [BIOSAFETY], and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed. Indicator - 2.5.1: Number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities. Indicator - 2.5.2: Proportion of local breeds, classified as being at risk, not-at-risk or unknown level of risk of extinction.		
GEF Core Indicator Targets (identify these for projects approved prior to GEF-7¹)	BD 3: Implementation of the Cartagena Protocol on Biosafety		
Sub-programme:	Healthy and Productive Ecosystems (SP3) Environmental Governance (SP4)	Expected Accomplishment(s):	EA(a) The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sector and transboundary collaboration frameworks at the national and international levels. EA (b): Institutional capacities and policy and/or legal frameworks enhanced to achieve internationally agreed environmental goals, including the 2030 Agenda for Sustainable Development and the Sustainable Development Goals.
UNEP approval date:	30 May 2017	Programme of Work Output(s):	Institutional capacity and harmonised networks to support management of transboundary movement of Living Modified Organisms.
GEF approval date:	05 December 2016	Project type:	Full Size Project
GEF Operational Programme #:	GEF V	Focal Area(s):	Biodiversity
		GEF Strategic Priority:	BD3
Expected start date:	1 June 2017	Actual start date:	1 July 2017
Planned operational completion date:	29 December 2021	Actual operational completion date:	30 December 2022
Planned project budget at approval:	USD10,406,752	Actual total expenditures reported	USD10,346,751.86 ²

¹ This does not apply for Enabling Activities.

² The reported expenditure is less the USD60,000 allocated for this Terminal Evaluation.

GEF Project ID:	5283		
		as of 31 December 2022:	
GEF grant allocation:	USD3,860,000	GEF grant expenditures reported as of 23 May 2023:	USD3,800 000
Project Preparation Grant - GEF financing:	USD115,000	Project Preparation Grant - co-financing:	USD115,000
Expected Full-Size Project co-financing:	USD 6,546,752	Secured Full-Size Project co-financing:	USD6,546,752
Date of first disbursement:	01 July 2017	Planned date of financial closure:	30 June 2023
No. of formal project revisions:	5	Date of last approved project revision:	29 June 2022
No. of Regional Steering Committee meetings:	6	Date of last Steering Committee meeting:	Last: 26 June 2022
Mid-term Review (<i>planned date</i>):	April 2019	Mid-term Review/ (actual date):	May 2019
Terminal Evaluation (<i>planned date</i>):	June 2023	Terminal Evaluation (actual date):	July 2023
Coverage - Countries:	Angola, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mozambique	Coverage - Region:	Africa (Southern Africa)
Dates of previous project phases:	N/A	Status of future project phases:	GEF ID 10584 (FSP) – Strengthening the Implementation of National Biosafety Frameworks in Southern Africa (SINBF) [DRC, Madagascar, Namibia] - CEO Endorsed, Internationalisation completed, first cash advance disbursed. Project is under implementation https://www.thegef.org/projects-operations/projects/10584

Executive summary

Project background

1. The United Nations Environment Programme/ Global Environment Facility (UNEP/GEF) Project “Multi Country Project to Strengthen Institutional Capacities on Living Modified Organism (LMO) Testing in Support of National Decision Making” (MCP-ICLT) and referred to as the “**MCP-ICLT/ LMO project**” or “**LMO project**” (GEF ID 5283) is part of the UNEP Medium-Term Strategy's subprogrammes on Healthy and Productive Ecosystems (SP3) and Environmental Governance (SP4), aiming to strengthen environmental governance at various levels to support the implementation of Multilateral Environmental Agreements (MEAs). Specifically, it contributed to achieving the GEF strategic objective BD3, focusing on building capacity to implement the Cartagena Protocol on Biosafety and integrating obligations of the Convention on Biological Diversity (CBD) into national planning processes.
2. The main objective of the LMO project was to "contribute to ensuring an adequate level of protection in the field of the safe transfer, handling, transport, and use of LMOs resulting from LMOs that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and specifically focusing on transboundary movements."³ The overall objective of the project was therefore to build and strengthen institutional and human capacities for the detection of LMOs to support national biosafety decision-making processes in selected countries in Southern Africa: Angola, Democratic Republic of the Congo (DRC), Lesotho, Madagascar, Malawi and Mozambique.
3. The project was designed with four operational project components mirroring the project's expected outcomes and had a total budget of USD10,406,752 inclusive of USD6,546,752 in co-financing as co-financing and a GEF Trust Fund Grant of USD3,860,000. The implementation of the project was overseen by the Task Manager in the GEF Biodiversity and Land Degradation Unit, Biodiversity and Land Branch of the Ecosystems Division, UNEP and executed by Regional Agricultural and Environmental Innovations Network-Africa (RAEIN-Africa) in South Africa working closely with the competent national authorities of project countries.
4. UNEP played a pivotal role as the GEF implementing agency, providing overarching supervision and technical support to the project. This involvement ensured that the project aligned with global environmental goals and standards. Regionally, RAEIN-Africa, operating as the Lead Executing Agency (LEA), worked in collaboration with the National Executing Agencies (NEAs) to oversee project management, offer technical support, and conduct monitoring and evaluation. This partnership was crucial in ensuring effective implementation and coordination across the participating countries.
5. At the national level, the NEAs, representing the ministries responsible for biosafety in each country, played a key role. They signed agreements (MoU) with designated national executing laboratories, responsible for carrying out LMO detection and creating conditions for the national authorities to make decisions. Laboratories, academic and research institutions were also integral partners. Selected laboratories within the target countries, along with universities, research institutes, and centers, contributed expertise and resources to support the project's objectives. Additionally, national regulatory agencies played a crucial role in ensuring compliance with legal frameworks governing LMO directives. They were responsible for translating policy into action and overseeing regulatory processes.
6. During the implementation of the MCP-ICLT/ LMO project, the global emergency related to the COVID-19 pandemic led to significant changes in training methods, exchange of experience and maintenance of laboratory instruments. COVID-19-related restrictions made it impossible or at

³ Project Document, 2016.

least very difficult for the LMO project's participants to meet physically, forcing a rapid adaptation of activities. As a result, innovative approaches based on digital tools and remote technologies had to be adopted to ensure the continuity of activities and the involvement of those involved.

The evaluation

7. In line with UNEP's 2022 Evaluation Policy, this terminal evaluation had the following purposes: Be a source of accountability, contribute to learning, generate evidence and support evidence-based decision making, operational improvement and knowledge sharing. The evaluation was commissioned to assess the performance of the Project against nine evaluation criteria applied by UNEP: Strategic Relevance, Quality of Programme Design, Nature of External Context, Effectiveness, Financial Management, Efficiency, Monitoring and Reporting, Sustainability, Factors Affecting Programme Performance and Cross-Cutting Issues. It also provided an answer to the four Key Strategic Questions, as defined in the evaluation Terms of Reference (Annex 7).
8. The Evaluation delved into an analysis of various documents and data obtained through, field visits in target Countries and interviews (in-person and remote) to gain insight into the structure of the project, its implementation and the roles of its partners. The evaluation covered the project implementation period from May 2017 to December 2022.
9. The reconstructed Theory of Change (referred to as the RToC at Evaluation), was discussed with RAEIN-Africa and the target countries of the MCP-ICLT/ LMO project, and analysed considering laboratory visits, interview results, as well as literature review, globally confirmed what was hypothesized in the RToC at the inception phase in the Inception Report (as Figure 3 below).
10. The evaluation used a mix of methods, combining quantitative and qualitative methods for collecting data and using a participatory approach. The quantitative method was used for the analysis of financial reports, while the qualitative was used for the triangulation of primary and secondary data. Qualitative methods were used to provide an in-depth view of the actions implemented at each level of intervention organization (institutional and operational). Additionally, qualitative data also made it possible to explore subjective and contextual issues, including the perspectives and perceptions of beneficiaries, partners, and stakeholders, to better understand the results of the project and help interpret and explain the results.
11. The methodological approach was based on stimulating active stakeholder participation, considering the commitments made during data collection in each country.
12. A literature review was carried out and ad hoc questions were asked during the interviews to explore which tools and mechanisms had been put in place in the project to ensure that potentially excluded groups (excluded by gender, vulnerability, disability, or marginalization) were involved during the project implementation phase. At the same time, visits to the target countries were requested and the observations made were useful for verifying the follow up of the gender approach and the inclusion of vulnerable groups.

Key findings

13. The MCP-ICLT/ LMO project was initiated to enhance biosafety practices and Living Modified Organism (LMO) testing capabilities across six African countries. The project focused on multiple components and outcomes aimed at strengthening infrastructure, improving technical expertise, fostering partnerships, raising awareness, and ensuring effective project coordination and management.
14. **Achievement of Outcomes:** Under Outcome 1, the project addressed deficiencies in laboratory infrastructure and equipment for LMO testing. Initial assessments identified the need for capacity-building efforts and infrastructure improvements. Laboratories were redesigned and

refurbished to meet minimal infrastructure guidelines, and essential equipment was procured and installed. Despite challenges such as delays in instrument delivery and disruptions caused by the COVID-19 pandemic, significant progress was made in enhancing laboratory capabilities for LMO testing. The standardisation and centralisation of the procurement process through RAEIN-Africa allowed for the purchase of similar equipment at a lower cost, bypassing the sometimes-challenging local procurement processes. However, some laboratory infrastructures were non-totally functional due to various causes: renovation of building (Angola), lack of calibration or non-functional equipment (DRC), lack or expired reagents which could not be delivered following shipping due to heavy customs administrative requirements (DRC), and complex local procurement facilities to purchase reagents. Moreover, the evolution in the complexity of LMOs with synthetic DNA requires more modern detection equipment such as Digital PCR and sequencers. **Fully Achieved.**

15. Outcome 2 focused on enhancing technical expertise in Quality Management Systems (QMS) and LMO detection. Training was provided to trainers and laboratory personnel, leading to the development of audited QMS in nine laboratories. Improved proficiency in LMO testing methods was observed, although challenges related to staff retention were identified in certain countries. During the evaluation exercise, some laboratories were not functional due to lack of personnel who had been relocated to other departments and there was a need to train new personnel, especially in Government-run laboratories. However, this was less evident in university run laboratories as students were trained to operate and use the equipment in the context of their studies. **Fully Achieved.**
16. Under Outcome 3, efforts were made to establish platforms for information exchange, strengthen partnerships with regional laboratories, and disseminate knowledge products. Annual meetings facilitated interactions among stakeholders, and laboratories were integrated into regional networks. Despite limitations in face-to-face interactions due to COVID-19, the project produced various knowledge products and established registers for LMO detection. During the project implementation, and especially during the COVID-19 pandemic, virtual exchanges and bridges were established to overcome the constraints linked to lockdowns, thereby enhancing the connections between the various laboratories. It is important to highlight the collaboration between laboratories within countries was effective (University versus Government laboratory) and that partnerships were developed from Mozambique and Madagascar to mentor other countries as much as possible. **Fully Achieved.**
17. Under Outcome 4, the project aimed to raise awareness and promote science-informed decision-making on biosafety issues. State-of-the-art laboratories were launched in four countries, and educational campaigns were conducted to empower stakeholders and decision-makers. Challenges included legislative gaps and differences among target countries regarding LMO and biosafety legislation. **Fully Achieved.**
18. **Likelihood of impact:** The Project officially ended in 2022, so it's too early to discuss its impact on livelihoods. However, the evaluation believes the LMO project has significant potential to have an impact across various sectors. For example, in Malawi, analyses are currently being conducted on soybeans, common beans and pigeon peas, to determine if these imported products are genetically modified. These analyses will likely be useful for many other agricultural and food products, indicating the potential impact beyond the Theory of Change, although it may take a few more years to see tangible results.
19. **Financial management:** The project effectively managed its financial and administrative aspects, with significant assistance from RAEIN-Africa to countries in addressing administrative and financial challenges. RAEIN-Africa's support was instrumental in overcoming difficulties or delays encountered by countries in reporting. UNEP also acknowledged that this project was managed very efficiently and effectively. The project could have been even more efficient if

Portuguese and French speaking personnel had been recruited to overcome the language barrier, although translators have been used in those countries.

20. **Sustainability:** In terms of socio-political sustainability, while some countries like Malawi and Mozambique have shown strong commitment and active engagement in decision-making processes regarding biosafety, others like the DRC and Angola have faced challenges hindering effective participation of national institutions due to various issues. Despite these challenges, there's a discernible institutional drive in Angola to enhance biosafety management, evidenced by the government's involvement in new EU-funded projects. In fact, some laboratory personnel have pointed out that the evolution of LMO technology is very rapid, with new gene editing and synthetic DNA which cannot be detected using Real Time PCR, requiring new equipment such as Digital PCR and sequencers for detection. This requires additional funding and training to meet the objectives of the Cartagena Protocol as a second phase once the existing national systems are fully operational and experienced. To this effect, Mozambique has acquired a sequencer through another GEF project.
21. Financial sustainability has emerged as a significant challenge, with laboratories facing difficulties in obtaining funding for reagents and equipment maintenance. The COVID-19 pandemic exacerbated these challenges, limiting procurement mechanisms and hindering maintenance efforts, particularly in countries with currency devaluation issues. To this effect, university laboratories were able to find sources of funding more easily than Government run laboratories due to academic and research activities. Moreover, the laboratories having been set up within a weak legal framework, LMO detection is currently optional, lowering the financial sustainability potential.
22. Institutional sustainability has been a notable achievement, with investments in trainer training significantly strengthening human resources in participating institutions. However, turnover in human resources poses a risk to sustainability, especially in countries where trained individuals are no longer available. Successful collaboration between laboratories, as seen in Mozambique, has contributed to better institutional sustainability.

Factors affecting performance

23. Preparation and readiness: Initially, the project faced challenges related to inadequate stakeholder engagement and unclear partnership roles, which were partially mitigated through improved engagement strategies. However, difficulties in accessing the Stakeholder Community remained. Significant changes, including those brought on by the COVID-19 pandemic including the passing away of the leads for DRC and Madagascar at crucial stages of the project execution, prompted adaptations such as timeline adjustments and resource reallocation to maintain project continuity.
24. Quality of project management and supervision: UNEP effectively fulfilled its role by providing strategic guidance and oversight, while RAEIN-Africa, as the executing agency, demonstrated high-quality management and maintained project momentum despite challenges. Both agencies ensured robust engagement and effective implementation of project activities.
25. Stakeholder participation and cooperation: Despite logistical challenges that limited direct meetings with the Stakeholder Community, the project succeeded in involving a diverse range of stakeholder groups, particularly women, and maintained strong collaborative ties with technical advisors from Southern Africa, ensuring continuity during the pandemic.
26. Responsiveness to human rights and gender equity: The project was particularly effective in promoting gender equity and upholding human rights, especially during the pandemic. It supported affected personnel and integrated high levels of female participation in significant roles, challenging traditional gender norms in the scientific community.

27. Environmental and social safeguards: The project met UNEP's environmental and social safeguard requirements effectively, with continuous risk assessments and the adoption of eco-friendly practices that aligned with UNEP's sustainability goals.
28. Country ownership and driven-ness: High levels of local engagement and ownership were evident, as local institutions played a central role in driving the project forward despite various challenges, demonstrating strong commitment and resilience.
29. Communication and public awareness: The project struggled with public awareness and effective communication, particularly due to language barriers and a lack of visibility among key stakeholders, which impacted its broader engagement.

Conclusion

30. Based on the findings from this evaluation, the project demonstrated overall performance rated at the 'Satisfactory' level (a table of ratings against all evaluation criteria is found in the Conclusions section of the main report).
31. The LMO project marked a significant shift in LMO management and biosafety in Angola, the Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, and Mozambique, thus impacting the SADC region in terms of detection capacity. Before the project's initiation, most laboratories in these countries were in poor condition, lacking modern equipment, reagents, and expertise in LMO analysis. National regulations and procedures were unfamiliar, and there were no national referential laboratories competent at verifying seed and product conformity, resulting in a lack of control over LMO circulation.
32. Extensive training was provided to laboratory personnel, and modern equipment was supplied accordingly. Decision-makers have therefore been provided with the capacity to base themselves on scientific evidence for transparent decision-making, enhancing trade security and transparency, particularly in import-dependent countries.
33. Table 2 summarizes the ratings with respect to the evaluation criteria.

Table 2. Summarized rating table

Criterion	Rating ⁴
A. Strategic relevance	HS
B. Quality of project design	HS
C. Nature of external context	F
D. Effectiveness	HS
E. Financial management	HS
F. Efficiency	S
G. Monitoring and reporting	S
H. Sustainability	MUL
I. Factors affecting performance	HS
Overall project rating	S

⁴ HU=Highly Unsatisfactory; US=Unsatisfactory; MUS=Moderately Unsatisfactory; MS=Moderately Satisfactory; S=Satisfactory; HS=Highly Satisfactory; HU=Highly Unfavourable; UF=Unfavourable; MUF=Moderately Unfavourable; F=Favourable; MF=Moderately Favourable; HF=Highly Favourable; HUL=Highly Unlikely; UL=Unlikely; MUL=Moderately Unlikely; L=Likely; ML=Moderately Likely; HL= Highly Likely.

Summary response to the key strategic questions

34. Strategic question 1: Effective project management was ensured by RAEIN-Africa, despite challenges such as bureaucratic hurdles and limited training for ministry staff. Although the project faced various challenges as a result of the COVID-19 pandemic, including delays and disruptions, the engagement and assistance provided contributed significantly to its overall success.
35. Strategic question 2: Procurement was integral to the project's success, ensuring the timely acquisition of necessary resources. Competitive bidding processes were employed to select suppliers, ensuring transparency and quality. This approach significantly contributed to project performance by enhancing efficiency, effectiveness, and resource availability.
36. Strategic question 3: Synergies were established between countries and at the regional level, fostering collaboration and opportunities for replication. Despite COVID-19 challenges, countries laid a solid foundation for future initiatives through knowledge sharing and collaboration.
37. Strategic question 4: The project established strong linkages with UN reform, UN Country Teams, and Sustainable Development Cooperation Frameworks, integrating LMO issues into national and regional development plans. UNEP provided technical support, strengthening capacity for LMO detection and compliance.
38. Strategic question 5: While some recommendations from the Mid-Term Review were not fully implemented due to COVID-19 constraints, efforts were made in areas like communication standardization and legal processes. Despite challenges, there was a commitment to comply with the recommendations, reflecting the project's dedication to progress.

Lessons learned

39. **Lesson 1: The importance of operationalising national legal frameworks.** The project design was centred around the technical aspects of LMO detection, under the GEF Biosafety Strategy under issue specific or thematic supported projects, in line with the provisions of the Cartagena Protocol which the countries forming part of the project adhered to. However, national legal frameworks were not in place or not operationalized in some of the countries. These issues are normally covered under the general National Biosafety Framework Development and Implementation Framework. More specifically, despite guidance provided under the project, Angola is yet to develop such frameworks while Mozambique and Malawi have an existing operational system. On its part, Madagascar has drafts which will be finalised in the new project and Lesotho has already drafted all instruments with interim measures whilst they await the Biosafety bill to be passed to law by Parliament with the support of the competent national authority, Department of Environment, to take through national processes. The lack of policy and political commitment need to be considered for future interventions also to consolidate a long-term sustainability.
40. **Lesson 2: Centralization of procurement process is an advantage in multi-country projects.** The initial project design made provision for the procurement of equipment at national level. However, RAEIN-Africa managed to centralise the procurement process, allowing for the reduction in costs and the uniformization of the calibration and maintenance process of the equipment, while providing a more efficient unique training to the personnel in all countries. This positive approach could be adopted for all regional projects.
41. **Lesson 3: The importance of capacity building and continuous training.** The LMO project highlighted the critical importance of building institutional and technical staff capacities to manage biosafety and LMO challenges effectively. Utilizing a Train-the-Trainer (ToT) methodology not only ensured institutional sustainability but also highlighted the necessity of retaining trained staff within their roles to maintain continuity. Each country established both

academic and governmental units to foster continuous professional development and provide the flexibility needed for sustainable long-term project implementation. Moreover, it's vital to equip these trained individuals with sufficient resources to sustain training efforts and enhance their capability to handle future challenges.

42. **Lesson 4: Streamlining LMO international lab accreditation: The power of inter-country collaboration.** The international accreditation is an objective of countries, but the process for laboratories to gain this international accreditation for LMO (Living Modified Organisms) testing is heavily encumbered by high levels of bureaucracy, both at national and international levels. Countries face numerous barriers throughout various stages required for accreditation, such as acquiring materials, navigating legal frameworks, and complying with rigorous standards. However, inter-country collaboration and joint advocacy, particularly evident during stages like material acquisition, prove to be effective strategies in overcoming these bureaucratic challenges. By working together, countries can streamline the accreditation process, share resources, and align their efforts to meet international standards more efficiently. This cooperative approach simplifies the process and accelerates the pace by which laboratories can be accredited, thereby enhancing their capabilities in LMO detection compatible with global standards.
43. **Lesson 5: The importance of innovative approaches and adaptability in project management.** The project was designed prior to the COVID-19 pandemic, However, the Lead Executing Agency managed to successfully overcome this challenge through innovative approaches. Although the Project Document contained a section on risk assessments, COVID-19 has not and could not be foreseen. Adaptability and innovation to face such events is therefore critical.
44. **Lesson 6: Investment in the national financial aspect is crucial to ensure the sustainability.** The investment both in terms of GEF Trust Fund money and co-funding needs to be carefully planned and strategized at project design stage to ensure that the project has and builds the capacity to go ahead when funds are exhausted. To this effect, such projects should include a specific technical assistance in financial sustainability component to ensure that sufficient revenue is generated to maintain the equipment, purchase the reagents, train the personnel necessary for the proper running of the laboratory and develop new applications to generate funding in the medium and long term.
45. **Lesson 7: Significant investment in communication and dissemination strategies is important to give the project visibility and raise awareness among stakeholders.** The project experienced limited visibility and awareness among potential external catalysts (such as the Food and Agriculture Organization of the United Nations in Angola), which may have been partly due to the impacts of COVID-19. This highlighted a significant gap in the project's multi-stakeholder communication strategy. An effective communication plan aimed at engaging a wider range of stakeholders is essential. Developing such a strategy would need to involve identifying key actors, tailoring messages that address their interests and potential contributions, and leveraging various communication platforms to ensure broader dissemination and engagement.
46. **Lesson 8: The role of highly qualified women in LMO detection is essential.** The strong presence of highly qualified women in the MCP-ICLT/ LMO project and its leadership was a positive factor that is not always common in this type of scientific projects but can be a replicable and inspiring element of innovation. A key lesson learned from the MCP-ICLT/ LMO project was the transformative role of involving highly qualified women in leadership and technical roles. This strategy not only improved project outcomes but also inspired broader social change by elevating women's professional and academic aspirations. Seeing women excel in typically male-dominated fields like science and technology can motivate other women and girls to pursue similar paths, thereby promoting gender equality and empowering women. This positive shift highlights the importance of incorporating strategic gender inclusion in project planning to

ensure that women are leaders and key contributors, influencing both the project's success and broader societal norms.

Recommendations

47. Recommendations 1 and 2 are mainly addressed to UNEP and RAEIN-Africa for onward transmission to National Governments, represented in the project by Ministries. The final recommendation, aimed at UNEP and RAEIN-Africa, concerns implementation and financial sustainability. This latter recommendation may be used at the project design phase if the project is subject to further developments:

- 1) Ministries should continue to support the achievements of the MCP-ICLT/ LMO project by continuing to maintain a high level of quality for infrastructures, promoting collaboration between laboratories, national exchange of experiences, facilitating participation in new training and further education opportunities and enhancing the number and quality of human resources currently present.
- 2) Angola, Democratic Republic of the Congo and Madagascar should pursue approval of national legal frameworks and standardize the regional legal framework, that should include a dedicated financial planning, supporting countries with regulatory gaps through increased cooperation.
- 3) UNEP along with RAIEN-Africa/Lead Executing Agency (LEA) should disseminate the LMO project's results, ensuring broad visibility and understanding of its achievements and lessons learned.

1 Introduction

48. The project “Multi Country Project to Strengthen Institutional Capacities on Living Modified Organism (LMO) Testing in Support of National Decision Making” (MCP-ICLT) and referred to as the “**MCP-ICLT/ LMO project**” or “**LMO project**” falls under United Nations Environment Programme (UNEP) Medium-Term Strategy’s subprogramme on Healthy and Productive Ecosystems (SP3) and Environmental Governance (SP4), aiming to strengthen environmental governance at various levels to support the implementation of Multilateral Environmental Agreements (MEAs). The objective is to ensure that environmental governance at country, regional and global levels are strengthened to address agreed priorities to support implementation of Multilateral environmental agreement (MEA). Furthermore, the initiative contributes to achieve the Global Environment Facility (GEF) strategic objective BD3, falling under Biosafety strategic programme of GEF V⁵ which includes, amongst others, building capacity to implement the Cartagena Protocol on Biosafety and integrating obligations of the Convention on Biological Diversity (CBD) into national planning processes through enabling activities.
49. The main objective of the MCP-ICLT/ LMO project was to “contribute to ensuring an adequate level of protection in the field of the safe transfer, handling, transport, and use of LMOs resulting from LMOs that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and specifically focusing on transboundary movements.”⁶ The overall objective of the project was therefore to build and strengthen institutional and human capacities for the detection of LMOs to support national biosafety decision-making processes in selected countries in Southern Africa: Angola, Democratic Republic of the Congo (DRC), Lesotho, Madagascar, Malawi and Mozambique.
50. The project had six main components: a) Strengthening infrastructure for LMO detection, b) Strengthening institutional and human capacities for LMO detection, c) Strengthening information sharing, lesson learning and partnerships, d) Strengthening biosafety decision making and two components related to project monitoring and evaluation and project coordination and management.
51. The Project Document was approved by GEF on 5 December 2016 and by UNEP on 30 May, 2017 with an expected start date of 1 June, 2017 and a planned operational completion date of 29 December, 2021. In fact, the project started on 1 July, 2017 and the actual operational end date was 30 December, 2022.
52. The project was designed with four operational project components mirroring the project’s expected outcomes and had a total budget of USD10,406,752 inclusive of a sum of USD6,546,752 in co-financing and a GEF Trust Fund Grant of USD3,860,000. The implementation of the project was overseen by the Task Manager in the Ecosystems Division, UNEP and executed by Regional Agricultural and Environmental Innovations Network-Africa (RAEIN-Africa) in South Africa working closely with the national coordinators and agencies in the project countries.
53. The **GEF Implementing Agency** responsible for the project was UNEP through its Ecosystems Division (formerly, Division on Environmental Policy Implementation). The UNEP Task Manager was in the GEF Biodiversity and Land Degradation Unit of the Biodiversity and Land Branch in the Ecosystems Division. UNEP was to provide supervisory and technical advisory oversight for the project.

⁵ <https://www.thegef.org/sites/default/files/events/20-GEFStrategiesBD.pdf>

⁶ Project Document, 2016.

54. RAEIN-Africa was the **Lead Executing Agency** (LEA) for the project and co-executed with the participating countries. UNEP/GEF was to sign a contract with RAEIN-Africa and Countries (Focal points) would sign MoUs with RAEIN-Africa. As the Lead Executing Agency, RAEIN-Africa, was to be responsible for all project management, monitoring and self-assessment at country level, technical guidance and reporting. RAEIN-Africa's main role was to coordinate the implementation of the project, overseeing that the project would meet the set objectives in a timely and cost-effective manner; ensure that the project results framework was continuously monitored and facilitate any revision that would be required, in collaboration with the UNEP Task Manager. It would oversee that the project would meet the UNEP/GEF policies and procedures, facilitate the establishment of an effective network of stakeholders in LMO Detection and Biosafety regulatory chain in the participating countries, and lead in the reporting and accounting of resources to UNEP and GEF.

55. **Other executing agencies** at country level included:

- Ministry of Environment of Angola (MINAMB), Angola (CLA Laboratory)
- Directorate of Sustainable Development, Ministry of Environment and Sustainable Development, Democratic Republic of the Congo (DRC) (Vet Lab and General Atomic Energy Laboratories)
- Ministry of Tourism, Environment and Culture, Lesotho (National University of Lesotho (NUL) and Department of Agricultural Research Laboratories)
- General Directorate of Environment, Ministry of Environment and Sustainable Development, Madagascar (University of Antananarivo Molecular Biology and CNRE Laboratories)
- Environmental Affairs Department, Ministry of Natural Resources and Climate Change, Malawi (LUANAR and Chitedze Agricultural Research Station Laboratories)
- The Agriculture Research Institute of Mozambique (IIAM), Mozambique (IIAM and UEM Laboratories).

56. **In-country focal points** were expected to sign MoUs with the participating laboratories. The participating LMO Detection laboratories would form national project task teams in collaboration with the biosafety focal points. The said entities are listed in Table 3.

Table 3. List of entities involved in the LMO project at national level

Participating Country	Sector	Specific stakeholder
Angola	Government ministries	Ministry of Agriculture and Rural Development, Ministry of Environment, Ministry of Energy and Water Resources, Ministry of Fisheries, Ministry of Science and Technology, Ministry of External Relations Ministry of Health
	Academia & research institutes	Central Laboratory of Angola (CLA), Agostinho Neto University, Angolan Catholic University, National Institute for Fisheries Research, National Centre for Scientific Research, National Technological Centre Luanda Herbarium
	Regulatory agencies	National Institute for Nature Conservation, National Institute for Environmental Promotion, National Educational Development Institute, Directorate for Natural Resources, Directorate for the

		Environment, Forest Development Institute, Environmental Protection Associations, National Centre for Phylogenetic Resources, National Museum for Natural History
DRC	Government ministries	Ministry of Agriculture, Ministry of the Environment, Nature Conservation, Waters and Forests, Ministry of Scientific Research, Ministry of Rural Development Ministry of External Trade, Ministry of Industry and Small and Medium-Sized Enterprises
	Academia & research institutes	University of Kinshasa, University of Kasingani General Atomic Energy Commission / Regional Centre for Nuclear Studies Kinshasa (CGEA / CREN-K), Veterinary Laboratory of Kinshasa (VLK), National Natural Science Research Centre (CRSN-Lwiro), National Institute for Agronomic Study and Research (INERA), Agri-food Research Centre (CRAA) National Seed Service (SENASA), Maize Research Centre (CRM), National Livestock Development Authority (ONDE), National Institute of Biomedical Research (INRB), Animal and Plant Quarantine Service
	Regulatory agencies	The Biosafety Focal Point, The National Biosafety Consultative Council, The National Competent Authority, The Technical and Scientific Committee The National Biosafety Clearing House
Lesotho	Government ministries	Ministry of Tourism, Environment and Culture, Ministry of Agriculture and Food Security, Ministry of Health and Social Welfare, Ministry of Trade and Industry, Ministry of Communications Science and Technology, Ministry of Local Government and Chieftainship Affairs, Ministry of Education and Training, Ministry of Finance, Ministry of Development Planning
	Academia & research institutes	National University of Lesotho (NUL), Health Research and Laboratory Services, Department of Agricultural Research
	Regulatory agencies	National Executive Agency – Department of Environment National Coordinating Authority (NCC) Focal Points, Competent Authorities, Scientific Advisory Committee, Socio-Economic Panel, Disaster Management Authority
Madagascar	Government ministries	Ministry of Environment, Water, Forests and Tourism Ministry of Agriculture, Livestock and Fishing Ministry of Industrialization, Trade and Private Sector
	Academia & research institutes	Molecular Biology Laboratory – University of Antananarivo (MBL-UA), Environmental Laboratory of Microbiology (ELM), Environment National Research Center, Industrial and Technological National Research Center, Horticultural Technical Center of Antananarivo, Malagasy Institute of Applied Research Malagasy Institute of Veterinarian Vaccines Plant Protection Management Research Centers
	Regulatory agencies	National Office for Environment (c-n - Competent National Authority), The National Association for the Management of Protected Areas (ANGAP) (NEA), Biosafety National Committee, Scientific and Technical Committee, Official Service of Mixed Control, Standards Office of Madagascar, Office of Public

		Participation, Making Investments Compatible with the Environment, Control Unit of the Foodstuffs Quality
Malawi	Government ministries	Ministry of Natural Resources and Climate Change, Ministry of Agriculture and Food Security, Ministry of Trade and Industry, Ministry of Health, Ministry of Local Government
	Academia & research institutes	Chitedze Agricultural Research Station (CARS), Lilongwe University of Agriculture and Natural Resources (Bunda Campus) University of Malawi, Central Veterinary Laboratories University of Malawi, Mzuzu University, Natural Resources College, Forestry Research Institute of Malawi National Herbarium & Botanical Gardens, Mokoka Research Station, Bvumbwe Agricultural Research Station, Lunyangwa Agricultural Research Station
	Regulatory agencies	National Commission for Science and Technology (NCST), National Biotechnology Committee, Department of Environmental Affairs (EAD), National Biosafety Regulatory Committee (NBRC), Agriculture Technology Clearing Committee (ATCC), Malawi Environment Protection Authority
Mozambique	Government ministries	Ministry of Agriculture and Rural Environment, Ministry of Land and Environment, Ministry of Science and Technology and Higher Education, Ministry of Health, Ministry of Industry and Trade, Ministry of Sea, Inland Waters, and Water Resources Ministry of Finance/Customs
	Academia & research institutes	Biotechnology Centre of Eduardo Mondlane University (CB-UEM), Agriculture Research Institute of Mozambique (IIAM)
	Regulatory agencies	Biosafety Working Group, National Directorate of Agriculture, National Directorate for Livestock, National Directorate for Environment Impact Assessment, National Directorate for Environment, Management, National Directorate of Health, Department of Seeds

57. The **Regional Steering Committee** (RSC) was composed of the National Biosafety Authorities of the participating countries, the UNEP Task Manager and the Lead Executing Agency – RAEIN-Africa. The RSC was expected to oversee the implementation of the project, receive periodic reports on progress, review progress and make recommendations to UNEP concerning any revision of the result framework and the monitoring and evaluation plan. The RSC was expected to meet annually to review project work plans, budgets and progress reports. The work of the Regional Project Steering Committee was supposed to be supported by National Project Taskforces in each participating country.

58. The **Project Management Unit** (PMU) was in RAEIN-Africa, the Lead Executing Agency. The PMU was composed of five staff comprising of a project manager, finance officer and administrative staff and two technical advisors. The Project Manager who was contracted by RAEIN-Africa was responsible and accountable to UNEP-GEF and partner executing agencies.

59. According to the ProDoc (Figure 1, Paragraph 84) "...the project was designed to make use of both Technical Advisors and Consultants". This was a unique approach designed to ensure

resource sharing (in terms of Experts who advised the project through a Technical Advisory Team) and also take advantage of a cumulative capacity building system in which capacity building on LMO testing was carried out throughout the project life span with courses building up on each other's contents for the strengthening of infrastructure for LMO detection (outcome 1) and strengthening institutional and human capacities for LMO detection (outcome 2), and to lesser extent for strengthening information sharing, lesson learning and partnerships (outcome 3) and strengthening biosafety decision making (outcome 4).

60. Designated laboratories identified in each project countries had various human capital gaps, infrastructure and equipment, and other issues requiring attention. Key project stakeholders would involve **Government ministries, academia and research institutes, and regulatory agencies**.

61. The project was designed to work with facilities in the **six project countries**: Angola, DRC, Lesotho, Madagascar, Malawi and Mozambique, as indicated in the map (Figure 1).

62. A Mid-Term Review (MTR) of the project was carried out in 2019 covering the period of project implementation extending between July 2017 and December 2018, including two project revisions and two steering committee meetings. The rating of the project under the said review was 'Satisfactory'.

63. In line with the UNEP Evaluation Policy and the UNEP Programme and Project Management Manual, the Terminal Evaluation was undertaken at operational completion of the UNEP/GEF project entitled "Multi-Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making" (GEF ID 5283), hereafter referred to as the "MCP-ICLT/ LMO project" or "LMO project" to assess the project's performance in terms of relevance, effectiveness and efficiency, and determine outcomes and impacts (actual and potential) stemming from the project, including sustainability.

64. The key intended users of the evaluation exercise include UNEP, GEF, the Secretariat of CBD, the GEF Biodiversity and Land Degradation Unit of the Biodiversity and Land Branch in the Ecosystems Division of UNEP, RAEIN-Africa, National Executing Agencies/National Designated Entities and the GEF Secretariat.

Figure 1. Map of target Countries. Source: Quantum GIS



2 Evaluation methods

65. As indicated in the ToR (see Annex 7) and in the evaluation inception report approved by UNEP, the evaluation has two primary purposes:
- to provide evidence of results to meet accountability requirements, and;
 - to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP, RAEIN-Africa and key project country stakeholders.
66. Therefore, the evaluation aimed to identify key lessons from the project to guide future project formulation and execution, especially for potential follow-up phases. By analysing successes, challenges, and adaptations, the evaluation has provided actionable insights to improve the effectiveness and impact of future projects.
67. At the heart of this evaluation lay in the analysis and reconstruction of the project's Theory of Change (ToC). The reconstructed ToC was shared with RAEIN-Africa and target countries. The final version of the ToC is presented later in this report (Section Theory of Change at evaluation) and has been consistently used throughout the evaluation process.
68. In line with UNEP evaluation standards, the MCP-ICLT/ LMO project was evaluated against nine criteria:
- Strategic relevance
 - Quality of project design
 - Nature of external context
 - Effectiveness
 - Financial management
 - Efficiency
 - Monitoring and reporting
 - Sustainability
 - Factors affecting project performance
69. In addition to these criteria, cross-cutting issues, such as human rights and gender, have also been considered. These criteria were broken down into sub-categories and were also supported by key questions for analysis (see Annex 4 for evaluation framework).
70. For each criterion, the UNEP Evaluation Office has developed a ratings matrix detailing the main elements required to be demonstrated at each level. This matrix allowed for evaluation criteria to be rated on a six-point scale, ranging from Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U) and Highly Unsatisfactory (HU). After considering all evidence, ratings against each criterion were weighted to derive the overall project performance rating, with the greatest weight placed on outcome achievement, followed by sustainability dimensions.
71. In this context, the evaluation exercise carried out based on the following four key strategic questions:
- Q1:** *What changes were made during project implementation to adapt to the effects of COVID-19 and how did any changes affect the project's performance?*
 - Q2:** *How was procurement built into the project design and to what extent did the procurement approach contribute to the performance of the project?*
 - Q3:** *To what extent were synergies created during implementation between the countries and the regional level and transformed into opportunities for replication or scaling-up?*

- 4) **Q4:** *Examine the linkages with UN reform, UNCT and UNSDCF engagement in the project countries with opportunities for UNEP, especially with countries in Southern Africa?*

72. In addition, as the project was also subject to a MTR in 2019, the following key strategic question equally considered:

- 5) **Q5:** *In what ways, and to what extent, were the recommendations from the Mid Term Review actioned upon?*

73. Considering this, therefore, one of the main questions to understand during the evaluation was “why” the project from 2017 to 2022 was developed in this way, whether at regional or national level, seeking to understand its contextualisation, barriers and possible opportunities for future activities.

74. The evaluation considered three guiding principles:

- 1) Why things happened that way in that context?
- 2) What contributions and changes the project brought to the context?
- 3) What lessons have been learnt and how can they be taken forward?

75. The evaluation used a mix of methods, combining quantitative and qualitative methods for collecting data and using a participatory approach. The quantitative method was used for the analysis of financial reports, while the qualitative was used for the triangulation of primary and secondary data. Qualitative methods were used to provide an in-depth view of the actions implemented at each level of intervention organization (institutional and operational).

76. Additionally, qualitative data also made it possible to explore subjective and contextual issues, including the perspectives and perceptions of beneficiaries, partners, and stakeholders, to better understand the results of the project and help interpret and explain the results.

77. The methodological approach was based on stimulating active stakeholder participation, considering the commitments made during data collection in each country. This was done by using and proposing any useful tools and methods that would allow for interviews. In other words, the project evaluation sought the involvement of institutional actors (government representatives and agencies) who participated in the implementation of the intervention to reflect the perceptions of each of the parties at each stage of the intervention. Additionally, active participation was necessary to ensure local ownership of the analysis and the joint identification of national priorities and solutions adapted to the local context. Besides reflecting on the implementation of the project, the evaluation team used the participatory approach to explore lessons learned and insights into areas for improvement, which were crucial information for developing relevant and achievable recommendations.

78. To ensure that potentially excluded groups (excluded by gender, vulnerability, disability, or marginalization), the literature review in the specific documentation was carried out and ad hoc questions were asked during the interviews to explore which tools and mechanisms had been put in place. At the same time, visits to the target countries were requested and the observations made were useful for verifying the follow up of the gender approach and the inclusion of vulnerable groups.

79. Throughout this evaluation process and in the drafting of the evaluation report efforts have been made to represent the views of both mainstream and more marginalised groups. Data were collected with respect for ethics and human rights issues. The interviews were recorded after the explicit consent of the interviewee, anonymously and the use of the recording content is strictly internal to the evaluation team. All pictures were taken, and other information gathered after prior informed consent from people, all discussions remained anonymous, and all information was collected according to the UN Standards of Conduct.

80. The methodology also relied on an analytical dimension that identified the causal factors of the observed results, not necessarily measuring the magnitude of the project's "impact" in the sense that it measured what would have happened if it hadn't happened. Instead, the analysis considered the context in which the project was implemented and checked the observed results against those predicted by the theory of change, reconstructing explanations of the progress made and the limits of the achievements, considering the constraints and opportunities for the program actors at each stage of implementation.
81. The evaluation process of the MCP-ICLT/ LMO project was divided into several phases:
- a. Inception phase – started in October 2023 and concluded in February 2024 – in which an initial desk review was done, and a Theory of Change (TOC) was elaborated. The Desk review continued throughout the evaluation process (secondary data collection and analysis).
 - b. Primary data collection – started on 26 February 2023 and concluded on 17 April 2024 – in which country missions, workshop visits and semi-structured open-ended interviews were carried out both in-person and online.
 - c. Analysis – started in mid-March 2024 and concluded at the end of April 2024 – primary and secondary data were cross-referenced and combined, highlighting the frequency of information with the main purpose of verifying the ToC.
 - d. Final report writing – started in April 2024 and concluded in May 2024 – with the writing of the draft final report and finalization of the report after comments.
82. A detailed agenda is included as Annex 2.
83. The methods used to carry out the evaluation were mainly the following:
- 1) **Desk review.** The review was carried out by examining the documents made available by the UNEP team, providing access to ANUBIS Drive (see Annex 3 for list of documents consulted). The evaluation team for the final evaluation and during the data collection phase carried out a more in-depth document review, with the aim of understanding the different aspects of the intervention:
 - a. Specific intervention context and project objectives;
 - b. Characteristics of the project and its environment;
 - c. Main operational characteristics of the project.
 - 2) **Qualitative interviews** with key players from the institutions involved at regional and national levels and UNEP staff involved in the project were conducted either face-to-face, through field missions and online. The interviews were in most cases conducted individually, although in a few cases, as in Mozambique, interviews with laboratory technicians were carried out at their request in groups. With the consent of the interviewee, the interviews were all recorded. In addition, in some cases, some interviews were conducted online, such as with the team in DRC, the trainer trained in Mozambique and the UNEP staff. The interviews were semi-structured with open responses and guided by a structured questionnaire following the sessions of the qualitative evaluation of the project design defined in Annex D of the Inception Report approved. The questionnaire was finalised before the start of the data collection phase in the target countries and was adapted to the target audience during the conduct of the interviews. In this case, additional questions were asked to clarify the concepts expressed. During the data collection phase, the evaluation team carried out 48 interviews (online and in-person), of which 21 are women. The attached list in Annex 2 presents the final and complete version of the interviews conducted.

- 3) **Quantitative analysis of financial data.** The evaluation team conducted a detailed quantitative analysis of the financial data. This analysis involved examining budget allocations, expenditures, and financial reports related to the MCP-ICLT/ LMO project. The Evaluation Team compared the budget allocations with expenditures to evaluate the project's financial performance. In parallel, interviews were conducted with key stakeholders involved in the project, including project managers, team members, and financial officers. These interviews provided valuable insights into the budget allocation process, spending patterns, and any challenges encountered during the project implementation. Simultaneously, a thorough review of relevant documents such as project proposals, budget plans, and financial reports from ANUBIS was undertaken. This document analysis helped in understanding the context in which budget decisions were made and assessing their impact on the project's financial health.
- 4) **Visits to the laboratories and target countries of the project.** The field visits included interviews with key stakeholders in ministries, research institutions, and site visits to laboratories to observe and conduct interviews with personnel at laboratories involved in the project, and interviews with other stakeholders, carried out during field missions and supported by photographs. A list of the laboratories visited is attached (Annex 2).

84. The evaluation team determined that a survey was not necessary for this type of evaluation and was not prepared.

2.1 Challenges, limitations and mitigation measures

85. At the inception phase of the evaluation, possible challenges, risks and mitigation measures of the evaluation were defined. During the evaluation, however, different limitations were encountered, which the Evaluation Team handled in the best possible way. Below, therefore, is a table (Table 4) summarising the verification or non-verification of the assumed challenges encountered instead and the measures put in place by the evaluation team to overcome and manage them.

Table 4. Challenges during the evaluation process

Challenges	Risk	Mitigation measures applied	Status at the data collection phase
Collecting data and evidence on the inclusion of vulnerable groups Considering that the project operates at different levels and because of the nature of the project, which doesn't have direct implications in communities and focuses more on empowering the stakeholders involved, it's a little complex to understand how this empowerment is then reflected in the community and, above all, encourages the inclusion of vulnerable groups.	Failure or lack of satisfaction in achieving effective inclusion of vulnerable groups	• Prepare ad hoc questionnaires that can investigate these specific aspects • Request documents for verification and evidence from UNEP and the actors involved • Identify key players who can be interviewed to enrich the quality of the evaluation.	This challenge did not affect data collection as the project primarily involved higher-level stakeholders such as Ministries and Universities and specific questions about engaging the most vulnerable groups were submitted to them.

Visit all countries due to high costs. The project was implemented in six countries, but the consultants should also have a meeting with RAEIN-Africa in South Africa. Field visits are recommended, but this means supporting high costs, for intercontinental and regional air transport, per diem and accommodation.	Due to the costs, the Evaluation Team is not able to visit all target countries and to see the project implementation on the ground.	• Preparation of a cost estimate and evaluation of the possibility of travelling with UNEP; • Prioritization of countries to be visited, considering the extremes: countries with success stories and countries with implementation problems. • Establishment of a solid schedule of online interviews. • Establishment of fluent remote communication with countries.	UNEP allowed the Evaluation Team's members to visit all countries, bearing the costs. The Evaluation Team's members did not visit the DRC because of an entry visa issue and the difficulties in agreeing and confirming a mission agenda.
Combining compliance with the agenda and data collection phase with stakeholder commitments. The project stakeholders are involved at different levels: regional and national. They have external project commitments, and it can be a challenge to combine the needs of evaluation (in term of timeline), the interview schedule and agenda. The agenda and data collection phase may not be met due to the multiple commitments, not always related to the project, that stakeholders may have. This could risk the further analysis and writing of the final report.	Failure to keep to the timeline and the data collection phase and delays in the other phases (data analysis and writing)	• Communicating the agenda in advance, coordinating directly with the actors. • Enlist the help of UNEP and RAEIN-Africa to confirm interview dates • Flexibility of the Evaluation Team with schedules (considering time zone) and interviewees' commitments	The mitigation measures were effective because the risk was nullified with the support of UNEP, RAEIN-Africa and Project Coordinators in Countries. Both the consulting team and the stakeholders were very willing to adjust their agenda to allow for data collection. When there were agenda problems, as in the case of the DRC, they were overcome with online interviews.
Analysing and triangulating a considerable amount of information between primary and secondary data, respecting the compromises made with UNEP in terms of timeline. The amount of information to be analysed and systematised will be enormous and requires an ad hoc strategy.	Delays in the analysis and systematisation of data reflected in the adherence to the work plan.	• Record conversations (when possible) and use unwinding and encoding programmes. • Better define the evaluation matrix when finalising data collection tools. • Determine when the collected information has reached saturation • Define a maximum of 50 interviews and divide the analysis within the evaluation team. • Better divide the review of the bibliography acquired during the evaluation among the members of the evaluation team.	The mitigation measures were effective because the identified risk was minimised. However, the information was quickly saturated as the project was implemented in a harmonious and linear manner. This allowed a clear overview of the data in the global picture and the Evaluation Team could focus on differences between countries' implementation of MCP-ICLT/ LMO project, lessons learnt, case studies and recommendations.

86. During data collection phase, only two limitations were found:

- 1) **Planning of the mission to DRC.** Despite the scheduling of the agenda, advance notice, continuous liaison and communication, and support from RAEIN-Africa, the mission did not take place due to difficulties and barriers in both visa access and uncertainty about the availability of stakeholders, created by the late and sporadic communication of the National Project Coordinator. The evaluation team was unable to carry out an in-country evaluation mission and opted to conduct the online interviews, which only took place after much insistence on the part of the evaluation team. Therefore, for the DRC, the evaluation was done through telephone interviews conducted with local stakeholders, and indirectly through information gathered by UNEP and RAEIN-Africa. There was no physical verification of the status of the project without field visits, especially to laboratories. However, the evidence provided during the online interviews were used to proceed with the evaluation of the project in DRC.
- 2) **Consultation with National Project Steering Committees of target countries.** Despite early communication of the evaluation team's mission agenda to the target countries, internal bureaucratic hurdles hindered meetings with members of the National Project Steering Committees involved in the MCP-ICLT/ LMO project during its implementation years. Despite the evaluation team's willingness to conduct meetings online, this limitation persisted. Consequently, data collection had to rely on indirect sources.

3 The project

3.1 Context

87. The guiding objectives of the CBD emphasize the conservation, sustainable use of biodiversity, and equitable sharing of benefits. The Cartagena Protocol on Biosafety (CPB) was established to ensure safe handling, use, and transboundary movement of Living Modified Organisms (LMOs) arising from modern biotechnologies. However, SADC countries face national barriers to CPB implementation, including lack of biosafety legislation, inadequate capacity for LMO detection, limited awareness, and stakeholder participation.
88. The MCP-ICLT/ LMO project aimed to assist six countries: Angola, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, and Mozambique. It focused on pre- and post-approval monitoring of LMOs, general surveillance, and monitoring transboundary movements of LMOs. Key activities included enhancing laboratory infrastructure, providing technical support, training staff, and adopting quality management systems. The project adopted a harmonized approach to capacity building, leveraging shared resources and expertise.
89. Specifically, in Angola, DRC, Mozambique, Malawi, Lesotho, and Madagascar, the project assessed the status of physical structures, equipment, quality management systems, human capacity, and laboratory capabilities. It aimed to increase the capacities of relevant officers and technicians in LMO-related issues, expand laboratory capabilities, enhance management systems, and build a resource pool to support LMO handling and monitoring.
90. To comply with CPB provisions, the project developed tools and methodologies to support safe handling, transport, and use of LMOs, focusing on identification and surveillance. The project aligned with UNEP's Medium-term Strategy's subprogrammes on Healthy and Productive Ecosystems (SP3) and Environmental Governance (SP4), aiming to strengthen Environmental Governance to support implementation of MEAs.

Angola

91. Angola, renowned for its diverse biodiversity, heavily relies on its natural resources for daily activities such as agriculture, livestock, and fisheries. However, due to a shortage of seed and fertilizer, the country imports these commodities, potentially containing LMOs. To address this,

Angola has strict regulations prohibiting the introduction of GMOs without authorization. Otherwise, Angola lacks a specific National Biodiversity Framework (NBF), crucial for regulating and managing its rich biodiversity and this gap in regulation and management poses challenges, especially regarding the safe handling of imported commodities containing LMOs. Therefore, the absence of a biosafety framework would mean that Angola would lack adequate systems to ensure safe handling and monitoring of LMOs. Limited technical capabilities for data collection, environmental assessments, and compliance monitoring pose challenges for Angola.

Democratic Republic of Congo

92. DRC is renowned for its rich biodiversity, making it one of Africa's key countries for conservation efforts. Despite being a mega-biodiverse nation, the DRC lacks a comprehensive biosafety framework. The government has taken steps toward regulation with Law No. 11/009 of 2011, which outlines environmental protection principles, including GMO regulation. However, a specific law is required to manage biotechnology and GMOs, as per Section 63 of the Act. With support from UNEP/GEF, the DRC developed a National Biosafety Framework in 2008 but stalled in operationalizing it. The LMO project reignited biosafety discussions and emphasized the need for legislative action. The draft bill was reviewed by Parliament with comments for updates, the bill is being reviewed and updated under the new project Strengthening the Implementation of National Biosafety Frameworks in Southern Africa (SINBF), GEF ID 10584, the legal team took part in a meeting of legal experts under the new project to share status, gain knowledge on ongoing activities and are currently updating the draft bill for submission. This includes participating in the proposed GEF 7 multi-country project in Southern Africa for Biosafety Framework implementation and harmonization. Currently, DRC is also involved in the implementation of the SINBF project, which aims to strengthen institutional, infrastructural, human, and regulatory biosafety capacities of these countries, along with Namibia and Madagascar, in support of the Cartagena Protocol on Biosafety (CPB) and its Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress.

Lesotho

93. Lesotho ratified the CPB in 2003 and developed its NBF with UNEP-GEF support. Lesotho, facing rural poverty and food insecurity, sees biotechnology and biosafety as vital for development. In addition, Lesotho's involvement in the Southern African Genetic Modification Detection Laboratories' Network (SANGL) project provided a foundation for scaling up LMO detection capacity and aligning with regional biosafety frameworks⁷. Lesotho has a Biosafety Policy and Strategy, a draft law was developed for Parliamentary review and approval. It is foreseen that Lesotho will finalise its legal framework once the law is passed in Parliament in order to overcome this major challenge.

Madagascar

94. Madagascar, a biodiversity hotspot with high levels of endemism, faces the challenge of balancing conservation with sustainable development. The government has passed the National Biosafety Policy (2004) to regulate GMOs and ensure informed decision-making. The Health Code prohibits the sale of GMO-derived food products, with violations considered criminal offenses. Decree No. 2012-833 establishes the institutional framework for biosafety management. These policies were developed with UNEP/GEF support. Madagascar, as well as Angola, Lesotho and DRC benefited from the MCP-ICLT outcomes and ongoing Biosafety Implementation project, aiming to enhance the availability of science-based evidence for decision-making and capacity-building. Madagascar has developed a draft biosafety law which

⁷ The SANGL initiative is a wider network launched in 2009 with RAIEN-Africa involvement that now involves 13 countries, including Botswana, Eswatini, Namibia, Tanzania, Zambia, and Zimbabwe that did not participate in the MCP-ICLT, and South Africa - the University of the Free State GM testing facility led by Prof Christopher Viljoen. Source: <https://www.raein-africa.org/our-projects/>

is being reviewed and which is go to Parliament with the support of activities implemented under the UNEP/GEF SINBF project (GEF ID 10584).

Malawi

95. Malawi's economy relies on agriculture, with the government enacting the Biosafety Act in 2002. The country is able to commercialize genetically modified crops, with cotton, cowpea and banana in field trials. Bt cotton is a genetically modified pest resistant plant cotton variety that produces an insecticide to combat bollworm. This cotton variety has been subject to successful confined field trials (CFTs) over a period of three years before being approved for environmental release⁸. Also Bt Banana has been granted permits for CFT due the resistance to bunchy top virus. Bt cowpea (genetically modified with increased insect resistance and increased photosynthetic efficiency) trials are ongoing to test efficacy against pests⁹. Malawi faced the decision of whether to release LMOs into the environment based on trial results at LUANAR Lab. The MCP-ICLT/ LMO project aimed to enhance authorities' capacity to detect LMOs and make informed decisions. In particular, the focus on LMO detection is of significant relevance for the regulation of the importation and illegal transboundary movement of GMOs.

Mozambique

96. Agriculture remains the backbone of Mozambique's economy, contributing over 25% of GDP and employing 80% of the labour force, mainly subsistence farmers. Chronic food insecurity, exacerbated by climate shocks and natural disasters, poses a significant challenge. Mozambique has potential to become a major food producer in Southern Africa, with its strategic geographic location. Improving agricultural productivity and ensuring food access are top priorities for the country. To regulate modern biotechnology, Mozambique established the Inter-Institutional Biosafety Working Group in 2005, which developed the National Biosafety Framework (NBF). Decree no. 6/2007 sets regulations for biotechnology activities, aiming to protect the environment, biodiversity, and human health. Decree No. 71/2014 passed in 2014 constituted an update to the 2007 decree by approving the Regulation on biosafety related to GMOs. This decree, which is in force, established updated biosafety rules and enforcement mechanisms to meet changing dynamics. Imports of GM crops for Food, Feed, and Processing (FFPs) are allowed with National Biosafety Authority authorization, contingent on risk assessment. GM food aid is permitted if no alternatives exist but must be processed before distribution. Mozambique is conducting field trials on water-efficient LMO maize, which will test the decision-making systems developed through the ongoing UNEP/GEF Biosafety Implementation Project. The country benefited from the Southern African Genetic Modification Detection Laboratories' Network (SANGI) initiative and the UNEP/GEF Project "Support to the Implementation of the National Biosafety Framework of Mozambique" (GEF ID 3649).

3.2 Results framework

97. The LMO project was implemented from May 2017 to December 2022. Initially planned to end in December 2021, it underwent a one-year extension due to the COVID-19 pandemic. The LMO project was structured into four components reflecting the four project outcomes (Table 5). Each target country adapted its outputs and indicators so that they were in line with local capacities and context.

⁸ zecotton is a genetically modified variety of cotton engineered to resist certain pests, particularly the lepidopteran *Helicoverpa armigera*, commonly known as the cotton bollworm.

⁹ Bt cowpea is a genetically modified variety of cowpea (*Vigna unguiculata*) engineered to resist certain pests, particularly the lepidopteran *Maruca vitrata*, commonly known as the "Maruca pod borer."

Table 5. Components, Outcomes and main Outputs of the Project (according to revised Results Framework in ToR)

Project Component	Project Document Outcomes	Project Document Outcomes Logical Framework	Outcome Indicators	Project Outputs
Project Component A: Strengthening infrastructure for LMO detection	Result 1: Designated LMO testing laboratories designed, equipped and able to carry out LMO detection.	Outcome 1: Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection.	Proportion of designated laboratories proficient in LMO detection.	1.1 Guidance document on minimal infrastructure for LMO detection. 1.2 Adequate functional equipment and facilities for LMO detection.
Project Component B: Strengthening Institutional and Human Capacities for LMO Detection	Result 2: Minimum level of competence achieved in the designated LMO testing laboratories	Outcome 2: Minimum level of competence achieved in the designated LMO detection laboratories.	Proportion of designated laboratories meeting minimum levels of competence in LMO detection.	2.1 Laboratory personnel equipped with technical expertise in Quality Management Systems. 2.2 Adequate technical backstopping in support of implementation processes. 2.3 Guidance document on Best Practices in LMO detection adapted for the regional context.
Project Component C: Strengthening Information Sharing, Lesson Learning and Partnerships	Result 3: Sustainable opportunities for sharing expertise, lessons and resources on LMO detection created	Outcome 3: Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created.	Proportion of designated laboratories participating on established experience sharing platforms.	3.1 Platforms for information exchange established and functional. 3.2 Project materials and guidance manuals well documented and published. 3.3 Established Linkages and partnerships with other regional, international LMO detection laboratories.
Project Component D: Strengthening Biosafety Decision Making	Result 4: Technical support to strengthen LMO detection and biosafety decision-making processes in target countries provided	Outcome 4: Technical support to strengthening LMO detection and biosafety decision-making processes in the targeted countries.	Number of meetings and workshops held with regulatory authorities per year.	4.1 Policy makers aware of the importance of LMO testing to support decision making. 4.2 Skills and techniques for sampling, handling documentation of LMOs provided to regulatory chain actors (Boarder official etc.)
Project Component E: Monitoring and Evaluation	Result 5: A comprehensive project Monitoring and Evaluation (M&E) framework developed and used to monitor and evaluate performance against set targets.	Outcome 5: Project Monitoring, Evaluation and Learning systems developed.	Number of Monitoring and Evaluation reports produced by type	5.1 Implementation progress well monitored. 5.2 Project evaluated to ascertain achievement of objectives.
Project Component F: Project Coordination and Management	Result 6: Systems and structures for project coordination and management established	Outcome 6: Coordination and management of the project.	Systems and structures for project coordination and management established. Good financial management systems developed for the project.	6.1 Number of coordination and review meetings conducted. 6.2 Burn Rate 6.3 Unqualified audits

3.3 Stakeholders

98. About the stakeholders, the table below (Table 6) provides a detailed overview of the stakeholders, their involvement in the project, their roles during the MCP-ICLT/ LMO project, and the expected changes resulting from their engagement.

Table 6. Stakeholders' analysis

Stakeholders	Explain the power they hold over the project results/implementation and the level of interest	Did they participate in the project design, and how?	Potential roles and responsibilities in project implementation	Changes in their behaviour expected through implementation of the project
Type A: <i>High power / high interest = Key player</i>				
Government ministries (multi-sectoral) Ministries with the following portfolios participate in decision making: Environment; Agriculture and Food Security; Health; Trade and Industry and, Science and Technology	They are the key players for the achievement of results and their consolidation, they represent the sustainability of the project, having a high power of influence, implementation and decision-making.	They were involved in the project writing through consultations and took advantage of previous regional collaborative projects.	Involved in the Project Steering Committee, development of regulatory instruments and technical execution of project activities through designated agencies.	This category of stakeholders took advantage mainly of the extensive training programmes delivered during the project implementation stage to increase their managerial and decision-making skills. However, the political sphere is still not sufficiently sensitised. The understanding that the project could not fund running costs and long-term sustainability remains a challenge.
Academia (universities, laboratories & research institutes)	They are the key players for the achievement of results and their consolidation, they represent the sustainability of the project, having a high power of influence, implementation and decision-making.	They were involved in the project writing through consultations and took advantage of previous regional collaborative projects.	Technical execution of the project, provide technical support in the development of operational manuals and delivery of training	Academia used extensively the opportunities provided by the project to develop academic programmes and research projects while training a new generation of LMO testing staff.
Regulatory agencies	Regulatory agencies have high power and are the key players in the implementation and consolidation of the project.	They were involved in the project writing through consultations and took advantage of previous regional collaborative projects.	Development of monitoring and enforcement instruments and contribute capacity on regulatory oversight	Regulatory agencies are still waiting for the policy makers and governments to move forward with the necessary legal and regulatory frameworks to be able to move forward.
Type B: <i>High power/ low interest over the project =Meet their needs</i>				

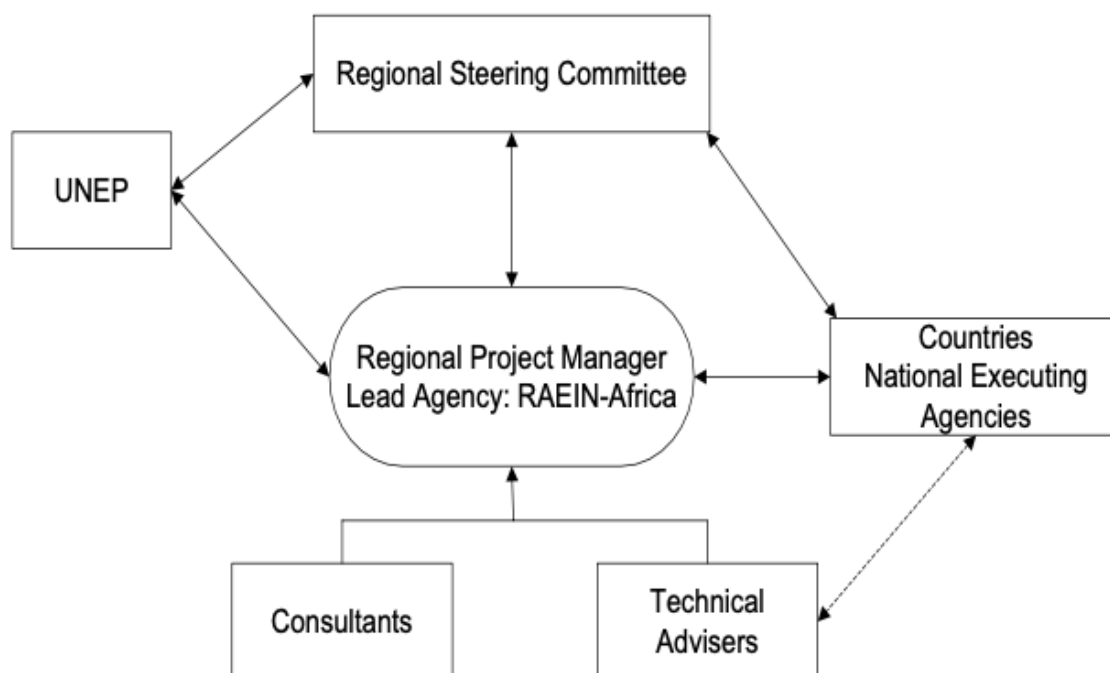
Stakeholders	Explain the power they hold over the project results/implementation and the level of interest	Did they participate in the project design, and how?	Potential roles and responsibilities in project implementation	Changes in their behaviour expected through implementation of the project
Regional institutions (eg. SANbio)	These stakeholders have high power in the partnership and regional consolidation of the project at regional level.	Although not directly involved in the project write up, information available from those institutions were used to develop a regional approach at the project design stage.	Collaborative partnerships to link jointly review and add inputs to developed biotechnology and biosafety instruments to support policy direction. Support public awareness engagement on biotechnology innovation in a sound regulatory environment and uptake with outreach materials. Collaborate with RAEIN-Africa to provide a platform to provide technical advice to SADC member states on Biotechnology and Biosafety.	Regional institutions have used the lessons learnt from the project to develop new approaches and strategies to seek additional funding.
Type C: <i>Low power/ high interest over the project= Show consideration</i>				
Private sector and civil society	They do not have much power in relation to the project, but they can be used as a resonance and influence on the results and enhancement of actions.	They were not involved in writing the Project.	Involved in activities on public awareness and capacity building	The private sector can now avail itself of the facilities provided by the laboratories to provide the necessary certifications for exportation purposes. However, this sector will not carry out LMO detection unless the legal and regulatory frameworks provide for it. Civil society remains far from the realities of LMO detection and mostly focuses on food security.
Type D: <i>Low power /low interest over the project= Least important</i>				
Parastatals/NGOs	They have no power and are indirectly affected by the actions of the project.	They were not involved in writing the Project.	Supportive role to communities in terms of Public awareness creation, public education and	Parastatals and NGOs are far reaching actors which have

Stakeholders	Explain the power they hold over the project results/implementation and the level of interest	Did they participate in the project design, and how?	Potential roles and responsibilities in project implementation	Changes in their behaviour expected through implementation of the project
			advocacy on LMO detection, the usefulness of informed decision making processes and safe handling, transport and use of LMOs	not really been involved in the project.
Farmer groups and seed companies	They have no power and are indirectly affected by the actions of the project.	They were not involved in writing the Project.	Involved as end users of the technology and will be involved in knowledge sharing and distribution/handling of genetic material/seeds. In addition to be potential sources of information to the biosafety authorities on use of unauthorised germ plasm of seeds/on handling of genetic material/seeds, emergency or accidental releases or illegal transboundary movements	Farmers look mainly for increased food production and resistance to drought and insects. Seed companies still take advantage of the lack of legal and regulatory frameworks to continue to introduce LMOs in the target countries.

3.5 Project implementation structure and partners

99. The evaluation delved into an analysis of various documents and data obtained through interviews to gain insight into the structure of the project implementation and the roles of its partners.
100. At the international level, UNEP played a pivotal role as the GEF implementing agency, providing overarching supervision and technical support to the project. This involvement ensured that the project aligned with global environmental goals and standards. Regionally, RAEIN-Africa, operating as the Lead Executing Agency (LEA), worked in collaboration with the National Executing Agencies (NEAs) to oversee project management, offer technical support, and conduct monitoring and evaluation. This partnership was crucial in ensuring effective implementation and coordination across the participating countries. At the national level, the NEAs, representing the ministries responsible for biosafety in each country, played a key role. They signed agreements with designated national executing laboratories (MoU), responsible for carrying out the practical aspects of the project, such as LMO detection and to provide conditions for national authorities for decision-making. Labs, academic and research institutions were also integral partners. Selected laboratories within the target countries, along with universities, research institutes, and centers, contributed expertise and resources to support the project's objectives. Additionally, regulatory agencies played a crucial role in ensuring compliance with legal frameworks governing LMO directives. They were responsible for translating policy into action and overseeing regulatory processes.
101. The analysis of these partnerships and institutional arrangements provided valuable insights into the project's structure and functionality. It helped in understanding how different actors collaborated to achieve common goals and highlighted areas where improvements could be made for more effective implementation.
102. The frameworks extracted from the ProDoc offered a comprehensive and concrete view of the institutional arrangements followed by the project during the implementation. Figure 2 provides an overview of the institutional arrangements.

Figure 2. Institutional arrangement for the LMO project



3.6 Changes in design during implementation

103. During the implementation of the LMO project, the global emergency related to the COVID-19 pandemic led to significant changes in training methods, exchange of experience and maintenance of laboratory instruments. COVID-19-related restrictions made it impossible or at least very difficult for LMO project participants to meet physically, forcing a rapid adaptation of activities. As a result, innovative approaches based on digital tools and remote technologies had to be adopted to ensure the continuity of activities and the involvement of those involved.
104. Trainings and exchanges of experiences were transformed into virtual sessions through webinars, videoconferencing platforms and online courses. This approach made it possible to reach a wider audience and overcome geographical barriers, fostering greater involvement and effective knowledge sharing among participants. However, challenges related to internet connectivity, device availability and familiarity with digital technologies had to be addressed.
105. Similarly, the maintenance of laboratory equipment was rethought to adapt to the new circumstances. Where the physical presence of technicians was previously necessary to maintain and calibrate instruments, there has been an increasing use of remote maintenance procedures, with expert assistance via video conferencing or digital documentation. This approach has made it possible to reduce the dependence on physical visits and to ensure the continuity of laboratory activities despite pandemic-related restrictions.
106. Another change during implementation was procurement management. Considering the differences in the purchasing processes in the various countries, a centralised purchasing strategy was opted for, with South Africa acting as the hub for the supplies needed by the various countries involved in the project. RAEIN-Africa, as the lead implementing agency, played a key role in coordinating this process. The organisation managed the procurement

tenders, thereby facilitating the procurement process and ensuring greater efficiency. This approach made it possible to simplify purchasing procedures, reducing time and optimising available resources. The centralisation of purchases and the high quantity of purchases to a single supplier made it possible to negotiate advantageous conditions, with discounts on the total. It also ensured greater consistency and cohesion in the materials and instruments purchased for the various laboratories involved in the LMO project. This fostered better standardisation and uniformity of practices, thus helping to ensure the quality and effectiveness of the activities carried out.

3.7 Project financing

107. The tables below show the financial framework of the LMO project and the co-financing funds, both from the GEF and the contribution of the Governments involved.

Table 7. Project funding sources

Funding source	Planned funding	% of planned funding	Secured funding¹⁰	% of secured funding
<i>All figures as USD</i>				
Cash				
Funds from the GEF Grant	3 860 000.00	100%	3 860 000.00	100%
Funds from the Regular Budget	0	0	0	0
Extra-budgetary funding (listed per donor):	0	0	0	0
Sub-total: Cash contributions	3 860 000.00	100%	3 860 000.00	100%
In-kind				
Environment Fund staff-post costs	0	0	0	0
Regular Budget staff-post costs	0	0	0	0
Extra-budgetary funding for staff-posts (listed per donor)	0	0	0	0
Sub-total: In-kind contributions	0	0	0	0
Co-financing*				
Co-financing cash contribution	0	0	49 338.00	1%
Co-financing in-kind contribution	6 546 751.28	100%	6 546 751.28	100%
Sub-total: Co-financing contributions	6 546 751.28	100%	6 596 089.28	101%
Total	10 406 751.28	100%	10 456 089.28	101%

*Funding from a donor to a partner which is not received into UNEP accounts but is used by a UNEP partner or collaborating centre to deliver the results in a UNEP – approved project.

Table 8. Expenditure by Outcome/Output

Component/sub-component/output	Estimated cost at design	Actual expenditure	Cost/ ratio (actual/planned)
<i>All figures as USD</i>			
Component 1 (Trainings & Meetings)	1 463 365.33	1 463 365.33	100%
Component 2 (Equipment & Premises)	1 200 253.00	1 200 253.00	100%
Component 3 / (Miscellaneous)	484 076.69	484 076.69	100%

¹⁰ Secured funding refers to received funds and does not include funding commitments not yet realised.

Component 4 (Project Coordination)	380 000.00	380 000.00	100%
Component 5 (M&E)	332 304.98	272 304.98	82%
Totals	3 860 000.00	3 800 000.00	98%

Table 9. Co-financing

Co-financing (Type/Source)	UNEP own Financing (US\$1,000)		Government (US\$1,000)		Other* (US\$1,000)		Total (US\$1,000)		Total Disbursed (US\$1,000)
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
– Grants	3 860 000	3 800 000					3 860 000	3 800 000	3 800 000
– In-kind support			6 546 751	6 596 089			6 546 751	6 546 751.28	
– Other (*)						49 338		49 338.00	
Totals	3 860 000	3 800 000	6 546 751	6 596 089		49 338	10 406 751	10 396 089.28 ¹¹	3 800 000

*(DRC and Angola Cash Lab refurbishment)

Note: USD60,000 was reserved and spent directly by UNEP for the Terminal Evaluation.

4 Theory of Change at evaluation

108. The evaluation team used the reconstructed Theory of Change (ToC) at evaluation based on the ToC formulated during the Inception Report phase of the evaluation, following the guidelines provided by UNEP. It is worth noting that, as it was not requested by the GEF, the ToC was not included in the project document of the MCP-ICLT/ LMO project. However, with the assistance of the UNEP Task Manager, the LEA constructed a ToC during the LMO project inception phase in 2017. Therefore, for the definition of the ToC in the Terminal Evaluation Inception Report phase, the LMO project document (ProDoc) and the Logical Framework of the Project were taken into consideration¹². From this desk review analysis, the following framework emerges.
109. The main objective of the LMO project was to “contribute to ensuring an adequate level of protection in the field of the safe transfer, handling, transport, and use of LMOs resulting from LMOs that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and specifically focusing on transboundary movements”¹³. The overall objective of the project was therefore to build and strengthen institutional and human capacities for the detection of LMOs to support national biosafety decision-making processes in selected countries in Southern Africa.
110. From this perspective, the Reconstructed Theory of Change (RToC) at evaluation was as follows: if institutional and human capacities for detecting LMOs are strengthened and if governments can make appropriate biosafety decisions in the target countries, then an adequate level of protection in the field of the safe transfer, handling, transport, and use of

¹¹ USD60,000 was reserved and spent directly by UNEP for the Terminal Evaluation.

¹² In 2019, the Mid-Term Review (MTR) reconstructed the Theory of Change (ToC) for the project. The initial ToC, presented to and discussed with project partners during the MCP-ICLT project launch in 2017, provided a framework for understanding the project's intended impact and the steps necessary to achieve it. The ToC at MTR 2019 was further revised during the inception phase.

¹³ ProDoc, 2016.

GMOs resulting from LMOs will be ensured, with positive effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and specifically focusing on transboundary movements, because there is consolidated capacity at different levels to manage LMO detection.

111. The reconstructed ToC (referred to as the RToC at the Evaluation), discussed with RAEIN-Africa and the target countries of the LMO project, and analysed considering laboratory visits, interview results, as well as literature review, globally confirmed what was hypothesized in the RToC at the inception phase in the Inception Report.

Table 10. Justification of the reformulation of result statements

Formulation in original project document(s)	Formulation for Reconstructed ToC at Evaluation Inception (RToC)	Formulation for Reconstructed ToC at Evaluation Final Report (RToC at Evaluation)	Justification for Reformulation
(LONG LASTING) IMPACT			
To contribute to ensuring an adequate level of protection in the field of safe transfer, handling, transport and use of LMOs resulting from LMOs that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and specifically focusing on transboundary movements	Adequate conservation & sustainable use of biodiversity, taking into account human health and environment <i>Science based decisions contributing to human and animal health and protection of the environment</i>	Adequate conservation & sustainable use of biodiversity, taking into account human health and environment <i>Science based decisions contributing to human and animal health and protection of the environment</i>	This reformulation emphasised the long-term impact of the project
INTERMEDIATE STATES			
To build and strengthen institutional and human capacities for LMO detection in support of national biosafety decision making processes in selected Southern African Countries	1. Laboratories highly empowered, experienced and operational in LMOs detection and testing, becoming a solid reference for policy decisions on human health and environment.	2. Laboratories highly empowered, experienced and operational in LMOs detection and testing, becoming a solid reference for policy decisions on human health and environment.	Two distinct but interrelated intermediate states were formulated and hypothesised for the impact to be realised: one indicating the realisation of the capabilities of the laboratories and their conquered centrality, and the other referring to how the countries were successful in collaborating.
	3. Target countries consolidated technical capacities and a high level of sustainable collaboration, establishing science-based decision-making processes for LMO detection and biosafety.	4. Target countries consolidated technical capacities and a high level of sustainable collaboration, establishing science-based decision-making processes for LMO detection and biosafety.	
PROJECT OUTCOMES			
1. Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection.	1. Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection.	2. Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection.	As in the ProDoc
2. Minimum Human and Institutional level of competency in LMO Testing Attained	3. Minimum Human and Institutional level of competency in LMO Testing Attained	4. Minimum Human and Institutional level of competency in LMO Testing Attained	As in the ProDoc

Formulation in original project document(s)	Formulation for Reconstructed ToC at Evaluation Inception (RToC)	Formulation for Reconstructed ToC at Evaluation Final Report (RToC at Evaluation)	Justification for Reformulation
3. Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created.	5. Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created.	6. Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created.	As in the Prodoc
4. Technical support to strengthening LMO detection and biosafety decision-making processes in the targeted countries.	7. Strengthening LMO detection and biosafety decision-making processes by decision makers through technical support.	8. Strengthening LMO detection and biosafety decision-making processes by decision makers through technical support.	The importance of decision makers needs to be stressed.
OUTPUTS			
OUTPUT 1 1.1 Guidance document on minimal infrastructure for LMO detection. 1.2 Adequate functional equipment and facilities for LMO detection.	OUTPUT 1 1.1 Guidance document on minimal infrastructure for LMO detection developed and shared with project stakeholders. 1.2 Adequate functional equipment and facilities for LMO detection.	OUTPUT 1 1.1 Guidance document on minimal infrastructure for LMO detection developed and shared with project stakeholders. 1.2 Adequate functional equipment and facilities for LMO detection.	Only in Output 1.1 was there a slight rewording to emphasise stakeholder participation.
OUTPUT 2 2.1 Laboratory personnel equipped with technical expertise in Quality Management Systems. 2.2 Adequate technical backstopping in support of implementation processes. 2.3 Guidance document on Best Practices in LMO detection adapted for the regional context.	OUTPUT 2 2.1 Laboratory personnel equipped with technical expertise in Quality Management Systems. 2.2 Adequate technical backstopping in support of implementation processes. 2.3 Guidance document on Best Practices in LMO detection adapted for the regional context.	OUTPUT 2 2.1 Laboratory personnel equipped with technical expertise in Quality Management Systems. 2.2 Adequate technical backstopping in support of implementation processes. 2.3 Guidance document on Best Practices in LMO detection adapted for the regional context.	As in the Prodoc
OUTPUT3 3.1 Platforms for information exchange established and functional. 3.2 Project materials and guidance manuals well documented and published. 3.3 Established Linkages and partnerships with other regional, international LMO detection laboratories.	OUTPUT3 3.1 Platforms for information exchange established and functional. 3.2 Project materials and guidance manuals well documented and published. 3.3 Established Linkages and partnerships with other regional, international LMO detection laboratories.	OUTPUT3 3.1 Platforms for information exchange established and functional. 3.2 Project materials and guidance manuals well documented and published. 3.3 Established Linkages and partnerships with other regional, international LMO detection laboratories.	As in the Prodoc
OUTPUT4 4.1 Policy makers aware of the importance of LMO testing to support decision making. 4.2 Skills and techniques for sampling, handling documentation of LMOs provided to regulatory chain actors (Boarder official etc.)	OUTPUT4 4.1 Policy makers aware of the importance of LMO testing to support decision making. 4.2 Skills and techniques for sampling, handling documentation of LMOs provided to regulatory chain actors (Boarder official etc.)	OUTPUT4 4.1 Policy makers aware of the importance of LMO testing to support decision making. 4.2 Skills and techniques for sampling, handling documentation of LMOs provided to regulatory chain actors (Boarder official etc.)	As in the Prodoc

Causal pathways

112. Intermediate State 1: Laboratories highly empowered, experienced and operational in LMOs detection and testing, becoming a solid reference for policy decisions on human health and environment.
113. This intermediate stage was produced linearly by the achievement of the corresponding outcomes and outputs.
114. Outcome 1 Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection was therefore realised through Outputs 1.1 Guidance document on minimal infrastructure for LMO detection developed and shared with project stakeholders and 1.2 Adequate functional equipment and facilities for LMO detection. Interviews and visits to the laboratories carried out showed that the guidelines and technical laboratory equipment provided by the LMO project, through the Technical Advisors and the RAEIN-Africa staff, were a crucial point for having efficient and well-prepared laboratories to support the target countries instrumentally. Most of the target countries, prior to the implementation of the LMO project, had inadequate facilities, with no logical organisation to ensure a certifiable testing process, no tools to perform minimal analyses or just receive samples and store them properly. Therefore, the LMO project made a fundamental quality leap for many of the laboratories involved, which were also oriented in a physical organisation. In the public laboratories of Angola, Malawi and Mozambique, for example, the facilities underwent a physical renovation, some sections even built from scratch, which, guided by the guidelines produced, brought the facilities up to international minimum standards for handling LMO analyses. The LMO project also provided modern, high-quality tools and equipment, and thus adequate for the proper management of LMOs.
115. Outcome 2 Minimum human and institutional level of competency in LMO testing attained focused on strengthening the institutional and human capacity, which was achieved through the attainment of outputs 2.1 Laboratory personnel equipped with technical expertise in Quality Management Systems, 2.2 Adequate technical backstopping in support of implementation processes and 2.3 Guidance document on Best Practices in LMO detection adapted for the regional context. In fact, this outcome focused on training staff to improve their knowledge and use of equipment in laboratory LMO management. In this way, trainings and technical sessions (adapted in the COVID-19 period also by online sessions) were realised for the human resources and institutions of the target countries involved in the project, also oriented to improve the laboratory management itself and the relations with the institutions at different levels, aimed at sustainability and sharing. The level of the laboratory technicians in some countries, which was already basically high (e.g. in Mozambique, the people working in the two target laboratories and in charge of the analyses, trained by the project, almost all have a high level of preparation, a Master's degree or even a PhD), was considerably improved by the LMO project, which further enhanced the specific technical capacities in LMO analysis, increasing both the skills of the staff and of the institution/laboratory itself. The institutions involved in the project were continuously supported by both RAEIN-Africa and the Technical Advisors (also by the UNEP Task Manager), not only about technical issues, but also about logistical (acquisition of material after the end of the project) and organisational issues (definition of certificates and international laboratory authentication - although the latter was not required by the project).
116. For the realisation of Outcomes 1 and 2, it was assumed that the regulatory systems would be efficient and resilient, supported by strong political will at various levels. This assumption was confirmed through observations and consultations at the institutions involved, especially at ministerial and laboratory levels. The institutions consulted demonstrated a clear willingness

to make LMO detention systems work. This commitment was evident both in the ministries involved, where specific policies and strategies for the management of LMOs were identified, and in the laboratories, where rigorous procedures and protocols for the detection and management of LMOs were put in place. Although there is no uniformity in regulatory systems among the target countries, there was a strong awareness of the need to protect and control the movement of LMOs within the country. Particularly in high-risk areas, such as emergency areas like Cabo Delgado in Mozambique and South Malawi that border the country, the importance of improving the management of LMOs was recognised. Awareness of the risk of loss of control has prompted national governments to promote improved management of LMOs. In addition, the importance of laboratory certification has been recognised as a key tool to ensure effective control of the territory and to ensure that LMO-related activities are conducted safely and in compliance with regulations. Therefore, although there are regulatory differences between target countries, the political will and urgency to protect the national territory and population from LMO-related risks stimulated concrete actions to improve the management and control of LMOs, supporting the achievement of Outcomes 1 and 2 of the LMO project.

117. Intermediate Status 2: Target countries consolidated technical capacities and a high level of sustainable collaboration, establishing science-based decision-making processes for LMO detection and biosafety
118. This intermediate stage was also produced linearly by the achievement of the corresponding outcomes and outputs. This stage was achieved even though both outcomes and outputs were affected by the consolidation and sustainability of COVID-19 and the impossibility of holding face-to-face meetings for some time.
119. Outcome 3 Sustainable opportunities for sharing expertise, experiences and resources on LMO detection created. Prior to COVID-19, the Project carried out several face-to-face sharing activities, mainly in South Africa, which allowed for the creation of a heterogeneous but compact working group between RAEIN-Africa, coordinators and technicians of the partner country members. Cross-visits were also carried out during this phase (e.g. the LMO project coordinator in Mozambique visited Angola), which allowed sharing of experiences and improvements in the workshops and in possible project management. With COVID-19, the consolidation of these mechanisms was partly lacking. 3.1 Platforms for information exchange established and functional. Platforms were used during the project implementation, although these were drawn from COVID-19 and, to some extent, not consolidated after the end of the project. Regular meetings with multi-actor National Project Steering Committees were planned, but the pandemic prevented in-person meetings. Online meetings were more sporadic, in general in all countries (less so in Mozambique, where there was active communication and rapport between the workshops and the different stakeholders involved), preventing an effective broadening of the sharing and exchange of experiences in LMO management at the national level. In any case, the LMO project's lead ministry remains the main interlocutor and sharer of progress at the level of the other ministries. 3.2 Project materials and guidance manuals well documented and published. Project materials and guidance manuals documenting e.g. guidelines for laboratory access, LMOs and their progress were published. 3.3 Established linkages and partnerships with other regional, international LMO detection laboratories. Crucial to this output was the relationship with RAEIN-Africa and the Technical Advisors, who even now, after the end of the Project, continue to support the target countries with advice, suggestions, facilitation of contacts and especially for proceedings concerning the international accreditation of laboratories (e.g. Mozambique). Opportunities were in fact created, although they would have needed more consolidation. In some cases, such as that of Angola, which had internal difficulties due to the implementation of the project, the Government of Angola decided to participate in another European funding

to strengthen the laboratory part of the LMO project, contributing to improve the steps already created with the LMO project and using other resources.

120. Outcome 4 Strengthening LMO detection and biosafety decision-making processes by decision makers through technical support. This is certainly one of the most obvious outcomes and one that strongly correlates with Outcomes 1 and 2, as the improvement of both facilities and equipment as well as personnel, allowed for a clear and certified process in LMO and biosafety detection and thus gave decision makers the tools to make science-based decisions. 4.1 Policy makers aware of the importance of LMO testing to support decision making. The ministries of the target countries showed satisfaction in LMO certification due to the project because they can control LMO management and biosafety. This has also led to increased authority and compliance with the national regulatory flow of certification. For example, in Mozambique and Malawi, institutions that need to have a certificate to trade agricultural products within and outside the country's borders are clear about the certification process and which institutions to turn to for testing. The project's target laboratories, therefore, support with analyses the decisions taken by the national authorities, considering that the LMO certification they produce allows access to official documents issued by the Ministry for the transport of goods. Also, the realisation of output 4.2 Skills and techniques for sampling, handling documentation of LMOs provided to regulatory chain actors (Border officials, etc.) has improved the skills and techniques for sampling, handling documentation of LMOs thus giving the actors involved in the regulatory process, the tools to adequately exercise their function and authority, strengthening the entire decision-making chain on biosafety and LMO management. For example, at the border of Mozambique and Malawi, authorities can require ministerial certification for companies that transport and trade food and agricultural products, confident that there are capable and efficient laboratories in the country to do so.
121. The key assumption for the realisation of Outcomes 3 and 4 of the LMO project was that the target countries had consolidated technical capacity and a high level of sustainable collaboration, establishing science-based decision-making processes for LMO detection and biosafety. This assumption was indeed confirmed for the following reasons:
- Established technical capabilities: Through the LMO project, the target countries developed and strengthened their technical capacities for LMO detection and biosafety management. Training and knowledge transfer activities were conducted that enabled local experts to acquire specialised skills in the detection and management of risks associated with GMOs.
 - High level of sustainable collaboration: Target countries have promoted collaboration and coordination between various stakeholders, including research institutes, government authorities, and civil society organisations. Formal and informal collaboration mechanisms have been established to facilitate the exchange of knowledge, experience and resources to address biosafety challenges.
 - Science-based decision-making processes: Target countries have adopted science-based approaches to making decisions regarding the management and regulation of LMOs. Strict protocols and procedures for monitoring, risk assessment and management of transboundary movements of LMOs have been implemented, ensuring informed and evidence-based decision-making.
 - Tangible results: Actions taken by target countries have led to tangible results, such as the implementation of biosafety regulations, support for specialised LMO detection laboratories, and active participation in regional and international cooperation on biosafety.

122. The assumption of established technical capabilities and sustainable collaboration for science-based decision-making was confirmed by the evidence gathered during the LMO project. This contributed to the success of Outcomes 3 and 4, providing a solid basis for the implementation of the planned actions and the achievement of the project objectives.
123. The expected impact of the LMO project to contribute to 'adequate conservation & sustainable use of biodiversity, considering human health and environment science-based decisions contributing to human and animal health and protection of the environment' is confirmed in the RToC at the Evaluation. Improved and adapted capacities of institutions in LMO management have enabled science-based decisions and policies. This confirmation stems from the finding that the institutions involved in the project showed a clear commitment to improving their capacities and competencies in LMO management. This commitment has resulted in science-based policies, protocols and procedures that have contributed to making informed decisions and developing effective policies to protect human and animal health and the environment. The adoption of science-based approaches has ensured that decisions regarding LMOs are based on sound scientific evidence, minimising risks to health and the environment. This has contributed significantly to achieving the goal of conservation and sustainable use of biodiversity, while ensuring the protection of human and animal health and the environment.
124. As for the factors that motivated the realisation of the LMO project results in Africa from within, they were slightly reworded, being common to all results:
- The stakeholders involved were actively engaged in implementing measures to increase gender equality and to improve the integration of vulnerable groups. The active involvement of stakeholders is an important element for the success of the LMO project. The institutions involved demonstrate a strong commitment to implementing measures to promote gender equality and improve the integration of vulnerable groups. This commitment results in tangible support and significant participation by the institutions involved in the project. In particular, the project shows a high involvement of women at all levels and at different stages. Women not only actively participate in the design and implementation of the project, but also occupy leadership, management, research and training roles. This involvement not only brings unique perspectives to the project, but also contributes to a more inclusive and diverse working and research environment.
 - Joint and regular project and financial planning helped to allocate appropriate resources to achieve results. RAEIN-Africa's support both administratively and financially has been crucial to the success of the project and the achievement of its objectives, even partly overcoming the barriers of COVID-19. Collaboration in planning enables effective prioritisation and allocation of resources, ensuring that funding is adequate to meet project needs. Support from RAEIN-Africa provided not only financial resources, but also administrative support that facilitated the management of project activities. Despite the difficulties imposed by the COVID-19 pandemic, RAEIN-Africa's continued support enabled the project to adapt to new challenges and maintain its momentum. This demonstrated the importance of a strong partnership and stable financial support in ensuring the success and achievement of the project's objectives.
 - Stakeholder interest in the project grew and the political will was geared towards stimulating an efficient and inclusive regulatory system. This interest resulted from the recognition of the importance of the project and its objectives by the people and institutions involved. RAEIN-Africa stimulated this interest, despite remote support, by creating a strong relationship and continuous assistance with the target countries. The political will to

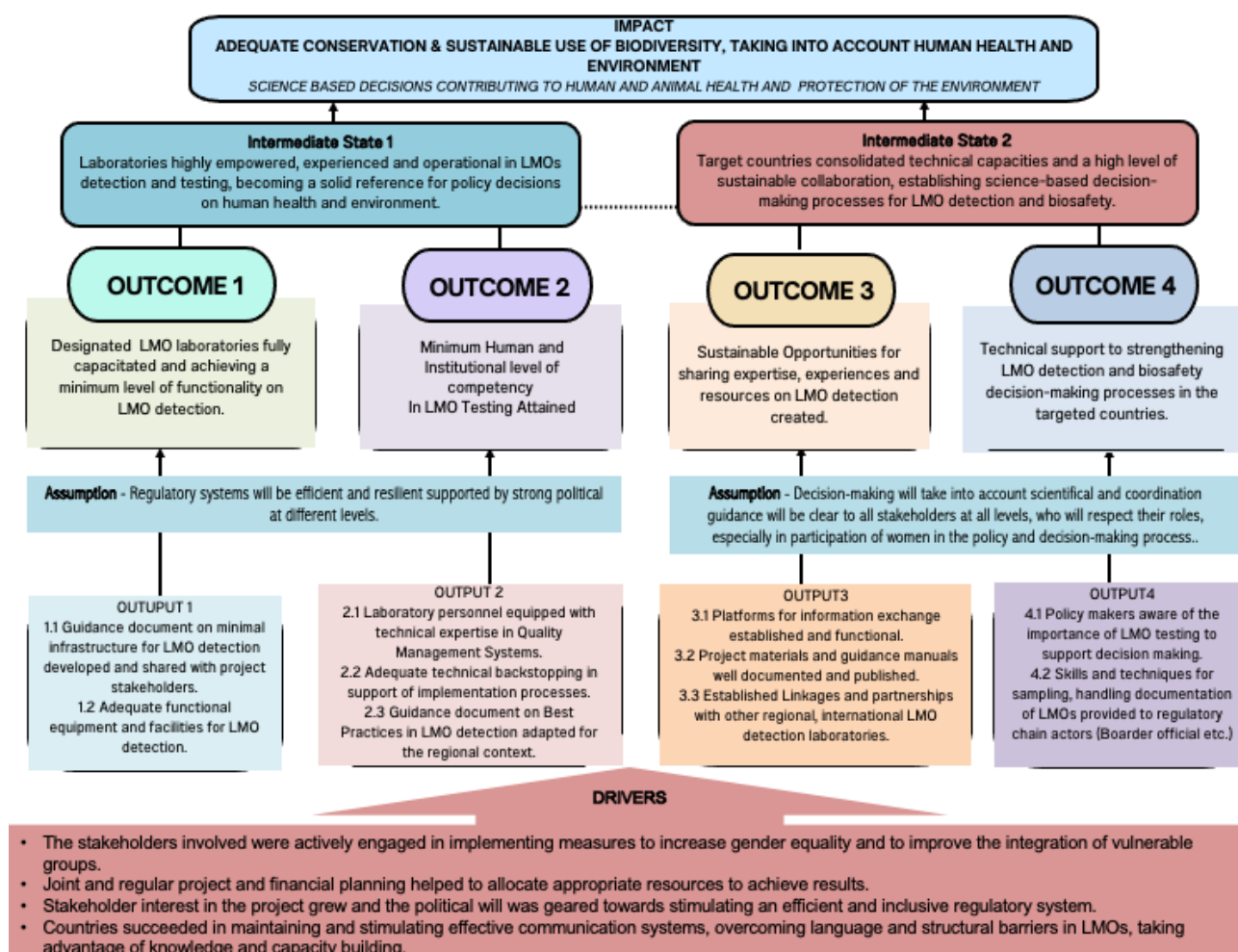
promote an efficient and inclusive regulatory system reflects the commitment of policy makers to ensure that laws and regulations are appropriate, effective and inclusive of all stakeholders. This commitment is essential to ensure that the project has a positive and lasting impact, even if the timeframe for achieving appropriate regulation is very long compared to the life of the project.

- Countries succeeded in maintaining and stimulating effective communication systems, overcoming language and structural barriers in LMOs, taking advantage of knowledge and capacity building. This was possible through the harnessing of knowledge and capacity building and the great effort RAIEN-Africa invested in the project and communication. Language barriers were partly overcome with great effort by all, which enabled effective communication at least at the coordination level in the various countries due to effective communication and knowledge sharing, information on the risks and opportunities of LMOs was disseminated in a clear and understandable manner, enabling the various actors to collaborate and make informed decisions. This fostered greater awareness and understanding of LMOs, thus contributing to the success of the project.

125. Table 10 presents a justification of the reconstructed ToC with respect to the Inception Report, for a better understanding of the subsequent diagram in Figure 3.

126. Therefore, the reconstructed ToC diagram in Figure 3, as follows, represents the ToC at evaluation and maintains the structure that arises from the ProDoc and then from the Inception Report of the LMO project.

Figure 3. Reconstructed ToC at evaluation



5 Evaluation findings

5.1 Strategic relevance

Alignment to the UNEP Medium Term Strategy (MTS), Project of Work (POW) and strategic priorities

127. The project is in alignment with UNEP's 2014-2017 Medium-Term Strategy (MTS) and reflects the emphasis on global, regional, and national environmental governance to address common environmental priorities. Considering its focus on capacity building and, to some extent, technological support (such as training and laboratory upgrades), the project also aligns with the Bali Strategic Plan (BSP). It has actively addressed many of the cross-cutting issues, including bolstering national institutions, developing national laws and/or regulations, and meeting obligations under multilateral environmental agreements. The project is also coherent with UNEP's Programme of Work (PoW) 2016-2017 and Expected Accomplishment (EA), which focuses on enhancing Countries capacities to implement environmental obligations and achieve priority targets.
128. Additionally, the project extends its alignment to encompass UNEP's Medium-Term Strategies for 2018-2021 and 2022-2025, reflecting ongoing efforts to prioritize environmental governance on multiple levels, even though these strategies were defined after the project's approval. It is also in harmony with UNEP's PoW for 2018-2019 and 2020-2021, each designed to further empower nations to meet their environmental obligations and achieve critical targets, continuing the project's legacy of strengthening institutional capacities and technological support for environmental management.
129. The project aligns with the MTS, specifically with the Strategy of the Subprogramme on Environmental Governance, focusing on Environment and Sustainable Development Primary Outcome:
 - Outcome 2: Citizen expectations for voice, development, the rule of law, and accountability are met by stronger systems of democratic governance.
 - Output 2.5: Legal and regulatory frameworks, policies, and institutions are enabled to ensure the conservation, sustainable use, and access and benefit-sharing of natural resources, biodiversity, and ecosystems, in line with international conventions and national legislation.
130. The project is consistent with the UNEP Medium-Term Strategy of the Subprogramme on Environmental Governance, aiming to strengthen environmental governance at the country, regional, and global levels to address agreed priorities.
131. In relation to the MTS, the project is consistent with the following primary and secondary outcomes, aligning with the Environmental Governance sub-programme of the MTS 2014-2017. Specifically, it supports Expected Accomplishment EA2, which aims to enhance the capacity of countries to develop and enforce laws and strengthen institutions to achieve internationally agreed environmental objectives and goals and comply with related obligations.:
 - Primary Outcome:
 - Strengthening environmental governance at national, regional, and global levels.
 - Secondary Outcomes:
 - Strengthened legal and regulatory frameworks for environmental protection.
 - Enhanced capacity for sustainable natural resource management.
 - Improved access to and equitable sharing of environmental benefits.

- Enhanced integration of environmental considerations into development planning and decision-making processes.
- Increased public participation in environmental decision-making.
- Strengthened environmental rule of law and enforcement mechanisms.

Rating for Alignment to UNEP MTS, POW and Strategic Priorities: **Highly Satisfactory**

Alignment to donor/GEF/partner strategic priorities

132. The project was developed under the GEF Objective 3 of the Biodiversity Focal Area, aiming to implement the Cartagena Protocol on Biosafety (CPB) under GEF-5 Strategy. It aligns with Outcomes 2.1, 2.2, and 2.3 of Objective 2. Emphasizing the need for national biosafety frameworks to implement the CPB, as highlighted in the Updated Action Plan for Building Capacities for the Effective Implementation of the Cartagena Protocol (adopted at COP-MOP-3), was a pivotal aspect of the project.

Rating for Alignment to Donor/GEF/Partner Strategic Priorities: **Highly Satisfactory**

Relevance to global, regional, subregional and national environmental priorities

133. The MCP-ICLT/ LMO project has fostered South-South cooperation on biosafety at the regional level through both physical and online meetings, significantly strengthening the network of cooperation and scientific exchange across the Southern Africa region. Furthermore, the project has leveraged the expertise of regional consultants (e.g. Technical Advisors from Southern Africa) for capacity-building activities creating links and cooperation.

134. In addition to leveraging regional expertise, the project's alignment with:
- (i) the Sustainable Development Goal (SDG) 2 “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”.
 - i. Target: 2.5 - By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels [BIOSAFETY], and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.
 - (ii) Africa's Agenda 2063.

135. The alignment with these two key strategies has been evident, particularly in its response to the environmental priorities and needs outlined in national and regional frameworks. This alignment underscores the project's role in bolstering biosafety and LMO containment capabilities, fulfilling regional and international environmental commitments.

136. The external food dependence of the project's target countries and the challenges in controlling overland trade have exposed crops to high risks of unauthorized LMO products/introduction. Therefore, the LMO project aligns perfectly with the needs of countries in terms of both human health safety and Biosafety oriented towards transparent and regulated LMO management. Although many countries only have draft regulations rather than solid legislation, this project has helped organize LMO certifications and the capacity of laboratories, which are the only ones in the country to do so and have authorization.

Rating for relevance to global, regional, subregional and national environmental priorities: **Highly Satisfactory (HS)**

Complementarity with relevant existing interventions/coherence

137. The project is an extension of prior initiatives supported by UNEP/GEF, aimed at strengthening biosafety and biodiversity conservation across Angola, Mozambique, Lesotho, Malawi, Madagascar, and the DRC. It capitalizes on the institutional networks and achievements of previous projects, integrating with ongoing efforts to support the National Biosafety Framework and enhance regional biosafety capabilities. Biosafety is of significant relevance in the target countries, as demonstrated both during interviews and by the concern for legislative support expressed by many of the interviewed Ministries. The richness and strategic role of biodiversity in the Southern Africa region, as well as the challenges in protecting and controlling borders and territory, are concerns for the target states. Climate change, increasing food insecurity, and the need to produce climate-resistant but safe seeds and crops are persistent and recurring topics for the interviewed countries, particularly in recent years because of climate change and increasing periods of drought.
138. Due to the experience gained from the LMO Project, Angola has secured a EU-funded project by the Angolan government worth 3.2 million euros, under the Convention to Support Job Creation and the Investment Climate to further expand and strengthen the analysis laboratory that benefited from the project's support. Until 2027, Angola will receive additional technical support from Technical Experts through seminars, training courses, and equipment provision to enhance the laboratories' quality control capabilities. This falls within the scope of the Technical Assistance to Angola on Safety and Quality Standards project, funded by the European Union.
139. The Italian Agency for Development Cooperation (AICS) has a longstanding history of supporting laboratories at the Eduardo Mondlane University (UEM) in Mozambique, contributing significantly to the region's scientific research. Over the past four years, AICS has infused 5 million euros into research initiatives, bolstering the capabilities and resources of UEM laboratories. This support has enhanced research activities and reinforced the university's role in advancing scientific knowledge and technological innovations in the region.

Rating for Complementarity with Relevant Existing Interventions/Coherence: **Highly Satisfactory (HS)**

140. The relevance of the LMO project is therefore highly satisfactory in terms of alignment and coherence with major international, national and regional policies and strategies.

Rating for strategic relevance: **Highly Satisfactory (HS)**

5.2 Quality of project design

141. The Project Design Quality (PDQ) was assessed in this evaluation report using the "Template for the Assessment of Project Design Quality (PDQ)" provided by the UNEP Evaluation Office in Table 9 below¹⁴. This table provides an estimation and numerical ranking of the project design quality score. The LMO project has scored 5.2 between 'Satisfactory' and 'Highly Satisfactory', achieving a very positive assessment of the quality of the project design.

¹⁴ <https://communities.unep.org/display/EOU/INDEPENDENT+EVALUATION+TOOLS+AND+TEMPLATES>

Table 11. LMO project design quality score

	SECTION	SELECT RATING Original	SCORE (1-6)	WEIGHTING	TOTAL (Rating x Weighting)
A	Operating context	Satisfactory	5	0.4	2
B	Project preparation	Satisfactory	5	1.2	6
C	Strategic relevance	Highly Satisfactory	6	0.8	4.8
D	Intended results and causality	Satisfactory	5	1.6	8
E	Logical framework and monitoring	Satisfactory	5	0.8	4
F	Governance and supervision arrangements	Highly Satisfactory	6	0.4	2.4
G	Partnerships	Highly Satisfactory	6	0.8	4.8
H	Learning, communication and outreach	Satisfactory	5	0.4	2
I	Financial planning / budgeting	Satisfactory	6	0.4	2.4
J	Efficiency	Satisfactory	5	0.8	4
K	Risk identification and social safeguards	Satisfactory	5	0.8	4
L	Sustainability / replication and catalytic effects	Satisfactory	4	1.2	4.8
M	Identified project design weaknesses/gaps	Satisfactory	5	0.4	2
				TOTAL SCORE (Sum Totals)	5.2
					Highly Satisfactory

1 (Highly Unsatisfactory)	< 1.83	4 (Moderately Satisfactory)	>=3.5 <=4.33
2 (Unsatisfactory)	>= 1.83 < 2.66	5 (Satisfactory)	>4.33 <= 5.16
3 (Moderately Unsatisfactory)	>=2.66 <3.5	6 (Highly Satisfactory)	> 5.16

142. Based on additional information gathered during the main evaluation phase, the evaluation team maintained a positive view regarding the project's subsequent design and implementation. However, the project design did not anticipate the challenges posed by the COVID-19 pandemic, resulting in adjustments to the schedule, budget, and activities. The LMO project's extension was primarily due to COVID-19 pandemic. RAEIN-Africa effectively addressed barriers arising from travel restrictions by implementing strategies such as virtual exchanges and technical assistance for laboratory calibration.
143. While the project was well outlined in general, there were specific issues, particularly in Angola, where internal dynamics and structural difficulties were underestimated. COVID-19 hindered the implementation strategy for Angola, highlighting gaps in project sustainability.
144. The review of the project design focused on the parameters of:
- Operational context: The project identified challenges but did not consider factors like conflict or climate change, which were examined during the evaluation. Although partially relevant, they did not significantly impact the LMO project. **Satisfactory.**

- Project preparation: While there was stakeholder involvement, the focus on human rights and gender issues was unclear. However, RAEIN-Africa demonstrated a high level of engagement with partners, including women in leadership roles. Human rights were respected, with attention paid to the well-being of project personnel. **Satisfactory.**
- Strategic relevance: The project aligned well with UNEP and donor strategies, supporting national capacity development for LMO detection. **Highly satisfactory.**
- Governance and partnerships: Project structures and partnerships were adequate, though language and management barriers existed. RAEIN-Africa made efforts to overcome language barriers, but challenges remained with French-speaking countries. **Satisfactory.**
- Financial planning: Budgeting was well-structured and aligned with the project's scope. RAEIN-Africa was highly responsive in communication. **Highly satisfactory.**
- Risk identification and sustainability: Major risks were identified, but macro risks like political conflicts were not considered. Sustainability, initially satisfactory, was impacted by COVID-19 and financial challenges faced by public laboratories. **Moderately satisfactory.**
- Identified weaknesses: No significant weaknesses were found, with COVID-19 posing the greatest challenge. A contingency plan for countries facing management difficulties could have been considered. For instance, direct assistance from RAEIN-Africa could have been provided to countries like Angola and DRC. **Satisfactory.**

Rating for quality project design: **Highly Satisfactory (HS)**

5.3 Nature of the external context

145. The COVID-19 pandemic significantly disrupted the linear implementation of the LMO Project, creating various barriers for in-person training and necessitating the implementation of adaptation strategies by RAEIN-Africa.
146. Firstly, the pandemic led to restrictions on travel and gatherings, making it impossible to conduct in-person training sessions and exchange of experiences as initially planned. This posed a challenge as hands-on training and workshops were essential components of the project's capacity-building efforts. The closure of borders and restrictions on international travel hindered the mobility of project personnel, experts, and consultants who were crucial for providing technical support and guidance to project partners and beneficiaries in target countries.
147. To address these challenges, RAEIN-Africa implemented adaptation strategies, primarily focusing on virtual training and remote technical assistance. Webinars, online workshops, and virtual meetings replaced in-person sessions, allowing project participants to continue learning and collaborating while adhering to social distancing guidelines.
148. RAEIN-Africa also provided remote technical support to laboratories, helping them overcome operational challenges and ensuring the continuity of LMO detection and testing activities. This involved offering guidance on instrument calibration, troubleshooting, and data analysis through online platforms. Furthermore, RAEIN-Africa collaborated with local partners to develop and distribute training materials and resources that could be accessed remotely, enabling project beneficiaries to continue their capacity-building efforts independently. Despite the challenges posed by the COVID-19 pandemic, the adaptation strategies implemented by RAEIN-Africa (with considerable effort) ensured the continuity of project activities and minimized disruptions to the overall implementation of the LMO project.

149. In DRC and Madagascar, for example, the coordination capacity of the LMO project faced significant challenges as national project coordinators endured severe personal hardships¹⁵. This critical situation highlighted the need for robust support systems and contingency plans to safeguard the well-being of key project personnel, ensuring the continuity of critical project operations despite personal adversities. RAEIN-Africa provided support to the countries in these aspects, helping to maintain project momentum under difficult circumstances.
150. From another hand, the COVID-19 pandemic stimulated the adoption of digital tools for the LMO project, enabling online meetings, trainings and communications improving these digital capacities. This transition revealed new ways of effective and efficient collaboration, enabling frequent and timely meetings between participants and involving a larger number of people through online training platforms. Even after the LMO project's end, virtual collaboration has remained an important resource for maintaining active relationships and promoting knowledge exchange, contributing to the maintenance of the initiatives undertaken.

Rating for nature of external context: **Favourable (F)**

5.4 Effectiveness

151. The information from the project team in the "Final Project Output Summary" table and the "Terminal Report" on ANUBIS was systematically analysed by the evaluation team based on the pathway outlined in the Reconstructed Theory of Change at Evaluation. Laboratory visits and interviews enriched the information provided in the reports. The availability of outputs is described by components and outcomes, following the sequence in Table 10. The "Availability of Outputs" section summarizes key activities and the process for delivering the expected outputs, encompassing all project activities implemented.

5.4.1 Availability of outputs

Table 12. Availability of Output 1

Outputs related to Outcome 1 (Component A)	Indicators	Baseline	Target at the end of Project	Level of Achievement
1.1 Guidance document on minimal infrastructure for LMO detection developed and shared with project stakeholders.	Proportion of laboratories using guidance document to determine laboratory requirements	General guidance document available on the BCH but not used by the countries	All eleven laboratories produced spatial designs based on their facility configurations	Fully Achieved
1.2 Designated labs have adequate, functioning equipment.	Proportion of laboratories with adequate equipment and facilities for LMO detection	Only 30% of targeted designated laboratories with Level 4 testing capacity	All the 11 participating laboratories were redesigned and/ or renovated and equipped with the necessary equipment for LMO testing. Implementation of recommended spatial orientation designs in all 11 labs was carried out.	Fully Achieved
1.3 Designated laboratories are able	Proportion of designated	30% of laboratories	Designated LMO laboratories are fully	Fully Achieved

¹⁵ During the COVID-19 pandemic, the tragic loss of the National Coordinators in DRC and Madagascar temporarily severely impacted coordination efforts. This unfortunate event underscored the critical need for robust support systems and contingency planning to ensure the continuity of project operations even during personal and public health crises. RAEIN-Africa provided essential support during this period, helping to stabilize project activities in these countries despite the significant challenges posed by the loss of key personnel.

to achieve internationally acceptable standard for LMO detection	laboratories proficient in LMO detection	capable of conducting Level 4 testing; 70% of laboratories not capable of LMO testing. (Use earlier report on proficiency as a baseline)	capacitated and equipped for LMO detection functionality	
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152. Initial lab capacity assessments were performed during the MCP-ICLT project formulation phase (2013/2014), informing the project interventions proposed in the ProDoc. At the inception of the LMO project, and the site visits at project inception (2017) were carried out by Technical Advisors from a certificated lab in South Africa to update the existing infrastructure and capabilities of the laboratories in the six countries, considering the passage of time from stocktaking to project initiation. These assessments revealed significant deficiencies in terms of spatial layout, equipment availability, and technical expertise for LMO testing. The labs lacked essential resources and infrastructure needed to function effectively as LMO testing facilities. These findings confirmed the relevance of proposed LMO project interventions, as, in all the project countries, no improvements had been realised in the three intervening years (2014 to 2017). At the same time, a renovation of laboratory management procedures was initiated to ensure compliance with minimum standards for LMO testing certification, including measures and adequate methods to manage (collect and protect) samples.
153. All 11 laboratories participated in redesigning their spatial layouts based on facility configurations, ensuring compliance with minimal infrastructure guidelines for LMO testing. Partners received assistance to evaluate their laboratory orientations and incorporate the guidelines into their designs. Subsequently, all eleven laboratories were either renovated or redesigned, and essential equipment for LMO testing was procured and installed.
154. However, in the case of Angola, despite several missions of support by RAEIN-Africa, there were delays in establishing a fully functional laboratory due to customs issues. Despite refurbishment, that took too long to be implemented, necessitating the inclusion of the Angola NEA and the CLA Director in the 2018 Annual Planning Meeting, having an impact also in the equipment (the PCR machine could not be calibrated as the replacement kit expired while held in customs).
155. All 11 laboratories received laboratory supplies, PCR screening kits, and other necessary reagents and consumables. Additionally, a guidance document on minimal infrastructure and spatial arrangements for LMO detection laboratories was produced, translated into French and Portuguese, and disseminated to relevant stakeholders. Of the 11 laboratories, 9 can conduct both qualitative and quantitative LMO testing. The tenth laboratory (DRC VetLab-Kinshasa) did not conclude the proficiency testing schedule and was placed under CRENK laboratory mentorship. Overall, 9 laboratories met the set project standards, which are in line with the standards established by the Southern African Network of LMO Detection Laboratories (SANGL) and guided by international standards.
156. The field visits clearly demonstrated that the laboratories have made significant progress due to the implementation of these guidelines and the acquisition of technical equipment. Despite some difficulties encountered in certain cases, such as the VetLab-Kinshasa, in DRC, and the Laboratorio Central Agro-Alimentar (CLA) in Angola where the laboratory faced operational challenges, the visits highlighted a concrete commitment to improve the facilities and operations of the laboratories.
157. In Angola, there was a strong commitment to renovate the laboratory, with additional construction work underway, and to make use of the tools provided by the LMO project and

other sources (EU funds). Despite initial challenges, the enthusiasm and commitment of the staff have led to tangible improvements in the laboratory's operations.

158. Interviews have confirmed that the structural interventions, which included both new construction and renovations, were received very positively by the laboratories and Countries. In Mozambique, the IIAM laboratory was constructed specifically for the project, providing a brand-new facility tailored to its needs. Meanwhile, the EMU laboratory, which had previously received funding from organizations like AICS (Italian Cooperation) and Portuguese Cooperation, underwent significant procedural improvements. Despite having a structurally adequate setup, such as a suitable laboratory floor, the EMU laboratory benefited from the guidelines by enhancing the definition of the "LMO flow of analysis," thus optimizing the use of space. Similarly, in Malawi, the LUANAR Laboratory was refurbished, resulting in improved working conditions and layout following the guidelines. Even the Chitedze Agricultural Research Station (CARS) Laboratory, which had received funding from projects like the African Development Bank, found value in the guidelines for better space utilization, particularly in clarifying workflow within the lab.
159. All planned outputs under Outcome 1 were successfully delivered and are now available, marking the full achievement of goals related to establishing minimal infrastructure for LMO detection, equipping labs, and reaching international standards in LMO testing across all designated laboratories.

Challenges

160. Despite the positive aspects noted, such as the reorganization of laboratory space and the improvements in quality management systems and technical expertise, interviews and reports highlighted several challenges. One significant issue was the extended lead time for the delivery of technical instruments, which spanned from October 2018 to November 2019. This prolonged period raised concerns about project timelines and impacted the implementation schedule. The procurement process, although initiated timely, faced obstacles exacerbated by the COVID-19 pandemic in 2020. Restrictions due to the pandemic hindered the periodic visits by technicians from the instrument supplier to the target countries. These visits were crucial for ensuring and assisting in the initial calibration of the instruments. The inability to carry out these visits forced a shift to online training, which was not as effective in addressing technical issues or ensuring proper calibration.
161. As a result, in some cases, such as at the CARI Lab in Malawi, certain machines remained inactive due to either a lack of calibration or other technical problems that were not clearly identified. This downtime had a direct impact on the laboratory's operational capacity and contributed to delays in project activities. Overall, while the project achieved significant milestones, the prolonged lead time for instrument delivery and the challenges posed by the COVID-19 pandemic affected the smooth implementation of the project and highlighted the need for more robust contingency plans in similar future endeavors.
162. Another point to consider is the sustainability of lab equipment. Maintaining a consistent supply of reagents and ensuring the continuity of laboratory operations remains a significant challenge due to high costs, bureaucratic hurdles, and limited funding in some countries. Therefore, the high cost of freight for transporting reagents poses a major challenge for the six countries aiming to achieve autonomy in their implementation efforts, affecting timelines, budgets, and overall sustainability of the LMO project's results.

Table 13. Availability of Output 2

Outputs related to Outcome 2 (Component B)	Indicators	Baseline	Target at the end of Project	Level of Achievement
Output 2.1: Laboratory personnel equipped with technical expertise in Quality Management Systems and able to carry out LMO detection as per internationally acceptable standards	Proportion of laboratories adopting good quality management systems	30% of laboratories with good quality management systems	The MCP-ICLT / LMO project surpassed its goal by equipping all 11 labs across 6 countries with advanced LMO detection capabilities using quantitative real-time PCR. Training and implementation of quality management systems were conducted in these labs, with nine creating quality manuals.	Fully Achieved
Output 2.2: Adequate technical backstopping in support of implementation processes	Proportion of laboratories satisfied with the technical backstopping	No technical backstopping	The Project Management Unit (PMU) and Technical Advisors bolstered national team efforts by different ways and methods.	Fully Achieved
Output 2.3: Guidance document on best practices in LMO detection developed	Proportion of the laboratories using the guidance document	General guidance document on the CBD guidance document	Published and adapted the guideline - Technical Series 05: "Training Manual on the Detection and Identification of Living Modified Organisms in the Context of the Cartagena Protocol on Biosafety" and a compendium of experiences and lessons gained from implementation of the project ¹⁶ .	Fully Achieved
Output 2.4: Partnerships across the regulatory chain - on LMO detection and decision making developed ¹⁷	No in the Original Logical Framework	No in the Original Logical Framework	Partnerships at the national and international level are fostered and cultivated	Fully Achieved

163. The LMO project aimed to enhance the technical expertise of laboratories in Quality Management Systems (QMS) and Living Modified Organism (LMO) testing. This initiative targeted 11 laboratories, focusing on training laboratory personnel and institutional managers. Using the Training of Trainers (ToT) approach, 24 experts, half of whom were female, were trained as trainers on QMS. Additionally, 141 stakeholders, with 36.2% female and 63.8% male, were trained on QMS at national levels.

164. As reported in the Final Project Output Summary, nine laboratories across five countries demonstrated competence by developing audited institutional quality management systems.

¹⁶ https://bch.cbd.int/protocol/cpb_detection/toolsandguidance/topic1.shtml

¹⁷ Shared goal on biosafety decision making.

Furthermore, personnel from these laboratories were capacitated in LMO detection methods. These nine labs showed competence in both qualitative and quantitative LMO testing according to agreed-on standards, using inter-laboratory comparison. During interviews and field visits conducted as part of the evaluation, it was evident that the LMO project has had a substantial impact on the participating laboratories. Interviews revealed a significant improvement in the management of quality systems as a direct result of the training provided by the MCP-ICLT/ LMO project. The training had led to a better understanding of quality management principles and practices among staff, resulting in more efficient and effective laboratory operations. This improved management of quality systems was particularly notable in the development and implementation of quality management systems.

165. Field visits further confirmed the competence of the laboratories in LMO testing. Observations during these visits showed that personnel were adept at conducting both qualitative and quantitative LMO testing, adhering to agreed-upon standards and utilizing inter-laboratory comparison methods. The practical application of the skills and knowledge acquired through the project was evident, with laboratories demonstrating proficiency in various aspects of LMO testing.
166. Overall, the interviews and field visits provided concrete evidence of the positive impact of the LMO Project. Not only have laboratories enhanced their technical expertise in LMO testing, but they have also significantly improved their management of quality systems, leading to more efficient and reliable operations. The Project Management Unit (PMU) and Technical Advisors (TAs) provided robust technical support throughout project implementation. Their assistance included team formation, spatial design optimization, and streamlining procurement processes. A strong Monitoring and Evaluation (M&E) platform was developed, allowing for data-driven decisions and course corrections. Online support was provided during the COVID-19 pandemic, with customized training materials for online interactions. Therefore, the project had a significant impact on capacity building and skills enhancement. Soft skills such as leadership, teamwork, problem-solving, and communication were developed among participants across all six countries. Strong, coherent teams were established in each country to coordinate LMO testing and biosafety issues. Improved communication methods facilitated knowledge sharing and better decision-making. The project created a pool of LMO testing specialists in each participating country, capable of handling complex biosafety issues.
167. Biosafety regulators were trained in bulk sampling, labelling, and LMO handling, tailored to national contexts. Modern laboratories were launched in Lesotho, Madagascar, Malawi, and Mozambique, providing reliable LMO testing and analysis. Increased partnerships and stakeholder involvement promoted biosafety collaboration, with diverse stakeholders participating in decision-making. The VetLab-Kinshasa DRC encountered challenges with non-conforming samples, requiring assistance from the CRENK lab. Despite efforts, their second attempt did not pass, necessitating further reflection. The CLA-Angola lab's non-functionality led to Angola's partners' non-participation.
168. In conclusion, the MCP-ICLT/ LMO project successfully achieved all planned outputs under Outcome 2, exceeding initial expectations and ensuring a high standard of training and technical support in the laboratories involved, with all necessary guidance documents developed and partnerships effectively established.

Challenges

169. One of the key challenges identified in the evaluation is the retention of trained staff within the institutions. This challenge is particularly evident in Angola, where trained personnel have struggled to replicate the trainings and have been absent from the CLA Laboratory for several months. Despite agreements to train current technical staff before seeking other opportunities, trained individuals have been unavailable.

170. Similarly, in Malawi, both the CARI and LUANAR laboratories face staffing issues. Interviews revealed that there are few personnel working in these laboratories. At LUANAR, the trained technician lacks staff to train and conducts sessions with interns or students who have short tenures at the institution. CARI also faces a similar situation, with only one individual trained from start to finish. Although additional technicians have undergone training, there is a high risk of losing acquired knowledge due to limited staff retention.
171. Mozambique, however, stands out as an exception (possible good practice and case study). Trained staff in the two laboratories are continuously engaged in training and communication. They consult and exchange information during trainings for new staff, maintain coordinated schedules, and sustain high levels of interest and knowledge. This proactive approach ensures knowledge retention and skill enhancement within the laboratories.

Table 14. Availability of Output 3

Outputs related to Outcome 3 (Component C)	Indicators	Baseline	Target at the end of Project	Level of Achievement
Output 3.1: Platforms for information exchange established and functional	Number of exchange visits conducted;/less ons learning reports/policy briefs/workshop s/newsletters/ website hit/ Annual project reviews/	Limited information flow through the various platforms	Opportunities for the long-term sharing of LMO detection expertise, experiences, and resources were created	Fully Achieved
Output 3.2: Establish linkages and partnerships with other regional, international LMO detection laboratories	Number of documents and publications produced by type	Zero documents published	Through the SANG (Southern African Network of GM Detection Laboratories) initiative, the Lead Executing Agency formed partnerships with two Technical Advisors (TAs).	Fully Achieved
Output 3.3: Project materials and guidance manuals well documented and published	Number of linkages established and sustained by the project	None to limited linkages exist	The Lead Executing Agency (LEA) produced a range of multilingual resources, including project pamphlets, guidelines on infrastructure and competencies for LMO detection, and documentation from training workshops and a compilation of impact stories, lessons learned, and draft materials like policy briefs aimed at enhancing biosafety knowledge and compliance.	Fully Achieved
Output 3.4: National registers for LMO detection developed, accessible to decision makers and referenced in decision making processes	None in the Original Logical Framework	None in the Original Logical Framework	LMO registers for regulatory purposes are to be created by the biosafety regulatory authorities. Malawi and Mozambique indicated the existence of paper-based record keeping systems.	Fully Achieved

172. There were five annual planning and review meetings during project implementation, providing a platform for national task forces to review project status and plan for the subsequent year. These meetings facilitated inter-institutional interactions and information sharing among LMO testing stakeholders across six countries, fostering a networking platform. One notable outcome of the project is the integration of the 11 LMO laboratories into the Southern African Network of GM Detection Laboratories (SANGL). This integration, facilitated by Technical Advisors, enhances collaboration and cooperation among the laboratories. Additionally, the project has fostered partnerships with other laboratories in the Southern African Development Community (SADC) region, strengthening the network and promoting joint initiatives for GM detection and research. Continued knowledge and experience sharing are integral to the project's objectives, with the SANGL network serving as a platform for this purpose. Through SANGL, expertise is shared across the SADC region, contributing to capacity-building efforts within the network. Furthermore, the project has maintained and strengthened linkages with key institutions, including the GM detection facility at the University of the Free State, which serves as a vital resource for technical regional training initiatives. Collaboration with the EU-Joint Research Centre (EU-JRC) has been facilitated through the project, strengthening the network's international connections and access to cutting-edge research and technology in the field of GM detection.
173. The commitment to knowledge dissemination, capacity building, and effective communication with biosafety stakeholders is evident through various outputs. These include multilingual project pamphlets and brochures, guidelines on minimum levels of competence and infrastructure for LMO detection, and proceedings of training workshops covering soft skills for project management, qualitative and quantitative LMO testing, and sampling, labelling, and identification of LMOs.
174. Other knowledge products produced by the project include impact stories and policy briefs, a Quality Management System (QMS) guideline, a Sampling & LMO Detection guiding document, publications from research on locally available products in each partner country, a compilation of lessons learned during project implementation, and outreach materials for biosafety stakeholders.
175. Furthermore, the project promoted the creation of LMO registers at laboratory level to track samples handled by the laboratory, not for regulatory purposes. While Malawi and Mozambique biosafety regulators indicated the existence of paper-based systems for regulatory purposes, the UFS laboratory shared experiences with lab-based LMO registers with the partners.
176. All planned outputs under Outcome 3 were successfully delivered and are fully available, establishing a strong foundation for ongoing knowledge sharing and collaboration in LMO detection across the target countries.

Challenges

177. In addition to the positive aspects identified through field evaluation and literature review, the evaluation team also highlighted the challenges posed by COVID-19 in effectively reaching all project target countries. The pandemic significantly disrupted the project's activities, particularly during the last years, including the extension period. Restrictions on travel and gatherings made it difficult for stakeholders to meet in person, hindering communication and collaboration. Angola faced difficulties due to its structural issues related to fragile internal management. Unlike Mozambique, which was more accessible linguistically and benefited from implemented advice and best practices, Angola struggled to implement local changes. Despite efforts to establish a solid relationship, there was a lack of tangible progress. The inability to have face-to-face interactions greatly impacted the effectiveness of RAEIN-Africa's support to

Angola and the DRC. Inter-country visits and workshop attendance, which were not possible due to travel restrictions, would have significantly benefited the consolidation of achieved results and future outcomes. These visits would have allowed for in-depth discussions, sharing of experiences, and direct support tailored to the specific needs of each country. Furthermore, the absence of physical meetings hindered the transfer of knowledge and expertise from more advanced countries, such as Mozambique, to countries facing greater challenges, like Angola. The workshops and training sessions that were not held in person could have provided valuable opportunities for hands-on learning and interactive discussions, fostering a deeper understanding of project objectives and strategies. Overall, the limitations imposed by COVID-19, compounded by structural issues in certain countries, hindered the harmonious implementation of the project across all target countries. Direct interactions and visits would have facilitated better communication, knowledge exchange, and implementation of project activities, ultimately ensuring a more sustainable impact beyond the project's conclusion.

178. COVID-19 also impeded the project's efforts to have a substantial impact at the national level. This disruption diminished the project's ability to effectively advocate for legislative changes regarding LMOs and biosafety within each country. The pandemic hindered crucial activities such as meetings with national institutions and policymakers, where advocacy efforts could have been made to raise awareness and drive necessary legislative reforms. These interactions are essential for fostering understanding and support for biosafety regulations and guidelines related to LMOs. Additionally, the limitations imposed by COVID-19 prevented the project from conducting outreach events and workshops aimed at engaging stakeholders at the national level. These events would have provided valuable opportunities to educate decision-makers and the public about the importance of biosafety measures and the regulation of LMOs. Overall, the pandemic's impact on the project's ability to engage with national institutions and stakeholders has hampered its effectiveness in advocating for necessary legislative changes regarding LMOs and biosafety.

Table 15. Availability of Output 4

Outputs related to Outcome 4 (Component D)	Indicators	Baseline	Target at the end of Project	Level of Achievement
Output 4.1: Policy makers aware of the importance of LMO testing to support decision making	Proportion of laboratories given mandate for LMO testing by government or with MOUs with Government	No Mandate for LMO Testing	The LMO project increased awareness surrounding the importance of science-informed decision-making on biosafety issues	Fully Achieved
Output 4.2: Stakeholders participating in the regulatory processes equipped with skills and techniques for sampling, handling documentation of LMOs	Number or Value chain actors trained	Limited skills and techniques for other value chain actors	The LMO project equipped national core teams with the skills required for the safe management of LMOs and with capacity to train other stakeholders and engaged them at all levels of biosafety decision-making.	Fully Achieved

179. The LMO project (MCP-ICLT) has achieved a significant milestone in raising awareness and promoting science-informed decision-making on biosafety issues. One notable accomplishment is the official launch of state-of-the-art laboratories in Lesotho, Madagascar, Malawi, and Mozambique. For example, NUL in Lesotho is now fully functional, supporting teaching and eventually other research activities beyond LMO detection. These launches served as platforms for creating awareness among policymakers and stakeholders. Equipped

with cutting-edge technology and meeting internationally acceptable biosafety standards, these laboratories now play crucial roles as hubs for research, testing, and monitoring of LMOs. These achievements are considered an important contribution to the implementation of science-informed biosafety practices in these countries.

180. Moreover, through educational campaigns, workshops, and public outreach efforts, the LMO project have empowered stakeholders, private sector and decision-makers to make informed choices regarding LMOs and biosafety practices. These initiatives have helped bridge the gap between scientific knowledge and public understanding, fostering a culture of informed decision-making.
181. The LMO project has certainly helped to strengthen the steps towards legislation on biosafety measures within the regulatory framework. This involved enhancing biosafety capacity through training on bulk sampling techniques, proper labelling procedures, and safe handling practices of LMOs across Angola, the Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, and Mozambique. At the same time, the LMO project contributed to expand the partnerships with local and international stakeholders, including government agencies, research institutions, and non-governmental organizations. This broad network enhances collective efforts towards biosafety and provides a platform for knowledge exchange and collaboration.
182. The transparency and clarity in the LMO certification process, disseminated and known by various national actors, and the fact that states can make recognized and clear decisions on this certification, produced by the project's laboratories, is certainly one of the project's greatest successes.
183. In conclusion, all planned outputs under Outcome 4 were delivered and made available, fully realising the objectives of sensitising policy makers on the importance of LMO testing and equipping stakeholders with the necessary skills for the regulatory management of LMOs.

Challenges

184. At the end of LMO project, there is no legislative homogeneity in target countries regarding LMO and biosafety.
185. Angola is yet to develop and approve a National Biosafety Framework and structure such as Drafting National Legislation, Creation of a National Website and GMO Laboratories up and running. Linked to the result in outcome 3, certainly also from a legislative point of view, a greater exchange of experiences between Angola and Mozambique, but also other countries, would have benefited the project.
186. DRC must operationalize the NBF and its national structure.
187. Madagascar has no specific legislation: it signed the Cartagena Protocol (CP) in September 2000 and ratified it in 2003; the National Biosafety Plan (NBP) is part of the implementation of the CP. Article 48 of the Health Code of Law No. 2011-002 of 07/15/2011 states that "food products of plant origin grown with GMOs are declared unsafe for human consumption because of the genome modification risks they pose to consumers, and their marketing as food is prohibited throughout the country."
188. Lesotho ratified the Cartagena Protocol on Biosafety (CPB) in 2003 and developed its National Biosafety Framework (NBF) in 2005. Regulatory and institutional capacity to implement the NBF was limited, hindering compliance with the Cartagena Protocol. Key issues included lack of awareness, poor institutional coordination, and insufficient human and infrastructural resources. This is crucial as Lesotho shares borders with South Africa, a country with GMO crops, especially maize, on which Lesotho depends for food security.

189. Mozambique and Malawi both have appropriate NBFs and legislation in place but lack funds to always support it.

Table 16. Availability of Outputs 5 and 6¹⁸.

Outputs related to Outcome 5 (Component E)	Indicators	Baseline	Target at the end of Project	Level of Achievement
Output 5.1: Project progress monitored	Number of Monthly, Half yearly and yearly progress reports	N/A	The project exemplified a well-managed, monitored, evaluated, and reported project.	Fully Achieved
Output 5.2: Project evaluated to ascertain achievement of objectives	Number of project evaluation reports	N/A		
Outputs related to Outcome 6 (Component F)	Indicators	Baseline	Target at the end of Project	Level of Achievement
Output 6.1: Systems and structures for project coordination and management established	Number of coordination and review meetings conducted	No meetings	The project was managed effectively through the following strategies and practices	Fully Achieved
Output 6.2: Good project management systems developed and implemented	Burn Rate	Zero for baseline		

190. The M&E section is included because the outputs pertain to project management and do not directly contribute to achieving the project's development objective, hence they are not included in the Theory of Change (ToC).

191. Project management was carried out effectively, considering that the project headquarters, RAEIN-Africa, located in Pretoria, South Africa. Despite the geographic distance, the assistance provided was attentive, constant and proactive, demonstrating a strong involvement and focus by RAEIN-Africa in reaching out and helping the project countries achieve the defined objectives.

192. During the interviews conducted, RAEIN-Africa's important contribution became clear. The RAEIN-Africa's active and proactive presence was recognized and appreciated by all the countries participating in the project. At the same time, the support of the UNEP Task Manager, recognized by RAEIN-Africa and the target countries, was important for the project implementation. Without this support, many of the goals set would not have been achieved. This was particularly evident in countries where internal management could be more complex, such as Angola.

193. Project management was facilitated using the ANUBIS platform, where all project documents were uploaded and shared among representatives of the various countries involved. Initially, some participants experienced difficulties in accessing and using ANUBIS, but thanks to the assistance provided by RAEIN-Africa, these barriers were overcome.

¹⁸ It is important to emphasise that although Outcomes 5 and 6 are not included in the project's Theory of Change (ToC), they are essential elements in ensuring the success of the project and the achievement of its intended outputs. These Outcomes played a crucial role in ensuring effective management and monitoring, which were fundamental to achieving the overall project objectives.

194. However, RAEIN-Africa encountered difficulties in receiving regularly requested reports from the countries. These reports had to include financial and narrative details on expenditures incurred and activities carried out. Despite the organization's constant efforts to help countries compile and send the reports, delays occurred that affected the project monitoring process.
195. Activity monitoring was carried out following a work plan shared by the local project coordinators, who were well informed about the deadlines and details of the monitoring plan. In addition, regular meetings were held to monitor the progress of activities in the various countries involved.
196. Prior to the outbreak of the COVID-19 pandemic, RAEIN-Africa organized local country visits, particularly to those countries where there were major difficulties in project implementation, such as Angola and the Democratic Republic of Congo (DRC). During these visits, RAEIN-Africa sought to resolve management and implementation issues through meetings with ministries and other local authorities.
197. Regarding monitoring and management methodology, in addition to video conferences and online conferences, RAEIN-Africa organized direct country visits and training sessions in South Africa. During these sessions, a review of the activities and work plan took place with the local coordinators to ensure compliance with the planned activities.
198. Regarding the workshops, in addition to the support of the Technical Advisors from Southern Africa (specifically from South Africa and Zimbabwe), RAEIN-Africa provided ongoing assistance to the staff trained in the workshops, especially during project implementation. Assistance was rendered through help with equipment management, training in laboratory techniques, and support in interpreting results.
199. All planned outputs under Outcomes 5 and 6 were successfully delivered, as evidenced by the comprehensive monitoring and evaluation reports, and the effective establishment and utilization of project management systems. This adherence to structured management and evaluation processes ensured that the project objectives were met, underscoring its overall success.

Challenges

200. Despite the constant effort and assistance provided by RAEIN-Africa, the project encountered several challenges. A major one has been the difficulty in helping Angola because of the country's complex internal dynamics. Internal divergence between ministries and complex bureaucracy hindered communication and management of activities.
201. Another challenge was the lack of initial training for staff in the ministries involved in the project. This caused difficulties in interpreting project timelines and procedures, leading to delays and difficulties in communication.
202. In addition, the project encountered difficulties in understanding the timelines and bureaucratic procedures in countries where official approval for project documents needed to be obtained. This was especially evident in Angola and the DRC, where internal bureaucracy slowed down the process of getting ministerial documents approved.
203. In some cases, language was also a barrier, especially since not in all countries, beyond the National Project Coordinator, the people involved did not speak English and therefore depended on translations, which were not always correct. Particularly for Francophone countries and Angola. This is something that can be improved in the future.
204. Therefore, despite the challenges encountered, the engagement and assistance provided by RAEIN-Africa contributed significantly to the success of the project. However, there were important learnings about management and communication procedures that could be applied to improve future projects.

205. All outputs were successfully delivered and are available, with each output adhering to the minimum standards of quality as expected. The rigorous approach in monitoring, evaluation, and project management ensured that the deliverables not only met but often exceeded the project specifications, resulting in a highly satisfactory rating for the sub-criteria on the availability and quality of output.

Rating for availability of project outputs: **Highly Satisfactory (HS)**

5.4.2 Achievement of project outcomes

206. The evaluation team has examined how the availability of the outputs has led to institutional changes and systemic effects. This chapter provides a qualitative analysis and interpretation of the outcomes achieved, based on the Reconstructed Theory of Change (ToC) at evaluation from outputs to outcomes, as illustrated in Figure 3.

Table 17. Achievement of Outcome 1

Outcome 1	Indicators	Baseline	Target at the end of Project	Level of Achievement
Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection	Proportion of designated laboratories proficient in LMO detection	30% of laboratories capable of conducting Level 4 testing; 70% of laboratories not capable of LMO testing.	End of project Target 100% of laboratories proficient	Fully Achieved

207. The Outcome 1. Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection has indeed been achieved, albeit with some difficulty compared to the initial expectations of the project. There are in place the necessary laboratories, procedures, equipment and tools, although not all laboratories are currently 100% functional. For example, the laboratory in Angola and the VET Lab in Kinshasa are still facing big challenges and have obvious deficiencies. However, overall, the project has been successful in distributing materials and equipment to all laboratories, training staff, and implementing analytical processes and procedures. This has provided benchmarks in the countries involved and radically changed the approach to LMO in these settings.
208. A significant example of the effectiveness of the LMO project is Mozambique, where both the laboratories and the government have shown considerable commitment to laboratory optimization. In addition to adhering to established guidelines, the government is further investing in upgrading these laboratories. During interviews, it emerged that there are ongoing projects to upgrade equipment, perform maintenance, and ensure reagent supply.

Table 188. Achievement of Outcome 2

Outcome 2	Indicators	Baseline	Target at the end of Project	Status
Minimum Human and Institutional level of competency in LMO Testing Attained	Proportion of designated laboratories meeting minimum levels of competence in LMO detection	30% of laboratories meeting minimum levels of competence	End of project Target – 100% of laboratories competent in LMO Testing	Fully Achieved

209. The Outcome 2. Minimum human and institutional level of competency in LMO testing attained has been completely achieved. The training of staff and the significant enhancement of technical skills for the detection of LMOs is one of the main successes of this project. The trained staff reported that their skills and knowledge have improved significantly, even though many of them already have a university-level academic education, and some, as in the case of Mozambique, even have PhDs. However, the training received from the Technical Advisors and the technical assistance provided along the project were key factors. This created an unprecedented human and institutional capacity in these countries that had not been previously developed. For example, during the COVID-19 pandemic, the LUANAR Laboratory in Malawi became crucial for diagnosing and monitoring COVID-19 cases. It was the only accredited lab in the country during the initial months, thanks to the MCP-ICLT/ LMO project's support. This enabled timely and reliable responses to the crisis. The project provided equipment and training, ensuring the lab's capacity for PCR analyses. Consequently, Malawi could effectively identify and track COVID-19 cases. Beyond the pandemic, the lab can now conduct various PCR analyses, enhancing Malawi's diagnostic capabilities.
210. Consequently, the Evaluators assess that this outcome has been fully achieved. Currently, in all the countries involved, there is the capacity to conduct LMO testing and issue certifications that are truthful and reliable. These certifications are useful for institutions, which can then issue approvals in both the food and agricultural sectors with greater confidence and accuracy.

Table 199. Achievement of Outcome 3

Outcome 3	Indicators	Baseline	Target at the end of Project	Status
Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created	Proportion of designated laboratories participating on established experience sharing platforms	No platforms in the Baseline for designated laboratories; Currently the targeted members not participating in SANGL platform	End of project Target – 100% of designated laboratories using the platform for information sharing	Fully Achieved

211. The Outcome 3. Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created was strongly influenced by the Covid-19 pandemic. The evaluation shows that this outcome was fully achieved despite the limitations imposed by the pandemic. It is evident that sharing experiences have been improved, relationships between institutions have been created, publicized and disseminated, and the capacities of the institutions involved in the project have been strengthened. Currently, these institutions have a clear understanding of the entire process required for GMO certification, both in the public and private sectors.
212. However, the results could have been broader and more profound if there had been no pandemic. National in-person conferences would have allowed more countries to be involved and more in-depth experiences to be shared. In addition, the opportunity to share experiences between countries with a common language, such as Angola and Mozambique, would have fostered greater openness. In this context, the Outcome would have reached full fruition, highlighting further progress had there not been the impact of COVID-19. Despite the barriers, significant relationships, such as that between the technical advisors and the countries involved, have nevertheless been established, while the aspect that has not been fully developed is the concretization of stronger and more lasting relationships between the countries themselves.

Table 20. Achievement of Outcome 4

Outcome 4	Indicators	Baseline	Target at the end of Project	Status
Strengthening LMO detection and biosafety decision-making processes by decision makers through technical support.	Number of meetings and workshops held with regulatory authorities per year	Limited meetings held between detection laboratories and regulatory authorities	100% of laboratories conducting meetings and workshops with regulatory authorities	Fully Achieved

213. This Outcome 4. Strengthening LMO detection and biosafety decision-making processes by decision makers through technical support is clearly achieved based on evidence collected from the evaluation. In all target countries, regardless of whether laboratories are operating at 100% capacity or not, there is at least one laboratory serving as a reference point for decision-makers, facilitating the process of identification and certification of Living Modified Organisms (LMOs). Therefore, in the countries involved in the MCP-ICLT/ LMO project, institutions now have laboratories that serve as a solid, transparent, and reliable reference for those making biosafety decisions regarding LMOs. This marks a significant step forward from the past, as before the project, this capacity and expertise did not exist in the country. Due to the LMO project, public and private institutions have gained greater clarity and reliability in decision-making.
214. All four outcomes of the project were fully achieved, confirming the effectiveness of the project's strategies and interventions. This accomplishment aligns with the Theory of Change, underscoring the project's ability to reach its intermediate states effectively. The LMO project's outcomes were significantly supported by key assumptions and drivers such as gender inclusion, which played a crucial role in transitioning from outputs to outcomes, thereby enhancing the project's overall impact and sustainability. This comprehensive success warrants an overall assessment rating of "Highly Satisfactory".

Rating for achievement of project outcomes: **Highly Satisfactory (HS)**

5.4.3 Likelihood of impact

215. The MCP-ICLT/ LMO project has contributed from outcomes to the impact in terms of "adequate conservation and sustainable use of biodiversity, with a focus on human health and the environment". Through science-based decisions, the project has significantly enhanced both human and animal health while protecting the environment", as defined in the Reconstructed ToC at evaluation via the ToCs intermediate state 1 and 2.
216. The LMO project has promoted the use of advanced techniques and methodologies for the detection and monitoring of LMOs. By providing training and capacity building to laboratory personnel, the project has enabled more accurate and reliable testing of genetically modified organisms, ensuring that the biodiversity of local ecosystems is preserved. Mozambique and Malawi, having established a clear LMO testing protocol, have provided accurate test results to their agricultural trade licensing agencies. Specifically, the results have been crucial in assessing the legal compliance of imported seed products. In some instances, soybean seeds did not meet the required legal standards for marketing, leading to the denial of commercial permits by the national institutions responsible for regulatory oversight. This example underscores the practical application of LMO testing in influencing national policy decisions on seed trade.

217. Moreover, the project has facilitated the implementation of biosafety regulations and guidelines based on scientific evidence. This has led to informed decision-making processes that prioritize human and animal health, as well as environmental protection. By adhering to these regulations, the project has reduced the risks associated with the release of genetically modified organisms into the environment.
218. The primary change in the project was the establishment of a robust system designed to support biosafety and the detection of LMOs. This involved not only enhancing technical capabilities but also developing human, professional, and institutional capacities.
219. The project aimed to build a solid foundation that would enable countries to effectively manage biosafety risks associated with LMOs. This included providing training and resources to develop the technical skills needed for LMO detection methods. Moreover, the project focused on nurturing a cadre of skilled professionals who could lead LMO detection efforts and contribute to the overall advancement of biosafety practices.
220. Beyond individual capacities, the project also aimed to strengthen institutional frameworks to ensure sustainable biosafety practices. This involved the development and implementation of policies, procedures, and quality management systems tailored to the specific needs of each country. By doing so, the project laid the groundwork for countries to improve their biosafety standards and become more effective regional partners.
221. Overall, the project's main goal was to create a supportive environment where countries could enhance their biosafety capabilities and collaborate effectively with regional partners. This not only facilitated the detection and management of LMOs but also contributed to broader efforts to safeguard human health and the environment.
222. The LMO project operationally ended in December 2022, so it is still too early to discuss its actual impact towards "adequate conservation and sustainable use of biodiversity, taking into account human health and environment". However, the evaluation believes the LMO project has significant potential to have an impact across various sectors. For example, in Malawi, analyses are currently being conducted on soybeans, common beans and pigeon peas, to determine if these imported products can be genetically modified. These analyses will likely be useful for many other agricultural and food products, indicating the potential impact beyond the Theory of Change, although it may take a few more years to see tangible results.
223. Additionally, in some countries, the finalization of legislative processes on biosafety and LMO detection could lead to impacts beyond the scope of the project. Agriculture and food are the sectors where the project is expected to have the most significant impact. In this region, where many countries depend on imports, particularly from India, there is a need for greater security in the analysis and certification of these products.
224. Furthermore, other countries like Angola are currently investing in enhancing their laboratories as they intend to export their agricultural products to Europe. This improvement in export capacity will undoubtedly enhance the project's impact.

Rating for Effectiveness: **Likely (L)**

Rating for Effectiveness: **Highly Satisfactory (S)**

5.5 Financial management

225. The project effectively managed its financial and administrative aspects, with significant assistance from RAEIN-Africa to countries in addressing administrative and financial challenges. RAEIN-Africa's support was instrumental in overcoming difficulties or delays

encountered by countries in reporting. UNEP also acknowledged that this project has been managed very efficiently and effectively.

226. Financial reporting was conducted regularly, ensuring transparency and accountability in financial management. RAEIN-Africa played a crucial role in guiding and supporting countries to prepare comprehensive reports that accurately documented the project's financial activities.
227. Regarding procurement, appropriate administrative procedures were followed, and RAEIN-Africa provided substantial assistance to countries in navigating procurement processes. This ensured the acquisition of essential laboratory equipment without significant issues. However, some delays in tenders were experienced due to external factors beyond the project's control.
228. Budget management was another area of success for the LMO Project. There have been revisions to adapt the budget and revised activities to the context of COVID-19, and in the case of the DRC, expenses related to the customs clearance of technical instruments.
229. The evaluation considered the sub-criteria for financial management in terms of adherence to UNEP/GEF's policies and procedures, completeness of project financial information and communication between finance and project management staff and presented in Table 21.

Table 21. Financial management

GEF PROJECT			
Financial management components:		Rating	Evidence/ Comments
1. Adherence to UNEP's/GEF's policies and procedures		HS	The Adherence to UNEP's/GEF's policies and procedures was Highly Satisfactory
Any evidence that indicates shortcomings in the project's adherence to UNEP or donor policies, procedures or rules		Yes	Throughout the MCP-ICLT/ LMO Project, all financial operations were conducted in accordance with UNEP's established financial policies and procedures. Tender procedures comply with UNEP requirements. The final Auditor's report from December 2023 for the biennium 2022-2023 declared transparent, orderly, and clear financial reporting. The project consistently adhered to UNEP's financial guidelines, which helped maintain transparency and accountability in financial matters. Financial transactions followed internationally recognized guidelines and standards.
Was first disbursement carried out within 9 months of UNEP's project approval date.		Yes	The first payment made in July 2017
2. Completeness of project financial information		HS	The Completeness of Project Financial Information was Highly Satisfactory
Provision of key documents to the evaluator (based on the responses to A-H below)			
A.	Co-financing and Project Cost's tables at design (by budget lines)	Yes	Financial information was complete and accurate.
B.	Revisions to the budget	No	Just internally, due COVID-19 pandemic consequences.
C.	All relevant project legal agreements (e.g. SSFA, PCA, ICA)	Yes	MoU signed between Countries.

GEF PROJECT			
Financial management components:		Rating	Evidence/ Comments
D.	Proof of fund transfers	Yes	Comprehensive records of all financial transactions were maintained.
E.	Proof of co-financing (cash and in-kind)	Yes	Comprehensive records of all financial transactions were maintained.
F.	A summary report on the project's expenditures during the life of the project (by budget lines, project components and/or annual level)	Yes	Summary reports on project's expenditures by budget lines regularly provided through Quarterly and Annual financial reports
G.	Copies of any completed audits and management responses (<i>where applicable</i>)	Yes	The final Auditor's report from December 2023 for the biennium 2022-2023 declared transparent, orderly, and clear financial reporting.
H.	Any other financial information that was required for this project (list):	No	
3. Communication between finance and project management staff		HS	The communication between finance and project management staff was Highly Satisfactory
Project Manager and/or Task Manager's level of awareness of the project's financial status.		HS	Regular meetings and updates ensured alignment between the financial team and project management regarding budgetary matters and project progress, with support from RAEIN-Africa and UNEP.
Fund Management Officer's knowledge of project progress/status when disbursements are done.		HS	Financial reports and updates were provided to project management promptly, ensuring transparency and accountability, with guidance from RAEIN-Africa. Initial training sessions were conducted to help team members understand ANUBIS and project management concepts, overcoming language barriers, with support from RAEIN-Africa.
Level of addressing and resolving financial management issues among Fund Management Officer and Project Manager/Task Manager.		HS	Efforts were made to overcome language barriers, ensuring effective communication among team members from different linguistic backgrounds, with assistance from RAEIN-Africa.
Contact/communication between by Fund Management Officer, Project Manager/Task Manager during the preparation of financial and progress reports.		HS	Clear communication channels facilitated the exchange of information, enabling swift resolution of financial issues, with assistance from RAEIN-Africa and UNEP
Project Manager, Task Manager and Fund Management Officer responsiveness to financial requests during the evaluation process		HS	Feedback and input from both financial and project management teams were considered in decision-making processes, enhancing overall project management, with guidance from RAEIN-Africa and UNEP
Overall rating		HS	

230. The constraints in financial management were related mainly to:

- (i) The COVID-19 pandemic required a budget review to adjust activities to the new context.
- (ii) Delays between the start of procurement processes and the purchase of equipment were due to the selection of the best strategies and waiting for feedback from countries regarding customs clearance.
- (iii) Unforeseen and excessive expenses for customs clearance of equipment in the DRC.
- (iv) The financial audit found that the only issue was that RAEIN-Africa did not open a dedicated project account, but this did not cause any problems for UNEP.

231. The budget received from the GEF was used almost entirely, with a total expenditure of USD3,800,000.00 out of USD3,860,000.00, including the no-cost extension due to COVID-19. This budget will be finalized with the expenses related to this evaluation, which have been estimated at a total cost of approximately USD60,000 (* in Figure 4 below).

Figure 4. Funds of the LMO project from terminal report

Total Budget (US\$): (specify contributions by donor/s)					
Country/ Organization	Regional Budget	Country National Budgets	Total UNEP	Co-finance	Total
RAEIN-Africa			-	306,500.00	306,500.00
UFS			-	165,000.00	165,000.00
Angola	284,000.00	156,000.00	440,000.00	2,000,000.00	2,440,000.00
DRC	284,000.00	400,000.00	684,000.00	1,007,187.00	1,691,187.00
Lesotho	284,000.00	400,000.00	684,000.00	929,565.00	1,613,565.00
Madagascar	284,000.00	400,000.00	684,000.00	1,076,000.00	1,760,000.00
Malawi	284,000.00	400,000.00	684,000.00	540,500.00	1,224,500.00
Mozambique	284,000.00	400,000.00	684,000.00	522,000.00	1,206,000.00
Totals	1,704,000.00	2,156,000.00	3,860,000.00*	6,546,752.00	10,406,752.00

Rating for Financial management: **High Satisfactory (HS)**

5.6 Efficiency

232. The MCP-ICLT/ LMO project demonstrated a high level of efficiency across various aspects, including cost-effectiveness and timeliness (also considering COVID-19). In terms of cost-effectiveness, the LMO project effectively managed its budget, utilizing resources judiciously to achieve desired outcomes. Despite facing unforeseen circumstances such as delays and five formal revisions of the project document and the need for no-cost extensions due to the COVID-19 pandemic which led to a change in the original completion date from December 2021 to December 2022, the project made optimal use of available funds, adapting them from in-person activities to remote activates for example. Measures were taken to mitigate the impact of delays (ex. improving online meeting, calls by WhatsApp, zoom or skype etc.), ensuring that resources were allocated efficiently to maintain progress.
233. One key aspect of cost-effectiveness was the engagement of the Technical Advisors (with a very high profile and deep understanding of national contexts), who provided in-person support before the COVID-19 pandemic and remote support during and after the pandemic. This approach allowed for efficient implementation, as the Technical Advisors were able to provide expert guidance and assistance mitigating in part the impossibility to travel or to have in-person meetings. Additionally, the LMO project (MCP-ICLT) implemented strategies of Training of Trainers (ToT) to maximize cost-effectiveness and reduce expenses. By empowering local trainers (Directors and Technicians of labs in the Countries), the LMOProject reduced costs and promoted sustainability. Indeed, this approach also helped to build local capacity (ensuring the availability of permanent human resources at national level), allowing countries to take greater responsibility for the replication of training and the other project activities and reducing reliance on external support. The training of trainers workshops were particularly resourceful since in country trainings broadened and will continue beyond the period of the project.
234. Regarding timeliness, the LMO project implemented several strategies to adhere to agreed timelines and maximize results within the set project duration. Time-saving measures were

put in place to streamline processes and activities, allowing for the timely completion of project milestones. Additionally, the RAEIN-Africa team proactively addressed delays and obstacles (COVID-19), implementing solutions to keep the LMO project on track (participative re-plannings joint RAEIN-Africa and coordinators in countries). The LMO project's efficient management of resources, proactive approach to addressing challenges, and strategic leveraging of partnerships contributed to its success in achieving objectives within the allocated budget and timeframe.

235. The participation of Governmental entities (Co-finance of the Ministries) in covering costs, particularly in the restructuring of laboratories, was crucial and highly efficient across all countries. Governmental support played a significant role in the restructuring of laboratories, ensuring that the necessary infrastructure improvements were implemented effectively. In each country, government funding was instrumental in covering costs related to laboratory upgrades, equipment procurement, and infrastructure enhancements. Additionally, there was also a smart strategy choice for cost management, whereby national staff, local coordinators, laboratory technicians, and local financial managers did not receive a salary. Only the coordinator received a small monthly financial amount from GEF funds, as ensuring the support of LMO Project's activities. This was an exception in Malawi in which, due to national laws, this contribution was converted into a reimbursement. This approach certainly allowed for maximum cost efficiency and further empowered national governments.
236. This strategy not only ensured the successful completion of laboratory restructuring or the national staff engagement, but also optimized cost-effectiveness. By sharing the financial and logistic problem (e.g. Customs clearance), the LMO project was able to achieve its objectives more efficiently. Even though an exception had to be made for the DRC, considering that the expenses for customs clearance were excessive, albeit supported by financial documents justifying them.

Rating for Efficiency: **Satisfactory (S)**

5.7 Monitoring and reporting

Quality of monitoring design and budgeting

237. The MCP-ICLT/ LMO project's monitoring framework was meticulously crafted to incorporate SMART (Specific, Measurable, Achievable, Relevant, Time-bound) indicators, ensuring measurable outcomes. The budgeting for monitoring was substantial, with over 13,18% of the total project funds allocated specifically to this aspect (totalling USD508,825.96 out of USD3,860,000.00). This significant investment underscores the project's commitment to rigorous tracking and evaluation, ensuring that all planned activities could be quantitatively assessed and adjusted as necessary.

Rating for monitoring design and budgeting: **Satisfactory (S)**

Quality of monitoring project implementation

238. Implementation monitoring was characterized by adaptive management, facilitated by the comprehensive data captured through the monitoring activities. This proactive approach was supported by a detailed monitoring workplan housed in Anubis, which required biannual reporting from country focal points. Reports were compiled locally with RAEIN-Africa's support and translated into English, ensuring timely and relevant data collection and analysis, enabling the project team to make informed adjustments to the project execution.

Rating for quality of monitoring project implementation: **Satisfactory (S)**

Quality of project reporting

239. The project excelled in reporting, with detailed biannual reports submitted by focal points, which were crucial for maintaining accountability and transparency. These reports were essential for tracking progress against the project's goals and were instrumental in the GEF Project Implementation Reports. The thoroughness of **these** reports helped maintain clarity and continuity in the project's aims, offering stakeholders a clear view of achievements and challenges.
240. The main monitoring tools included work plans and Project Implementation Report (PIR) tools, which schematically represented the level of progress toward objectives and the implementation rate of activities (through percentage completion). The RAEIN-Africa and the Task Manager at UNEP (that supervised the LMO project implementation) provided continuous support and follow-up through ongoing communication (email, etc.) and participation in the LMO Project's annual regional meetings of national coordinators (Focal Points) – especially in the compliance with planned deadlines and timeline of the LMO Project. At all monitoring levels, the focus was on achieving activities and outputs and meeting outcomes.

Rating for quality of project reporting: **Satisfactory (S)**

Rating for monitoring and reporting: **Satisfactory (S)**

5.8 Sustainability

241. The evaluation has examined how ongoing efforts have been started and how project outcomes could be maintained, further developed and improved in the future. Therefore, three dimensions of sustainability have been considered.

A. Socio-political sustainability

242. The socio-political sustainability of the MCP-ICLT/ LMO project hinges on the transparency and dedication of national institutions in deliberations and decisions of stakeholders concerning biosafety and LMO detection. Across the countries involved, the evaluation reveals diverse approaches in this regard.
243. In Malawi, Mozambique, Lesotho, and Madagascar, there exists a robust political commitment to addressing biosafety and LMO-related concerns. In these countries the national institutions actively engage in decision-making processes and support project initiatives. Notably, they boast strong legislation governing LMO management, and political bodies extend support to laboratories seeking international accreditation.
244. However, in DRC, significant challenges delay socio-political sustainability. Issues like territorial control difficulties and transparency gaps hinder effective participation of national institutions, thereby slowing project implementation.
245. Similarly, in Angola, despite facing implementation hurdles, there's a discernible institutional drive to enhance biosafety management. The involvement of the Government of Angola in new EU-funded project underscores its commitment to improving LMO certification processes for international accreditation. This highlights a clear governmental interest in the long-term sustainability of project activities.

246. Overall, the socio-political sustainability of the LMO project can be deemed moderately satisfactory, considering various factors. Yet, it's crucial to acknowledge the significant impact of COVID-19 circumstances on this aspect, hindering the full realization of positive milestones achieved during project implementation.
247. One major challenge stem from COVID-19 containment measures, which restricted institutional meetings and ministerial exchanges. This limitation particularly affected countries like the DRC, Angola, and partly Lesotho, impeding their ability to benefit from successful experiences and sustainability practices observed in countries like Malawi, Mozambique, and Madagascar.
248. Furthermore, the lack of opportunities for knowledge exchange and sharing poses a significant hurdle for these countries, limiting their capacity to adopt effective sustainability models based on successful experiences elsewhere.
249. It' is imperative to stress that assessing socio-political sustainability requires more than gauging the intentions of national institutions; it also necessitates active engagement and meaningful participation of local communities and stakeholders. Promoting such engagement is vital to ensure the long-term sustainability of project initiatives.
250. The evaluation of the socio-political sustainability of the LMO project considered the levels of engagement and participation demonstrated by the key stakeholder groups outlined earlier (Chapter 3. The Project). These stakeholders, including national biosafety authorities, ministries of agriculture and environment, academic institutions, and local communities, played a key role throughout the project. Their active participation and commitment to promoting biosafety standards showed interest in the project's results. This collective effort suggests a good basis for taking the project results going forward, by demonstrating a shared commitment to improving biosafety protocols and ensuring compliance with international standards. In the evaluation, it should be emphasised, that it was not possible to meet with any of the stakeholder groups outside the political institutions, so despite the project's high political and social interest, which heralds strong continuity, it cannot be confirmed outside the political sphere.
251. From another hand, it is important to highlight that DRC and Madagascar are also involved in the implementation of the new SINBF project implemented by UNEP/GEF 7, which aims to strengthen institutional, infrastructural, human, and regulatory biosafety capacities of these countries, along with Namibia, in support of the Cartagena Protocol on Biosafety (CPB) and its Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress. This initiative maintains continuity with the LMO Project, extending its efforts to strengthen biosafety capacities in additional countries and promoting regional cooperation and dialogue on biosafety issues.

Rating for socio-political sustainability: **Moderately Likely (ML)**

B. Financial sustainability

252. The evaluation has identified one of the main critical points of the project as being the financial sustainability. During the interviews, the laboratories have highlighted significant difficulties in obtaining funding and having funds for the purchase of analysis reagents, and they are very concerned about future procurement. The COVID-19 pandemic has exacerbated these difficulties, preventing institutions from consolidating purchasing mechanisms during project implementation. In addition to reagents, equipment maintenance is another challenge. In the CARI laboratory in Malawi, for example, the lack of funds has prevented proper maintenance (calibration) of equipment, with some remaining unused. Similarly, in Lesotho, the lack of

funds for instrument calibration is a problem, as it requires technicians to travel from South Africa, which is the country of reference for the company that supplied the laboratory analysis equipment. These difficulties could have been overcome if it were not for COVID-19, which prevented the sharing of situations and problem resolution by project stakeholders.

253. There are, however, exemplary cases of the laboratories that have effectively addressed these challenges, such as the UEM laboratory in Mozambique, which has a consolidated financial strategy due to its extensive experience in managing funding and projects (for example, they have been receiving funds from Italian and Portuguese cooperation for several years). The UEM laboratory is also autonomous compared to the IIAM laboratory in Mozambique or other project stakeholders, as it is a research institute. Therefore, the UEM laboratory can maintain competitive prices to ensure the purchase of reagents, produce the necessary documentation for foreign purchases, and has autonomous internal administration. It is in constant communication with the IIAM laboratory, with which it is also discussing analysis prices, so as not to create competition. However, the UEM laboratory also faces bureaucratic difficulties for foreign purchases. The UEM laboratory, for example, is trying to obtain international authentication for the LMO certificate in Mozambique but is facing complex bureaucratic barriers.
254. The bureaucratic difficulties that the project's target countries face for foreign purchases represent another significant challenge that hinders the achievement of financial sustainability, considering that purchases are made in United States Dollars and the national currency is not valued abroad. This has been a commonly perceived obstacle in countries with depreciated national currencies. A technical consultant emphasized the importance of cooperation between Member States, so that countries facing greater difficulties can obtain more favourable prices for reagents and access to necessary services, not only for this project but also for others. Though, given this scenario, the evaluation does not consider financial sustainability satisfactory.
255. To enhance the financial sustainability of biosafety initiatives in Southern Africa, new projects are emerging, notably the EU-funded Angola Lab project and the support provided by AICS to the UEM lab in Mozambique. These initiatives are designed to address also the financial gaps identified during the LMO project by ensuring continued financial support to laboratories that participated in the project. This continuity is pivotal for sustaining the biosafety infrastructure and capabilities developed under the LMO project, offering a promising path to overcome previous financial challenges and enhance the long-term viability of biosafety measures in the region.

Rating for financial sustainability: **Moderately Unlikely (MUL)**

C. Sustainability of the institutional framework

256. The institutional sustainability of the project can be seen as a significant achievement, as investments in trainer training have substantially strengthened the human resources of the participating institutions. This represents one of the key successes of the project, leading to a notable enhancement in the institutional capacities of the countries involved. Currently, the trained laboratories have become national focal points for LMO management and biosafety. Pending the adoption of formal legal and regulatory frameworks, including biological frameworks, the target countries have implemented transitory measures.
257. However, a critical issue has emerged: in some countries, there is a shortage of personnel available for training. For instance, in Malawi, the trained laboratory technician from LUANAR lacks colleagues to train in this specific field, as they have moved on to other positions after their training, making it challenging to transfer the acquired skills. A similar problem exists in

Angola, where previously trained individuals are no longer available. Nonetheless, the CLA laboratory has established a policy requiring these trained technicians to train the current staff before leaving their positions.

258. Conversely, in Mozambique, there is a more diverse range of human resources and closer communication between the UEM and IIAM laboratories. This has ensured greater institutional sustainability, as personnel are consistently informed and involved in training activities. The UEM and IIAM laboratories collaborate, ensuring shared resource management and improved institutional sustainability.
259. Despite the risks posed by turnover in human resources, training permanent staff still ensures positive institutional sustainability, ensuring a continuous flow of knowledge and skills within the institutions participating in the LMO project.

Rating for institutional sustainability: **Moderately Likely (ML)**

260. Sustainability is a critical aspect of the project; while institutional and political sustainability are rated Moderately Likely, financial sustainability is rated Moderately Unlikely and weighing most heavily due to its reliance on external funding, is the most complex to maintain, resulting in an overall rating of Moderately Unlikely.

Rating for sustainability: **Moderately Unlikely (MUL)**

5.9 Factors affecting performance and cross-cutting issues

A. Preparation and readiness

261. Addressing design weaknesses: At the inception phase, several potential weaknesses in MCP-ICLT/ LMO Project design were identified, including inadequate stakeholder engagement mechanisms and unclear partnership roles. Measures were implemented to enhance stakeholder interaction, though challenges remained, particularly in accessing the National Project Steering Committee due to procedural requirements. This gap indicates a partial response to the identified design weakness, suggesting that while efforts were made to improve engagement protocols, more robust strategies were needed to ensure effective inclusion of all stakeholder groups.
262. Responding to changes during the implementation: Between the approval of the project and the implementation, significant changes, including those induced by the COVID-19 pandemic, impacted project operations. The LMO project teams took measures to adapt to these changes by adjusting timelines and reallocating resources to ensure continuity. The health crises affecting key personnel necessitated a rapid re-evaluation of staffing needs, with interim measures put in place to maintain project momentum despite personal losses and the severe health impacts on the national coordination.
263. Securing and Utilizing Funds: The LMO project managed to secure the necessary funding in alignment with the planned activities. However, the evaluation revealed that the initial financial arrangements were not fully optimized to accommodate unforeseen expenses, particularly those arising from pandemic-related challenges. The financial strategy was subsequently adjusted to better align with the evolving project needs, which was a critical measure in response to the changes post-approval.
264. The LMO project demonstrated a proactive approach in addressing some of the design weaknesses and responded adaptively to post-approval changes, particularly in terms of personnel management and financial realignment. Nonetheless, the evaluation underscores

the need for more comprehensive preparatory measures in stakeholder engagement and financial planning to enhance resilience and responsiveness in future projects.

Rating for preparation and readiness: **Satisfactory (S)**

B. Quality of project management and supervision

a. UNEP/Implementing Agency:

265. UNEP has effectively fulfilled its role as the implementing agency, providing oversight and strategic guidance throughout the project. The UNEP Task Manager played a crucial role in coordinating activities, ensuring adherence to project goals, and facilitating communication among all stakeholders involved, including RAEIN-Africa, various focal points, administrators, financial managers, and Ministries.

b. Partner/Executing Agency:

266. RAEIN-Africa, as the lead and executing agency, has demonstrated high-quality management in executing the project's day-to-day operations. Their leadership was instrumental in navigating the project through its phases, ensuring effective implementation of activities, and maintaining robust engagement with all partners. Despite challenges in accessing members of the National Project Steering Committee, RAEIN-Africa managed to maintain project momentum and adapt to the dynamic project environment, underscoring their capability in managing complex projects.

Rating for quality of project management and supervision: **Highly Satisfactory (HS)**

C. Stakeholder participation and cooperation

267. The evaluation of stakeholder participation and cooperation within the LMO project highlights a nuanced approach to stakeholder engagement:
- (i) Engagement with the National Project Steering Committee: As mentioned before, although the evaluation team faced challenges in directly meeting with the National Project Steering Committee due to logistical and procedural constraints, reports from the participating countries indicated a strong involvement of stakeholders in the project's operations. This involvement suggests that the project was successful in integrating diverse stakeholder groups, even if direct interactions by the evaluation team were limited. Notably, the LMO project successfully involved a significant number of women, which is a positive aspect of stakeholder participation.
 - (ii) Technical Advisory and Support During COVID-19: The LMO project's responsiveness to the challenges posed by the COVID-19 pandemic was exemplified by the strong collaborative approach with technical advisors from Southern Africa. These advisors provided critical support to the countries, ensuring continuity of MCP-ICLT/ LMO project activities and adapting strategies to meet emerging needs during the health crisis. This support was crucial in maintaining project momentum and stakeholder cooperation under extraordinarily challenging circumstances.

Rating for stakeholder participation and cooperation: **Satisfactory (S)**

D. Responsiveness to human rights and gender equity

268. The MCP-ICLT/ LMO project demonstrated a strong commitment to upholding human rights and promoting gender equity, particularly during the challenging circumstances of the COVID-19 pandemic. This commitment was reflected in several key aspects of the project's implementation:
- (i) Protection of Human Rights During COVID-19: During the pandemic, the project faced significant human and logistical challenges, including the illness and loss of key

personnel. In response, the project upheld the human rights of its participants by ensuring that affected staff received the necessary support and respect during their recovery and mourning periods. This approach not only adhered to ethical standards but also helped maintain the dignity and well-being of all project members, aligning with broader human rights principles.

- (ii) **Gender Inclusion and Empowerment:** The project notably excelled in involving women at various levels, particularly those with high educational backgrounds. This strategic inclusion helped to break down barriers to female participation in science and technology fields, particularly in the context of GMOs. By empowering educated women to lead and participate in critical project activities, the LMO Project contributed to challenging gender norms and promoting equality within the scientific community and broader society. This influence is critical for encouraging more institutions to adopt similar practices, thereby advancing gender equity in research and development sectors traditionally with a high presence of men.
- (iii) **Addressing Personal Challenges:** The LMO project's management was sensitive to the personal challenges faced by team members during the pandemic. Efforts were made to accommodate individuals dealing with personal losses or health issues, demonstrating a human-centered approach to project management. This responsiveness not only ensured the continuity of the LMO project under adverse conditions but also reinforced the project's commitment to supporting its workforce in times of crisis.

Rating for responsiveness to human rights and gender equity: **Highly Satisfactory (HS)**

E. Environmental and social safeguards

269. The MCP-ICLT/ LMO project effectively met the UNEP requirements for environmental and social safeguards through several key practices. The LMO project committed to regularly reviewing risk ratings, ensuring that any adjustments in the risk landscape were promptly identified and addressed. This practice was crucial for maintaining the safety and integrity of the project's operations throughout its duration. The management of the RAEIN-Africa for LMO project was particularly attentive to minimizing UNEPs environmental footprint. Efforts were made to implement eco-friendly practices and reduce resource usage, aligning the project's operations with UNEP's overarching goals of environmental conservation and sustainability. These measures not only supported the LMO project's sustainability objectives but also set a standard for initiatives under UNEP's guidance.

Rating for environmental and social safeguards: **Highly Satisfactory (HS)**

F. Country ownership and driven-ness

270. The MCP-ICLT/ LMO project effectively demonstrated a strong commitment to country ownership and driven-ness throughout its operations. Despite facing significant challenges during the COVID-19 pandemic, such as health crises among key personnel and logistical disruptions, the project maintained high levels of local engagement and ownership. This approach ensured that the direction and control of the project's activities remained firmly in the hands of local institutions and stakeholders, enhancing their commitment to the LMO Project's success and aligning outcomes with local needs and priorities.
271. Furthermore, the active participation of local institutions in navigating the challenges of the pandemic highlighted the project's driven-ness. Local teams continued to advance the project's goals despite severe obstacles, showcasing their dedication. This sustained effort not only underscored the principle of country ownership but also ensured that the project

remained relevant and driven by the needs and capacities of the communities it aimed to serve.

Rating for country ownership and Driven-ness: **Highly Satisfactory (HS)**

G. Communication and public awareness

272. The LMO project faced notable challenges in public awareness and communication, which impacted its visibility and broader engagement, particularly with key institutions such as FAO in Angola and civil society organisations. The lack of awareness about the project among important local and international stakeholders, coupled with language barriers (specifically the absence of Portuguese or French-speaking staff within the RAEIN-Africa for example) hindered effective communication and information dissemination. This not only limited the project's reach and impact but also reduced its visibility in the public sphere and among institutions that could have contributed to or benefited from the project. Enhancing communication strategies, increasing multilingual capabilities within the project team, and implementing more robust public engagement initiatives would be crucial steps to overcome these challenges in future projects.

Rating for communication and public Awareness: **Moderately Satisfactory (MS)**

Rating for factors affecting performance and cross-cutting issues: **Highly Satisfactory (HS)**

5.10 Summary of project findings and ratings

273. Table 22 below summarizes the ratings and findings of the criteria set by the UNEP Evaluation Office discussed and assessed in Chapter 5. Overall, the project performance is rated as "Satisfactory" (S).

Table 22. Summary of the LMO project findings and ratings

Criterion	Summary Assessment	Rating
A. Strategic relevance	High relevant particularly with national and regional context and plans.	HS
<i>1. Alignment to UNEP's MTS, POW and strategic priorities</i>	Very well aligned with UNEP MTS and PoW strategies.	HS
<i>2. Alignment to Donor/Partner strategic priorities</i>	Highly aligned with Objective 3 of the Biodiversity Focal Area, aiming to implement the Cartagena Protocol on Biosafety (CPB) under GEF 5 of the GEF-5 Strategy. It aligns with Outcomes 2.1, 2.2, and 2.3 of Objective 2.	HS
<i>3. Relevance to global, regional, sub-regional and national environmental priorities</i>	Well aligned with South-South Cooperation and SADC priorities and SDG 2 and Africa's Agenda 2063.	HS
<i>4. Complementarity with relevant existing interventions</i>	The project aligned perfectly with the needs of countries in terms of both human health safety and Biosafety oriented towards transparent and regulated LMO management.	HS
B. Quality of project design	Overall, the quality of the project design was highly satisfactory.	HS
C. Nature of external context	COVID-19 was the external event that had not been considered during the project's planning phase, and for which no one was prepared. Project management during COVID-19 was satisfactory, although it indeed posed challenges to consolidation and sustainability.	F
D. Effectiveness	Highly Satisfactory effectiveness results.	HS

Criterion	Summary Assessment	Rating
1. Availability of outputs	Outputs delivered despite unfavourable context created by COVID-19.	HS
2. Achievement of project outcomes	Outcome achieved despite unfavourable context created by COVID-19.	HS
3. Likelihood of impact	Potentially likely considering that is too early to analyse the project impact.	L
E. Financial management	Highly Satisfactory project financial management.	HS
1. Adherence to UNEP's policies and procedures	Very well aligned with UNEP procedures.	HS
2. Completeness of project financial information	Information completed and organized.	HS
3. Communication between finance and project management staff	Very frequent and transparent flow of information.	HS
F. Efficiency	Cost-effectiveness well optimized	S
G. Monitoring and reporting	Positive and strong Monitoring and Reporting processes.	S
1. Monitoring design and budgeting	Well monitored and used.	S
2. Monitoring of project implementation	The project has been monitored adequately.	S
3. Project reporting	The project progress has been reported appropriately.	S
H. Sustainability	Sustainability is the critical point of the project and has been mainly affected by COVID-19.	MU
1. Socio-political sustainability	Socio-political sustainability of the MCP-ICLT/ LMO project evaluated as moderately likely.	ML
2. Financial sustainability	Financial sustainability is evaluated as moderately unlikely due to persistent financial challenges and gaps.	MUL
3. Institutional sustainability	Despite the risks of staff turnover, ongoing training of permanent staff ensures positive institutional sustainability by maintaining a continuous transfer of knowledge and skills within the participating institutions of the MCP-ICLT/ LMO Project.	ML
I. Factors affecting performance and cross-cutting Issues	Satisfactory	HS
1. Preparation and readiness	The project proactively addressed design weaknesses and adaptively responded to post-approval changes, especially in personnel management and financial realignment.	S
2. Quality of project management and supervision	Very high quality of management of RAEIN-Africa and supervision of UNEP.	HS
2.1 UNEP/Implementing Agency:		
2.2 Partners/Executing Agency:		
3. Stakeholders participation and cooperation	Highlights successful stakeholder integration and strong female involvement, despite logistical challenges, and emphasizes the critical support provided by Southern African technical advisors during the COVID-19 pandemic to maintain project momentum.	S
4. Responsiveness to human rights and gender equality	The project upheld human rights and promoted gender equity during the COVID-19 pandemic by supporting affected staff, involving educated women in key roles, and addressing personal challenges faced by team members, thereby maintaining ethical standards and advancing gender equality.	HS
5. Environmental and social safeguards	The project met UNEP's environmental and social safeguards by regularly reviewing risk ratings and implementing eco-friendly practices to reduce resource usage and setting a standard for future initiatives.	HS

Criterion	Summary Assessment	Rating
6. Country ownership and driven-ness	Strong country ownership and driven-ness by maintaining local engagement and control despite COVID-19 challenges, with local institutions actively advancing project goals and aligning outcomes with community needs and priorities.	HS
7. Communication and public awareness	Shortage in disseminating project results	MS
Overall project rating	Satisfactory	S

6 Conclusions and recommendations

6.1 Conclusions

274. The MCP-ICLT/ LMO project marked a substantial change in LMO management and Biosafety in Angola, the Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi and Mozambique, and consequently in the SADC region. In fact, the UNEP/ GEF Project “Multi Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making” (MCP-ICLT/ LMO project) (GEF ID 5283) facilitated by RAEIN-Africa has indeed strengthened infrastructure, improved technical expertise and effectively fostered partnerships/collaboration between the relevant laboratories and between the laboratories and the regulatory authority. The project has further improved the skills and techniques for sampling, handling documentation of LMOs thus giving the actors involved in the regulatory process, the tools to adequately exercise their function and authority, strengthening the entire decision-making chain on biosafety and LMO management.
275. Before the LMO project started, most of the laboratories in these countries involved in the project were in a difficult situation, degraded and with dilapidated facilities. Although they had qualified personnel, their experience and practice in managing and analysing LMOs was limited, and they lacked modern instruments and equipment, which would allow reliable and adequate scientific analyses. A shortage of reagents and a lack of familiarity with standard international minimum procedures for holding and analysing LMOs made the certification process a difficult maze to navigate. National regulations or procedures were unfamiliar, and many companies and institutions operated in ignorance of regulations or guidelines.
276. On the other hand, Governments did not have centres or reference laboratories to verify the conformity of seeds, products and food on the market, risking not having proper control over the territory and therefore not being able to know which and how many LMOs were circulating in the country. The laboratories thus acted in a state of near isolation, excluded from international scientific networks, which deprived them of the opportunity to grow and improve, sharing experience and knowledge.
277. Although there are differences between each of the six countries involved, thanks to the LMO Project, this situation has changed considerably, as the project has achieved some fundamental goals:
- Capacity building - is the most common outcome extolled. Training and capacity building in the laboratories and institutions involved in LMO analysis is undoubtedly the most relevant achievement for those involved in the project.
 - Equipment - Modern and scientifically reliable equipment was provided, enabling the laboratories to conduct accurate and efficient analyses.

- Laboratories are now national references for LMO detection. The laboratories in these countries have become national references for LMO detection. With the training received, staff can put in place minimum standard procedures and ensure compliance with national and international regulations. This has enabled decision-makers to make informed and transparent decisions based on reliable scientific evidence. In addition, companies are now aware of the legal route and regulations to be followed to obtain certification on LMOs, which has helped to ensure security and transparency in trade, especially in the context of the six target countries that are highly dependent on imports.
- Resilience to COVID-19 and adaptation strategy, despite the challenges imposed by the COVID-19 pandemic, the project remained effective. RAEIN-Africa and the other stakeholders involved successfully adapted their strategies to continue supporting the project activities, thus ensuring the continuity and success of the initiatives.

278. RAEIN-Africa played a key role in guiding and supporting the implementation of the LMO project. It not only provided continuous advice and technical assistance to the countries involved, but also promoted a participatory and collaborative approach, actively involving all stakeholders in the decision-making process and implementation of project activities. During the COVID-19 pandemic, RAEIN-Africa demonstrated extraordinary flexibility and adaptability. It revised and adapted budgets and strategies in response to the new challenges and restrictions imposed by the health situation, ensuring that the project could continue effectively and efficiently despite the adverse circumstances. In addition, RAEIN-Africa acted a dynamic protagonist in coordinating the responses of affected countries to the pandemic, facilitating the exchange of knowledge, resources, and best practices between them. It promoted collaboration and solidarity between project participants, thus helping to mitigate the negative impacts of the pandemic on project activities and the sustainability of the progress achieved. Thus, RAEIN-Africa has proven to be a reliable and proactive partner in supporting African countries in addressing challenges related to LMO detection and biosafety, both under normal conditions and during times of crisis such as the COVID-19 pandemic.

279. There were still very big challenges that unfortunately were not overcome through the consolidation of the project activities due to COVID-19, which arrived when the budget was almost exhausted and during the last year of the project. The no-cost extension did not help, considering that there were still movement restrictions. This particularly affected the financial sustainability and logistics of reagent acquisition and instrument maintenance.

6.1.1 Summary of the main strengths of the LMO project

280. Capacity Building and Technical Improvements: One of the most significant strengths of the project was its focus on enhancing the technical capabilities of laboratories involved in LMO analysis. Through extensive training programs and the provision of modern, scientifically reliable equipment, the project equipped these laboratories to perform sophisticated and efficient LMO detections. This not only improved the scientific standards within these facilities but also positioned them as national references for LMO testing. Such advancements are crucial in regions heavily reliant on agricultural imports, as they ensure that LMO regulations are met and that trade can be conducted securely and transparently.

281. Additionally, the project fostered regional cooperation, enabling technical support and knowledge sharing across borders. This collaborative approach allowed for the standardization of practices and reinforced a collective capability to manage Biosafety risks more effectively.

282. Resilience and adaptability: The project demonstrated remarkable resilience in the face of the COVID-19 pandemic. RAEIN-Africa, as the guiding body, played a crucial role in swiftly adapting

the project's strategies to overcome pandemic-induced challenges. This included revising budgets, modifying operational strategies, and shifting to virtual platforms to maintain project continuity. These adaptations were pivotal in ensuring that the project did not lose momentum despite severe external disruptions.

283. The project also leveraged regional networks to provide ongoing technical support and ensure that all participating countries could continue their critical functions without interruption.

6.1.2 Summary of the main weaknesses of the LMO project

284. Visibility and public awareness: Despite its substantial impact on Biosafety and LMO management, the project suffered from a significant lack of visibility. Key potential collaborators and stakeholders were not fully aware of the project's activities and achievements. This gap in visibility hindered the project's ability to engage with a broader array of stakeholders and limited its potential impact on policy and practice at national and regional level. This situation varies across the countries. For instance, in Angola, FAO, which has collaborated with the Ministry of Agriculture for many years, imported genetically modified seeds into the southern region without being aware of the LMO Project.
285. Financial Sustainability: As the LMO Project advanced towards its conclusion, financial sustainability became a pressing concern. The near exhaustion of budgets towards the end of the project timeline, compounded by logistical challenges such as the procurement and maintenance of reagents and equipment, posed significant barriers. These challenges were further aggravated by the COVID-19 pandemic, which constrained movement and disrupted supply chains, making it difficult to sustain the operational capabilities of the laboratories.
286. A heavy reliance on external funding sources can be a significant weakness, as it may affect the LMO Project's ability to sustain itself once the initial funding period is over. This could lead to challenges in maintaining the momentum and continuing the initiatives started by the project without consistent financial input
287. The Evaluation was also requested to answer five strategic questions:
288. **Q1:** *What changes were made during project implementation to adapt to the effects of COVID-19 and how did any changes affect the project's performance?*

During the project implementation, several adjustments were made to cope with the impact of COVID-19. These included revising budgets, strategies, and action plans to adapt to the new challenges and restrictions. Additionally, the project shifted towards virtual communication and remote work arrangements to ensure safety while maintaining continuity. RAEIN-Africa played a crucial role in guiding and supporting these adjustments. It provided continuous advice, technical assistance, and facilitated communication between target countries and stakeholders. RAEIN-Africa promoted a participatory approach, actively involving all stakeholders in decision-making processes, and facilitating collaboration between countries. These changes had mixed effects on the project's performance. On one hand, logistical challenges and disruptions like travel restrictions and delays in procurement affected timelines and milestone achievement. On the other hand, RAEIN-Africa's proactive guidance and the team's resilience and adaptability allowed them to continue activities through virtual collaboration and flexible resource reallocation. In response to the challenges posed by COVID-19, requests for no-cost extensions were made to funding organizations to adjust project timelines. These extensions provided additional time to complete project activities affected by the pandemic. Inclusive, while COVID-19 presented challenges, proactive adjustments supported by RAEIN-Africa helped mitigate its impact. Though timelines and resource allocation were affected, the project team's resilience sustained progress towards project goals despite pandemic adversities. Collaboration between

RAEIN-Africa and target countries played a crucial role in ensuring that the project remained on track and adaptable to changing circumstances.

289. **Q2:** *How was procurement built into the project design and to what extent did the procurement approach contribute to the performance of the project?*

Procurement was a fundamental aspect of the LMO project design, integrated to ensure the acquisition of necessary equipment, supplies, and services to support project activities effectively. The procurement approach was structured to align with project goals, timelines, and budgetary constraints. The project design involved a detailed needs assessment to identify the specific requirements of each country and laboratory involved. This assessment informed the procurement plan, outlining the equipment, reagents, and other resources needed to enhance LMO detection capabilities and biosafety measures. A competitive bidding process was often employed to select suppliers, ensuring transparency and value for money. This process involved soliciting bids from multiple vendors, evaluating proposals based on predefined criteria, and selecting the most suitable option. RAEIN-Africa was very important in facilitating procurement activities, providing technical expertise, and guiding the process to ensure compliance with standards and regulations. Additionally, RAEIN-Africa's established network and partnerships facilitated access to reputable suppliers and ensured the quality and reliability of procured items.

The procurement approach significantly contributed to the performance of the LMO Project by:

- Ensuring availability of necessary resources: By procuring state-of-the-art equipment, modern technologies, and high-quality reagents, the LMO project enhanced the capacity of laboratories to detect LMOs and implement biosafety measures effectively.
- Enhancing efficiency and effectiveness: Timely procurement of resources enabled smooth project implementation, minimizing delays and ensuring that activities progressed according to schedule.
- Improving quality and accuracy: The use of standardized procurement processes and the selection of reputable suppliers ensured the quality and reliability of procured items, enhancing the accuracy and reliability of project outcomes.
- Creating networks for supporting sustainability: Procurement contacts were made with long-term sustainability in mind, ensuring that laboratories had access to international labs networks for supporting maintenance of equipment for continued operation beyond the project duration.

290. **Q3:** *To what extent were synergies created during implementation between the countries and the regional level and transformed into opportunities for replication or scaling-up?*

During project implementation, synergies were established between the countries involved and the regional level, creating potential opportunities for replication or scaling-up of project activities. These synergies were fostered through collaboration, knowledge sharing, and coordinated efforts to address common challenges. RAEIN-Africa has been crucial and proactive in facilitating these synergies, serving as a platform for communication and cooperation among project participants. Through regular meetings and workshops, in-person and remote, countries were able to share experiences, best practices, and lessons learned, fostering a sense of solidarity and collaboration. One of the key outcomes of these synergies was the creation of a conducive environment for replication or scaling-up of project interventions. However, it's important to reminder that the COVID-19 pandemic posed significant challenges to the consolidation of these synergies. Travel restrictions, social distancing measures, and other disruptions affected the capacity for in-person meetings and knowledge exchange activities. As a result, the momentum for replication or scaling-up may have been impacted, at least temporarily. Despite these challenges, the project laid the groundwork for future collaboration

and replication efforts. By building strong relationships and sharing valuable insights, countries have developed a solid foundation upon which to build future initiatives.

291. **Q4:** *Examine the linkages with UN reform, UNCT and UNSDCF engagement in the project countries with opportunities for UNEP, especially with countries in Southern Africa?*

The LMO project has established strong linkages with UN reform, UN Country Teams (UNCT), and United Nations Sustainable Development Cooperation Frameworks (UNSDCF) in the project countries, particularly in Southern Africa. These linkages have provided valuable opportunities for collaboration and synergies between the project and various UN agencies, including UNEP. RAEIN-Africa has been instrumental in fostering these linkages, serving as a conduit between the LMO project and UN entities at the country and regional levels. Through its engagement with UNCTs and UNSDCFs, RAEIN-Africa has facilitated the alignment of project activities with national development priorities and the UN's sustainable development agenda. One significant outcome of this collaboration has been the integration of LMO-related issues into national and regional development plans and frameworks. By working closely with UN agencies or other International Stakeholders (especially in Malawi, Mozambique), the LMO project has contributed to the mainstreaming of biosafety and LMO management considerations into broader development strategies, such as poverty reduction, food security, and environmental sustainability¹⁹. UNEP has provided technical expertise and support to LMO project target countries in Southern Africa (especially with strong involvement of the Task Manager). Through its regional offices and networks, UNEP has assisted countries in strengthening their capacity for LMO detection, risk assessment, and regulatory compliance. Moreover, the LMO project has capitalized on opportunities for joint programming and resource mobilization within the UN system. By leveraging existing UN mechanisms and partnerships, such as the GEF, the project has accessed additional funding and technical resources to support its objectives.

292. **Q5:** *In what ways, and to what extent, were the recommendations from the Mid Term Review actioned upon?*

The MTR was completed in 2019, shortly before the project was affected by COVID-19. Although an extension was granted at no additional cost, some recommendations were not fully implemented because the project was already nearing completion and much of the budget had been spent. However, clear efforts were made in several areas. For instance, efforts were made in the dissemination of LMO processes and networking with laboratories. Efforts were made to standardise communication, although e-mail communication is not widely used in these countries. In fact, even during the evaluation, it was noted that focal points and national staff prefer more immediate and faster communication than e-mail, via WhatsApp or other instant messaging services. In addition, some recommendations, especially those concerning legal aspects and formal processes, were slowed down by COVID-19, which made formal meetings difficult. The pandemic made the necessary consolidation of these processes and legal aspects difficult as it required more direct interaction, which, with high-level government institutions, the only ones able to formalise rules and regulations, could not be done through email or messages, but through in-person meetings. However, despite the additional challenges due to the pandemic situation, there was a commitment to comply and follow the recommendations of the 2019 MTR.

6.2 Lessons learned

293. Several lessons emerge from the experiences of the MCP-ICLT/ LMO project that the evaluation summarised.

¹⁹ As reported in the weaknesses section, this situation varies across different countries. For instance, in Angola, the FAO, which has collaborated with the Ministry of Agriculture for many years, imported genetically modified seeds into the southern region without being aware of the project.

Lesson Learned #1:	The Importance of operationalising National Legal Frameworks
Context/comment:	The project design was centered around the technical aspects of LMO detection in line with the provisions of the Cartagena Protocol to which all of the countries forming part of the project adhered. However, national legal frameworks were not in place or not operationalize in some of the countries. The lack of policy and political commitment should have to be considered for future intervention also to consolidate a long-term sustainability.
Lesson Learned #2:	Centralization of Procurement Process in an Advantage in Multi-Country Projects
Context/comment:	The initial project design made provision for the procurement of equipment at national level. However, RAEIN-Africa managed to centralise the procurement process, allowing for the reduction in costs and the uniformization of the calibration and maintenance process of the equipment, while providing a more efficient unique training to the personnel in all countries. This positive approach could be adopted for all regional projects.
Lesson Learned #3:	The importance of capacity building and continuous training
Context/comment:	The LMO Project highlighted the critical importance of building institutional and technical staff capacities to manage Biosafety and LMO challenges effectively. Utilizing a Train-the-Trainer (ToT) methodology not only ensured institutional sustainability but also highlighted the necessity of retaining trained staff within their roles to maintain continuity. Each country established both academic and governmental units to foster continuous professional development and provide the flexibility needed for sustainable long-term project implementation. Moreover, it's vital to equip these trained individuals with sufficient resources to sustain training efforts and enhance their capability to handle future challenges.
Lesson Learned #4:	Streamlining LMO International Lab Accreditation: The Power of Inter-Country Collaboration.
Context/comment:	The international accreditation is an objective of Countries, but the process for laboratories to gain this international accreditation for LMO (Living Modified Organisms) testing is heavily encumbered by high levels of bureaucracy, both at national and international levels. Countries face numerous barriers throughout various stages required for accreditation, such as acquiring materials, navigating legal frameworks, and complying with rigorous standards. However, inter-country collaboration and joint advocacy, particularly evident during stages like material acquisition, prove to be effective strategies in overcoming these bureaucratic challenges. By working together, countries can streamline the accreditation process, share resources, and align their efforts to meet international standards more efficiently. This cooperative approach not only simplifies the process but also accelerates the pace at which laboratories can be accredited, enhancing their capabilities in LMO detection compatible with global standards.

Lesson Learned #5:	The importance of innovative approaches and adaptability in project management
Context/comment:	The project was designed prior to the COVID-19 pandemic, However, the Lead Executing Agency managed to successfully overcome this challenge through innovative approaches. Although the Project Documents contained a section on risk assessments, COVID-19 has not and could not be foreseen. Adaptability and innovation to face such events is therefore critical.

Lesson Learned #6:	Investment in the national financial aspect is crucial to ensure the sustainability
Context/comment:	The investment both in terms of GEF Trust Fund money and co-funding needs to be carefully planned and strategized at project design stage to ensure that the project has and builds the capacity to go ahead when funds are exhausted. To this effect, such projects should include a specific technical assistance in financial sustainability component to ensure that sufficient revenue is generated to maintain the equipment, purchase the reagents, train the personnel necessary for the proper running of the laboratory and develop new applications to generate funding in the medium and long term.

Lesson Learned #7:	Significant investment in communication and dissemination strategies is important to give a project visibility and raise awareness among stakeholders
Context/comment:	The project experienced limited visibility and awareness among potential external catalysts, such as FAO in Angola, which may have been partly due to the impacts of COVID-19. This highlighted a significant gap in the project's multi-stakeholder communication strategy. An effective communication plan aimed at engaging a wider range of stakeholders is essential. Developing such a strategy would involve identifying key actors, tailoring messages that address their interests and potential contributions, and leveraging various communication platforms to ensure broader dissemination and engagement.

Lesson Learned #8:	The role of highly qualified women in LMO detection is essential
Context/comment:	The strong presence of highly qualified women in the LMO project and its leadership is a positive factor that is not always common in scientific projects but can be a replicable and inspiring element of innovation. A key lesson learned from the LMO Project is the transformative role of involving highly qualified women in leadership and technical roles. This strategy not only improved project outcomes but also inspired broader social change by elevating women's professional and academic aspirations. Seeing women excel in typically male-dominated fields like science and technology can motivate other women and girls to pursue similar paths, thereby promoting gender equality and empowering women. This positive shift highlights the importance of incorporating strategic gender inclusion in project planning

	to ensure that women are leaders and key contributors, influencing both the project's success and broader societal norms.
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6.3 Recommendations

294. The recommendations 1 and 2 are mainly addressed to National Governments, represented in the project by Ministries. This is considering their key role as key actors and decision-makers in national dynamics, supported by UNEP and RAEIN-Africa to harmoniously implement common objectives in relation to the environment, LMO detention, biosafety and human health. The final recommendation, aimed at UNEP and RAEIN-Africa, concerns implementation and efforts to ensure plans for financial sustainability, which must be more concrete already in the project design phases.

Recommendation #1:	The ministries should expand on the achievements of the LMO project, continuing to maintain a high level of quality for infrastructures, promoting collaboration between laboratories, national exchange of experiences, facilitating participation in new training and further education opportunities and enhancing the number and quality of human resources currently present and to be up to date in terms of equipment.
Challenge/problem to be addressed by the recommendation²⁰:	The main challenge that led to this recommendation is the need to ensure continuity and consolidation of the progress achieved by the LMO project. Despite the successes achieved, ministries are faced with the challenge of maintaining and extending these achievements over time. One of the main problems is the complex nature of activities related to the management of LMO and biosafety. These activities require not only advanced technical infrastructure and highly qualified personnel, but also collaboration and knowledge exchange between the various actors involved. However, the Ministries in the target countries are often constrained by a lack of resources and fragmented initiatives, which can slow down progress and limit the effectiveness of the actions undertaken. Consequently, the recommendation focuses on the importance of continuity of ministerial support to ensure that the positive results of the LMO project are not lost. It is essential to promote collaboration between laboratories and facilitate the exchange of experiences between them. In addition, it is necessary to provide new training and refresher training opportunities for existing staff to maintain and enhance their skills. This includes both specific technical training on GMO and biosafety issues and the development of soft skills, such as change management and leadership. Furthermore, to address the challenge of the shortage of skilled human resources, ministries need to focus on promoting initiatives to attract new talent and ensure the growth and development of those already working in the sector. This could include to improve and to operationalize scholarship programs, partnerships with academic institutions, and the creation of attractive career opportunities in biosafety and LMO management. In addition, to address the rapidly evolving challenges in LMO detection, such as genome editing and artificial DNA, it is critical to incorporate the latest technological advancements in project planning (to adapt to technological progress by equipping laboratories with advanced

²⁰ The same challenge/problem can lead to a recommendation of more than one type, i.e. one or more of the following: Project Level, UNEP-wide or Partners recommendation.

	detection tools like Digital PCR and sequencers). Ensuring that project designs account for such innovations will enhance the effectiveness of biosafety measures and maintain alignment with international standards in biosafety testing.
Priority Level²¹:	Important
Type of Recommendation²²:	Partners Recommendation
Responsibility:	Government with UNEP and RAEIN-Africa Support
Proposed implementation time-frame:	12 months

Recommendation #2:	Angola, Madagascar and DRC should invest in the approval of a national legal framework and standardize the regional legal framework, that include a dedicate financial planning, supporting countries with regulatory gaps through increased cooperation.
Challenge/problem to be addressed by the recommendation:	The main challenge that led to this recommendation is the need to ensure a clear and uniform regulatory framework for the management of genetically modified organisms (GMOs) at both national and regional levels. Currently, some of the target countries, such as Angola and the DRC, have gaps in their legislation regarding LMOs, and there is a lack of regulatory harmonization among the various countries in the region. One of the primary challenges is also posed by the regulatory differences between countries, which can create uncertainties and hinder cross-border cooperation. This regulatory fragmentation can make it difficult for countries to develop effective policies and procedures for LMO management and biosafety. Additionally, regulatory gaps can weaken control and regulatory systems, increasing the risk of negative impacts on human health and the environment. Another issue is the lack of resources and institutional capacity for the development and implementation of robust regulatory frameworks. Limited financial and human resources dedicated to creating and implementing laws and regulations regarding LMOs equally represent a challenge that must be overcome through the definition of a regular and comprehensive regulatory framework. Therefore, the recommendation focuses on the importance of investing in the approval of a national legal framework for GMO management, as well as the uniformity of the regional legal framework. This requires increased cooperation among countries to harmonize their legislation and develop common policies. Countries with regulatory gaps (Angola, DRC) should be supported through the sharing of experiences, technical assistance, and training (Mozambique, Lesotho and Malawi). Creating a clear and unified legal framework is crucial to provide legal certainty to the stakeholders involved in LMO management, including farmers, businesses/private sector, and research institutions. A robust regulatory framework can also facilitate the approval and commercialization process of LMOs, while ensuring food security, environmental protection, and public health.

²¹ Critical, Important or Opportunity for Improvement.

²² Project Level, UNEP-Wide or Partners recommendation.

Priority Level:	Important
Type of Recommendation:	Partners Recommendation
Responsibility:	Government with UNEP and RAEIN Support
Proposed implementation time-frame:	12 months

Recommendation #3:	UNEP along with RAEIN-Africa/Lead Executing Agency (LEA) should disseminate the LMO project's results, ensuring broad visibility and understanding of its achievements and lessons learned.
Challenge/problem to be addressed by the recommendation:	The recommendation stems from a crucial need to secure the financial, socio-political, and dissemination sustainability of the LMO project outcomes. A primary challenge identified was the difficulty in strategizing financial resources to ensure the continuity of project activities post-conclusion. Additionally, there was limited socio-political awareness about LMOs in the involved countries, which extended beyond the immediate project partners and institutions. This lack of awareness potentially hindered a comprehensive national understanding of the policies and regulations governing LMO management. Ineffectiveness in disseminating results post-project also impeded solidifying socio-political awareness. Therefore, the recommendation underscores the necessity of investing in a robust communication strategy that not only promotes financial and socio-political sustainability but also ensures broad outreach. This campaign should be meticulously designed to attract interest from potential donors, including other funding agencies and the private sector. Involving specific communication experts is essential for crafting and implementing this campaign effectively. By leveraging professional expertise in communication, the campaign will enhance the visibility of the project's outcomes and foster the development of subsequent projects, ensuring that both the project's achievements and its ongoing needs are clearly communicated to a broad audience.
Priority Level:	Important
Type of Recommendation:	Project Level and UNEP-Wide
Responsibility:	UNEP and RAEIN-Africa Support
Proposed implementation time-frame:	6 months

7 Annexes

Annex 1 Response to stakeholder comments received but not (fully) accepted by the evaluators

All comments received by stakeholders during the review of the draft evaluation report were considered and accepted the Evaluation Team for the revision and finalization of the report.

Annex 2 Evaluation itinerary and people met

Evaluation Itinerary

COUNTRY	DATE	Activity/Organization	KEY INFORMANTS
Angola	28-feb	Meeting at the Ministry of Environment	1 National Coordinator Focal Point
	01-mar	Visit to CLA Laboratory	1 CLA Lab Director
South Africa	11-mar	Meeting with RAEIN-Africa	1 Director of RAEIN-Africa 1 Finance and Risk Manager 1 Biological Technical Expert/Project Manager 1 Administrative and Logistical Assistance
	12-mar	Meeting with RAEIN-Africa	1 Director of RAEIN-Africa 1 Finance and Risk Manager 1 Biological Technical Expert/Project Manager 1 Administrative and Logistical Assistance
	13-mar	Meeting with RAEIN-Africa	1 Director of RAEIN-Africa 1 Finance and Risk Manager 1 Biological Technical Expert/Project Manager
	15-mar	Meeting with RAEIN-Africa	1 Finance and Risk Manager 1 Biological Technical Expert/Project Manager
	18-mar	Meeting at IIAM	1 National Coordinator Focal Point 1 Director of IIAM 1 Financial and Administrative Responsible
Mozambique		Visit IIAM Laboratory	3 Technicians of Lab (ToT) 1 Director of Lab (ToT)
		Meeting at UEM Visit UEM Laboratory	2 Technicians of Lab (ToT) (and 1 is the Administrator of Lab) 1 Director of Lab (ToT)
	20-mar	Travel to Lilongwe	
	19-mar	Meeting at the Ministry of Environment and Visit National University of Lesotho (NUL), Molecular Biology Laboratory And Department of Agricultural Research (DAR)	2 Technicians of Lab (ToT) (and 1 is the Administrator of Lab) 2 Director of Lab (ToT) 1 Director Environment 1 Accountant 1 Department of Agricultural Research 1 National Project Coordinator
Lesotho	21-mar	Meeting at LUANAR Visit the LUANAR Lab	1 Director and Technician of Lab (ToT)
		Visit the Chitedze Agricultural Research Station (CARS) Lab	1 Technician of Lab (ToT)
	22-mar	Meeting at the Ministry of Environment	1 National Coordinator Focal Point 1 Financial and Administrative Responsible
Malawi	23-mar	Travel to Johannesburg	
	24-mar		
	25-mar	Online meeting	1 Technical Advisor
South Africa			

DRC	26-mar	Meeting with RAEIN-Africa	1 Financial and Administrative Responsible
	02-apr	Meeting Online with General Atomic Energy Commission/Regional Centre for Nuclear Studies, Kinshasa Lab and Veterinary Laboratory of Kinshasa Lab	2 Director of Labs
Madagascar	09-10-apr	Meeting and visit University of Antananarivo, Molecular Biology Laboratory, Department of Plant Biology and Ecology and Centre National de Recherches sur l'Environnement (CNRE), Laboratory of Environmental Microbiology	1 Director General of Sustainable Development (DGDD) MCP-ICLT/ LMO Project supervisor 1 National Focal Point (PFN) for Biosafety in Madagascar 1 National Coordinator of the MCP-ICLT/ LMO Project 3 Biosafety NFP, Evaluator and Project Team 1 Vice Dean of the Faculty of Science 1 Head of the Plant Biology and Ecology Department 1 Head of Molecular Biology Laboratory (LBM), University of Antananarivo 1 Director, CNRE 1 Head of Terrestrial Ecosystems Department 1 Head of Microbiology Laboratory, CNRE 1 Member of the national biosafety committee (CNB) BCH
ONLINE	12-apr	Meeting UNEP	2 Finance Managers
	17-apr	Meeting UNEP	1 Task Manager
	18-apr	Meeting UNEP	1 GEF Portfolio Manager

List of people met				
Location	Organization	Name	Position	Gender
Angola	Ministry of Environment	Nadia Bernando	Project Coordinator	F
Angola	Ministry of Agriculture	Wladimira Alice Justino	Director of Central Laboratory of Agriculture	F
DRC	Ministry of Fisheries & Livestock	Pius Mwana Mputu Ngolomongi Guy Mboma	Director of Central Veterinary Laboratory, (VET Lab)	M M
DRC	Commissariat Général à l'Energie Atomique	Freddy Bulubulu Otono	Head of Biotechnology Section Commissariat General a l'Energie Atomique/Centre Regional d'Etudes Nucleaires de Kinshasa	M
Lesotho	Department of Environment Ministry of Tourism, Environment and Culture (MTEC)	Maboi Mahula	Project Coordinator	M
Lesotho	National University of Lesotho (NUL)	Peter Chatanga Taole Motselisi Matsepo Maduna Liteboho	Director of Lab	M F M
Lesotho	Ministry of Agricultural, Department of Agricultural Research (DAR)	Malefetsane Khesuoe James Mtho Motlatsi Mojo Tanki Khabisi Mosunkuthu	Director of Lab	M M M M
Lesotho	Ministry of Tourism, Environment and Culture	Qongqong Hoohlo	Director Environment	F
Lesotho	Ministry of Tourism, Environment and Culture	M Moeketsi	Assistant Finance Officer	F
Malawi	Environmental Affairs Department	Lilian Chimphepo Patse Banda	Project Coordinator Finance Officer	F F
Malawi	Lilongwe University of Agriculture and Natural Resources (LUANAR)	Bridget Agnes Vakusi	Laboratory Manager LUANAR	F
Malawi	Environmental Affairs Department	Emmanuel Phiri	Financial and Administrative Officer	M
Malawi	Chitedze Agricultural Research Station	Temwa Theu Kelvin Mbalame	Lab Technican Lab Technician	M M
Mozambique	Instituto de Investigação Agraria de Moçambique	Constantino Senete	Technical Director, Directorate of Agronomy and Natural Resources	M
Mozambique	Instituto de Investigação Agraria de Moçambique	Paulino Munisse	Project Coordinator	M

List of people met				
Location	Organization	Name	Position	Gender
Mozambique	Eduardo Mondlane University (EMU) Centro de Biotecnologia	Olivia Carolina Narciso Pedro	Laboratory Director UEM	F
Mozambique	Instituto de Investigação Agraria de Moçambique	Marta Solemanegy	Head of Section of Biology Laboratory, Biotechnology Laboratory	F
Mozambique	Instituto de Investigação Agraria de Moçambique	Ricardo Josué Macia	Head of Biotechnology Laboratory, IIAM	M
Mozambique	Instituto de Investigação Agraria de Moçambique	Aginaldo José Alicete	Technician of Lab IIAM	M
Mozambique	Instituto de Investigação Agraria de Moçambique	Camilo António	Technician of Lab IIAM	M
Mozambique	Instituto de Investigação Agraria de Moçambique	Inocencia Tapaça Martinho	Technician of Lab IIAM	F
Mozambique	Instituto de Investigação Agraria de Moçambique	Eugencia Eduardo Tembe	Accountant	F
Mozambique	Instituto de Investigação Agraria de Moçambique	Constantino Sercete	Interim Director of IIAM	M
Mozambique	Eduardo Mondlane University (EMU)	Lucinda De Araujo	Director of Centro de Biotecnologia	F
Mozambique	Centro de Biotecnologia	Juelma Keukai Bucher	Researcher and Lab Technician	F
Mozambique	Eduardo Mondlane University (EMU)	Amelia Melesse	Researcher and Lab Technician	F
Madagascar	Bureau Director General of Sustainable Development /Ampandrianomby	Rivosoa Rabenandrianina	Director General of Sustainable Development (DGDD)	M
Madagascar	Director General of Sustainable Development /Ampandrianomby	Agnès Raherimalala	National Focal Point for Biosafety in Madagascar	F
Madagascar	DGDD/Ampandrianomby	Jerison Ratsialainkery	Project Coordinator	M
Madagascar	Université d'Antananarivo/Faculté des Sciences	Dr HDR Mahandrimanana Andrianainarivelo	Vice-Dean of the Faculty of Sciences of Antananarivo	M
Madagascar	Université d'Antananarivo/Faculté des Sciences	Mijoro Rakotoarinivo	Chef de la Mention Biologie et Ecologie Végétale	M
Madagascar	Université d'Antananarivo/Faculté des Sciences	Tendro Radanielina	Responsable du Laboratoire de Biologie Moléculaire (LBM), Université d'Antananarivo	M
Madagascar	Université d'Antananarivo/Faculté des Sciences	Jenny Rakotonirina	Chef du Laboratoire de Biologie Moléculaire (LBM) Plantes, Université d'Antananarivo	F

List of people met				
Location	Organization	Name	Position	Gender
Madagascar	Université d'Antananarivo/Faculté des Sciences	Minosoa Barphyl Andriamiharisoa	Doctorant du Laboratoire de Biologie Moléculaire (LBM) Plantes, Université d'Antananarivo	M
Madagascar	CNRE/Tsimbazaza	Jean Michel Yves Mong	Directeur du CNRE	M
Madagascar	CNRE/Tsimbazaza	Herizo Randriambanona	Chef de Département Ecosystèmes Terrestres	M
Madagascar	CNRE/Tsimbazaza	Rado Rasolomampianina	Responsable du Laboratoire de Microbiologie au sein de la CNRE	M
Madagascar	CNRE/Tsimbazaza	Hanitrinisoa Harimisa Andriamafana	Responsable du Laboratoire de Microbiologie au sein de la CNRE	F
Madagascar	CNRE/Tsimbazaza	Onja Andriambeloson	Chercheuse du Laboratoire de Microbiologie au sein de la CNRE	F
Madagascar	CNRE	Jean Roger Rakotoarijaona	BCH	M
South Africa	RAEIN-Africa	Doreen Mnyulwa – Shumba	Executive Director/Project Director	F
South Africa	RAEIN-Africa	Shepherd Kapayapundo	Finance and Risk Manager	M
South Africa	RAEIN-Africa	Alice T. Maredza	Ass. Project Manager	F
South Africa	School of Biomedical Sciences Faculty of Health Sciences	Christopher Viljoen Head: School of Biomedical Sciences Faculty of Health Sciences	Head of School of Biomedical Sciences Faculty of Health Sciences Technical Advisor	M
Kenya	UNEP	Solomon Kinuthia	Financial Manager	M
Kenya	UNEP	Paul Vrontamitis	Finance Manager	M
Kenya	UNEP	Alex Owusu-Biney	Task Manager	M
Kenya	UNEP	Johan Robinson	GEF Portfolio Manager	M

Annex 3 List of documents consulted

Project

- Terms of Reference of the Terminal Evaluation (2023)
- UNEP Tools for evaluation
- Mid-Term Review Report (2019)
- Project Document of Multi Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making (MCP-ICLT) (2017)
- Final Report of Multi Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making (MCP-ICLT) (2023)
- Final Project Outputs Summary (2023)
- Monitoring and Evaluation Plan (2018)
- From Anubis:
 - Technical and Financial Reports and Documents
 - Audit Reports

Global

- Cartagena Protocol on Biosafety (CPB)
- Bali Strategic Plan for Technology Support and Capacity- building
- UNEP Medium-term Strategy 2014–2017, “Environment for Development”

Annex 4 Evaluation Framework

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
A. Strategic Relevance: has the MCP-ICLT project done the right things?			
i. Alignment to the UNEP Medium Term Strategy (MTS), Project of Work (PoW) and Strategic Priorities	A1. How well aligned was MCP-ICLT project to the UNEP strategies and priorities?	Degree of alignment with the MTS and PoW, under which the Project was approved, including: The scale and scope of any contributions made to the planned results reflected in the relevant MTS and PoW. Degree of alignment with UNEP strategic priorities, including the Bali Strategic Plan for Technology Support and Capacity Building (BSP) and South-South Cooperation (S-SC).	Desk study; KIIs
ii. Alignment to Donor/GEF/Partner Strategic Priorities	A2. How well aligned MCP-ICLT project was to the Donor/GEF/Partner Strategic Priorities?	The degree to which MCP-ICLT project was suited to or responded to the GEF as expressed in the funding agreement and other donor priorities.	Desk study; KIIs
iii. Relevance to Global, Regional, Sub-regional and National Environmental Priorities	A3. How well aligned MCP-ICLT project was to Global, Regional, Sub-regional and National Environmental Priorities?	Degree of alignment of the MCP-ICLT project: - Global priorities such as the SDGs and Agenda 2030 - UN Development Assistance Frameworks (UNDAF) and CCA - Regional, National development plans - Poverty reduction strategies - Nationally Appropriate Mitigation Action (NAMA) - Needs of the countries Within this section consideration will be given to whether the needs of all beneficiary groups are being met and reflects the current policy priority to leave no one behind.	Desk study; KIIs; Field visits
iv. Complementarity with Relevant Existing Interventions/Coherence	A4. How coherent MCP-ICLT project was with the other relevant interventions?	Degree of how well the activities of MCP-ICLT project took account of ongoing and planned initiatives that address similar needs of the same target groups, including optimizing synergies and avoiding duplication of effort or being implemented by other agencies within the same country, sector or institution. - UNDAF and CCA - UN other programs	Desk study; KIIs Field visits

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
	A5. Did MCP-ICLT project include human rights and gender equality?	Degree to which MCP-ICLT project has applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within these human rights contexts, degree to which MCP-ICLT project adheres to UNEP's Policy and Strategy for Gender Equality and the Environment. Degree to which MCP-ICLT project background/ context included a discussion of appropriate gender-related processes (policies, plans) or trends and links with the Project theme. Whether the Project consulted with gender or marginalized groups in design, implementation, etc. as appropriate. Existence of procedures in lines with gender equality and promotion related activities or specialists; The extent to which gender-related challenges and entry-points were addressed.	Desk study; KIIs
	A6. How well has country ownership been achieved with MCP-ICLT project?	Understand what the level of country ownership was, also considering the management difficulties faced during COVID. How the different stakeholders interacted and how they cooperated.	Desk study; KIIs; Field visits
B. Quality of Project Design: How well was the Project designed?			
V. Evaluate the quality of the project design in all its phases (developed in detail in the next framework)	B1. To what extent was MCP-ICLT project design suitable for achieving the envisaged outcomes in its timeframe?	Follows indicators/criteria and assessment from the Project Design Quality Assessment (PDQA): Final evaluation ratings table (as item B) in the Main Evaluation Report.	Desk study; KIIs
C. Nature of External Context: How did the nature of external context influence MCP-ICLT project?			
VI. The influence of factors external to the project.	C1. How did the nature of external context influence MCP-ICLT project?	Follows indicators/criteria and assessment from the PDQA: Final evaluation ratings table as item C: Rating is established for the Project's external operating context considering - the prevalence of conflict - disasters and shocks (including COVID-19) - political upheaval	Desk study; KIIs; Field visits

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
		- serious economic crises	
D. Effectiveness: Did MCP-ICLT project achieve its results?			
i. Availability of Outputs	D1. Did MCP-ICLT project deliver its Project outputs and milestones towards the intended beneficiaries?	Degree of success in producing the planned outputs (both in terms of quantity and quality); degree of success in achieving the milestones as set out in the Project design document and the UNEP/GEF project/subsidy document for MCP-ICLT project funding. In this case, the ToC and the proposed changes will also be checked, leading to a final version of the ToC.	Desk study; KIs; Field visits
ii. Achievement of Project Outcomes	D2. Did <i>MCP-ICLT project</i> deliver its outcomes?	Degree of success in the achievement of planned outcomes (both in terms of quantity and quality); degree of success in achieving the milestones as set out in the Project design document and the UNEP/GEF project/subsidy document for MCP-ICLT project funding. In this case, the ToC and the proposed changes will also be checked, leading to a final version of the ToC.	Desk study; KIs; Field visits

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
iii. Likelihood of Impact	D3. What difference did MCP-ICLT project make?	The degree or likelihood of the intended, positive impacts becoming a reality; In this case, the ToC and the proposed changes will also be checked, leading to a final version of the ToC.	Desk study; KIs; Field visits
E. Financial Management: Was the Project's financial management functional?			
iv. Evaluate the financial management of the project	E1. Was MCP-ICLT project adherent to UNEP's financial policies and procedures?	The degree of adherence to UNEP's financial policies and procedures (Project and grant managed by UNEP); Degree of the application of proper financial management standards and adherence to UNEP's financial management policies.	Desk study; KIs;
	E2. Was MCP-ICLT Project's financial information complete?	The actual spends across the life of the Project of funds secured from all donors; Whether standard financial documentation is missing, inaccurate, incomplete or unavailable in a timely manner.	Desk study; KIs;
	E3. Was the communication between financial and Project management staff adequate?	The degree of communication between the partners and stakeholders in the project as it relates to the effective delivery of the planned Project and the needs of a responsive, adaptive management approach.	Desk study; KIs;
	E4. Were there any constraints in the financial management?	Any financial management issues that have affected the timely delivery of the Project or the quality of its performance.	Desk study; KIs;
F. Efficiency: Did MCP-ICLT Project conduct its operations in the right (cost-effective) way?			

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
v. Assess the extent to which the project delivered maximum results from the given resources, including an assessment of the cost-effectiveness and timeliness of project execution.	F1. Was MCP-ICLT Project implemented in the most cost-efficient way?	The degree to which the activities under the UNEP ProDoc and GEF funding agreement delivered maximum results from the given resources; The cost-effectiveness and timeliness of execution; Whether the MCP-ICLT project was implemented in the most efficient way compared to alternative interventions or approaches. Degree of efforts made by the Project/project teams during implementation to make use of/build upon pre-existing work to increase efficiency.	Desk study; KIs; Field visits
	F2. Were the MCP-ICLT Project extensions necessary and cost-efficient?	The factors underpinning the need for any Project extensions; Advantages and disadvantages of cost extensions; Degree to which any Project extension could have been avoided through stronger Project management; Existence of any negative impacts caused by Project delays or extensions.	Desk study; KIs
	F3. Did MCP-ICLT PROJECT successfully apply preparation and readiness in its operations? (from criteria I)	Degree to which appropriate measures were taken to either address weaknesses in the MCP-ICLT PROJECT design or respond to changes that took place between project approval, the securing of funds and mobilization; The nature and quality of engagement with stakeholder groups by the Project Team; The confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements.	Desk study; KIs; Field visits
G. Monitoring and Reporting: Did the MCP-ICLT Project succeed in its monitoring and reporting?			

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
i. Monitoring Design and Budgeting	G1. Did MCP-ICLT Project succeed in monitoring design and budgeting?	The existence of a sound monitoring plan, including: - Degree of design to track progress against SMART results towards the provision of the MCP-ICLT Project's outputs and achievement of Project outcomes, - Degree of inclusion of a level disaggregated by gender, marginalization or vulnerability, including those living with disabilities. The degree of relevance and appropriateness of the MCP-ICLT Project indicators used in the project document and grant; The methods used for tracking progress against them as part of conscious results-based management. The degree of quality of the design of the monitoring plan; The funds allocated for its implementation.	Desk study; KIs
ii. Monitoring of Project Implementation	G2. Did MCP-ICLT Project succeed in monitoring of implementation?	Assessment of the quality of the monitoring design against the ToC and the implementation of the project's monitoring system. Degree of the monitoring system's operational level, including. - Degree to which it facilitated the timely tracking of results and progress towards MCP-ICLT Project objectives throughout the Project implementation period; - Degree to which the MCP-ICLT Project gathered relevant and good quality baseline data that is accurately and appropriately documented. The quality of the information generated by the monitoring system during the project implementation, including. - How it was used to adapt and improve Project execution, achievement of outcomes and ensure sustainability. Degree to which the funds allocated for monitoring were used to support this activity. Were they enough?	Desk study; KIs; Field visits

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
		Degree to which the previous evaluations' and assessments recommendations were effectively monitored and implemented	
iii. Project Reporting	G3. Did MCP-ICLT Project succeed in reporting?	The degree to which reporting commitments to UNEP and the GEF have been fulfilled. Degree to which reporting has been carried out with respect to the effects of MCP-ICLT Project on disaggregated groups; Whether monitoring and reporting reflected gender- differentiated achievements/challenges; Whether the intentions assessed with the gender marker score were, in fact, included in monitoring practices and implemented. Whether additional requirements to report regularly were required and met by the Project team/countries.	Desk study; KIs
H. Sustainability: Are the changes estimated to last?			
i. Socio-political Sustainability	H1. Did MCP-ICLT Project achieve socio-political sustainability?	The degree to which social or political factors support the continuation and further development of the benefits derived from MCP-ICLT Project outcomes; The degree of ownership, interest and commitment among government and other stakeholders to take the MCP-ICLT Project achievements forwards. Whether capacity development efforts are likely to be sustained (priority interest).	Desk study; KIs; Field visits
ii. Financial Sustainability	H2. Did MCP-ICLT Project achieve financial sustainability?	The degree to which both MCP-ICLT Project outcomes and the outcomes specified in the GEF grant are dependent on future funding for the benefits they bring to be sustained.	Desk study; KIs

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
iii. Institutional Sustainability	H3. Did MCP-ICLT Project achieve institutional sustainability?	The degree to which the sustainability of MCP-ICLT Project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance; Whether institutional achievements (such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc.) are robust enough to continue delivering the benefits associated with the MCP-ICLT Project outcomes after MCP-ICLT Project closure; Whether institutional capacity development efforts are likely to be sustained.	Desk study; KIs; Field visits
I. Factors Affecting Project Performance and Cross-Cutting Issues: How was the project implemented throughout?			
i. Preparation and Readiness	I1. Did appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation?	The degree of project implementation from the preparation phase to the actual start of activities in order to understand its efficiency and initial implementation, considering also the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements	Desk study; KIs
ii. Quality of Project Management and Supervision	I2. Did the MCP-ICLT Project successfully apply Quality of Project Management and Supervision in its operations?	The effectiveness of Project management with regards to: - providing leadership towards achieving the planned Project outcomes; - managing team structures. maintaining productive partner relationships (including Steering Groups, etc.); - maintaining Project relevance within changing external and strategic contexts; - communication and collaboration with UNEP colleagues; - risk management; - use of problem-solving; - Project adaptation and overall execution. - Evidence of adaptive management should be highlighted.	Desk study; KIs

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
iii. Stakeholder Participation and Cooperation	I3. Did the the MCP-ICLT Project successfully apply Stakeholder Participation and Cooperation in its operations?	The quality and effectiveness of all forms of communication and consultation with stakeholders throughout the the MCP-ICLT Project life; The support given to maximize collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise; The inclusion and participation of all differentiated groups, including gender groups.	Desk study; KIIs; Field visits
iv. Responsiveness to Human Rights and Gender Equality	I4. Did has the Project applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People?	The degree to which the project adhered to UNEP's gender equality and environment policy and strategy. How were these measures effectively ensured? Considering: What extent project-implementation and monitoring have taken into consideration: (i) possible inequalities (especially those related to gender) in access to, and the control over, natural resources; (ii) specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and (iii) the role of disadvantaged groups (especially those related to gender) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation.	Desk study; KIIs; Field visits

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
v. Environmental and Social Safeguards	I5. Did MCP-ICLT Project successfully apply Environmental and Social Safeguards in its operations?	Whether UNEP requirements were met to: - review risk ratings on a regular basis; - monitor MCP-ICLT Project implementation for possible safeguard issues; - respond (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and report on the implementation of safeguard management measures taken. Degree to which any issues arising from the MCP-ICLT Project environmental/ risk assessment impact in relation to gender and marginalized groups were integrated. The extent to which the management of the MCP-ICLT Project - minimized UNEP's environmental footprint.	Desk study; KIIs; Field visits
vi. Country Ownership and Driven-ness	I6. Did MCP-ICLT Project successfully apply Country Ownership and Driven-ness in its operations?	The quality and degree of engagement of government / public sector agencies in the project and that is necessary for long-lasting impact to be realized, focusing on: • moving forwards from outputs to project outcomes or, • moving forward from project outcomes towards intermediate states • All gender and marginalized groups.	Desk study; KIIs; Field visits

Evaluation Criteria (to which rating applies)	Evaluation sub-questions (Key and starting question)	Judgement criteria / Indicators	Data sources
vii. Communication and Public Awareness	17. Did MCP-ICLT Project successfully apply Communication and Public Awareness in its operations?	The degree of effectiveness of: • Communication of learning and experience sharing between MCP-ICLT Project partners and interested groups arising from the project during its life and • Public awareness activities that were undertaken during the implementation of the MCP-ICLT Project to influence attitudes or shape behaviour among wider communities and civil society at large. Degree to which existing communication channels and networks were used effectively, including • Meeting the differentiated needs of gendered or marginalized groups, • Whether any feedback channels were established. Degree to which knowledge sharing platforms have been established under the Project, and if so, the sustainability of the communication channel under either socio-political, institutional, or financial sustainability, as appropriate.	Desk study; KIs; Field visits

Annex 5 GEF portal inputs

The following table contains text to be uploaded to the GEF Portal. **It is drawn from the Evaluation Report, either as copied or summarised text.** In each case, references are provided for the paragraphs and pages of the report from which the responses have been copied or summarised.

Table II: GEF portal inputs

Question: What was the performance at the project's completion against Core Indicator Targets? (For projects approved prior to GEF-7 ²³ , these indicators will be identified retrospectively and comments on performance provided ²⁴).
Response: <i>(Might be drawn from Monitoring and Reporting section)</i> The MCP-ICLT/LMO project demonstrated satisfactory performance against Core Indicator Targets, specifically focusing on Core Indicator Target BD 3: Implementation of the Cartagena Protocol on Biosafety. The project was successful in building and strengthening institutional and human capacities for LMO detection, which was essential for the implementation of the Cartagena Protocol. This included the establishment of well-equipped laboratories and the training of personnel, significantly enhancing the biosafety decision-making processes in the participating countries. The project's monitoring framework was designed with SMART (Specific, Measurable, Achievable, Relevant, Time-bound) indicators, ensuring measurable outcomes. Over 13.18% of the total project funds were allocated specifically to monitoring activities (Paragraph 236, Page 73). Implementation monitoring was operational and facilitated the timely tracking of results and progress towards project objectives. This was supported by a detailed work plan requiring biannual reporting from country focal points. Reports were compiled locally with RAEIN-Africa's support and translated into English, ensuring timely and relevant data collection and analysis (Paragraph 237, Page 73). Detailed biannual reports submitted by focal points were crucial for maintaining accountability and transparency. These reports were instrumental in tracking progress against the project's goals and were vital for the GEF Project Implementation Reports (Paragraph 238, Page 73).

²³ The GEF is currently operating under the seventh replenishment period of the GEF Trust Fund covering the period July 1, 2018 to June 30, 2022. The GEF Portal Reporting Guide for FY20 Reporting Process indicates that GEF-6 projects that have yet to map existing indicators to GEF-7 Core Indicators need to do so at MTR stage or (if already there) at the time of the TE. (i.e. not GEF projects approved before GEF-6)

²⁴ This is not applicable for Enabling Activities

Overall, the robust monitoring framework and effective reporting mechanisms contributed significantly to the project's success in achieving its objectives, particularly in enhancing capacities for LMO detection and compliance with the Cartagena Protocol on Biosafety.

Question: What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

Response: *(Might be drawn from Factors Affecting Performance section)*

The engagement of stakeholders in the MCP-ICLT/LMO project evolved significantly from the Mid-Term Review 2019 (MTR) to project completion, with several progress points, challenges, and outcomes identified:

Improved stakeholder integration: The project successfully integrated a wide range of stakeholders, including government ministries, academia, laboratories, and research institutes. This integration was facilitated through regular consultations and extensive training programs, which enhanced stakeholder engagement and collaboration (resumed from paragraph 98).

Adaptive management during COVID-19: During the COVID-19 pandemic, the project adapted by maintaining strong collaborative ties with technical advisors from Southern Africa. This support ensured the continuity of project activities despite the challenges posed by the pandemic (resumed from paragraph 266).

Challenges:

- Logistical constraints: The project faced logistical challenges that limited direct meetings with the National Project Steering Committee and other stakeholders. This was compounded by procedural requirements that restricted access to the committee (resumed from paragraph 266, paragraph 260).
- COVID-19 impact: The pandemic created significant disruptions, including health crises among key personnel and logistical issues. The project had to rapidly adjust timelines and reallocate resources to maintain momentum despite these challenges (resumed from paragraph 261).
- Language barriers: Effective communication was hindered by language barriers, particularly the absence of Portuguese or French-speaking staff within RAEIN-Africa, which impacted engagement with key institutions and stakeholders in Angola and other regions (resumed from paragraph 271)

Outcomes:

- Enhanced female participation: The project successfully involved a significant number of women, particularly those with high educational backgrounds, in key roles. This not only promoted gender

equity but also challenged traditional gender norms in the scientific community (resumed from paragraph 266, paragraph 267). • Capacity building: Extensive training provided to laboratory staff improved technical expertise and institutional capacities for LMO detection and biosafety decision-making. This enhanced the project's sustainability by ensuring that trained individuals could support ongoing biosafety efforts (resumed from paragraph 276).
Question: What were the completed gender-responsive measures and, if applicable, actual gender result areas? <i>(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)</i>
Response: <i>(Might be drawn from Factors Affecting Performance section)</i> The MCP-ICLT/LMO project implemented several gender-responsive measures and achieved notable gender result areas. The project successfully involved women at various levels, particularly those with high educational backgrounds, promoting gender equity within the scientific community. This strategic inclusion helped break down barriers to female participation in science and technology fields, particularly in the context of GMOs. By empowering educated women to lead and participate in critical project activities, the project contributed to challenging gender norms and promoting equality within the scientific community and broader society (Paragraph 266, Page 78). During the COVID-19 pandemic, the MCP-ICLT/LMO project faced significant human and logistical challenges, including the illness and loss of key personnel. In response, the project upheld the human rights of its participants by ensuring that affected staff received the necessary support and respect during their recovery and mourning periods. This approach adhered to ethical standards and helped maintain the dignity and well-being of all project members, aligning with broader human rights principles (Paragraph 266, Page 78). Efforts were made to accommodate individuals dealing with personal losses or health issues, demonstrating a human-centered approach to project management. This responsiveness ensured the continuity of the project under adverse conditions and reinforced the project's commitment to supporting its workforce in times of crisis (Paragraph 266, Page 78).
Question: What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. <i>(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)</i>
Response: <i>(Might be drawn from Factors Affecting Performance section)</i>

The project adhered to the environmental and social safeguards requirements outlined by UNEP, conducting continuous risk assessments to ensure compliance and address emerging issues proactively (resumed from paragraph 271).
Question: What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? <i>(This should be based on the documentation approved at CEO Endorsement/Approval)</i>
Response: <i>(Might be drawn from Factors Affecting Performance section)</i> The MCP-ICLT/LMO project faced several challenges and achieved notable outcomes regarding its Knowledge Management Approach. The project developed various mechanisms and approaches, using online platform (ANUBIS) and distance learning and training, which were crucial for maintaining engagement, especially during the COVID-19 pandemic. In fact, numerous Knowledge Products and Events, including online workshops and training sessions, were organized to build stakeholder capacities and disseminate best practices. (Paragraph 270, Page 79). Despite challenges in reaching a broad audience and overcoming language barriers, the MCP-ICLT/LMO project implemented a robust Communication Strategy using regular updates, newsletters, and digital tools to keep stakeholders informed (Paragraph 271, Page 79). Several lessons learned and good practices were documented, emphasizing the importance of stakeholder engagement, continuous capacity building, and adaptive management in response to challenges like the COVID-19 pandemic. At the same time, adjusting timelines, reallocating resources, and adopting remote working and virtual communication tools has been implemented to maintain project activities during the pandemic (Paragraph 266, Page 78).
Question: What are the main findings of the evaluation?
Response: The main findings of the evaluation for the MCP-ICLT/LMO Project are as follows:

- Strategic relevance: The project was highly relevant to the participating countries' needs and aligned with the GEF strategic objective BD3, focusing on capacity building for the implementation of the Cartagena Protocol on Biosafety. The project's objectives were in line with national priorities and international commitments to biosafety (Paragraph 13).
- Effectiveness: The project achieved its intended outcomes by strengthening institutional and human capacities for LMO detection in the participating countries. The establishment of well-equipped laboratories and the training of personnel significantly improved the biosafety decision-making processes (Paragraph 14).
- Efficiency: The project was implemented efficiently, with effective management and coordination by RAEIN-Africa and UNEP. Despite challenges such as delays in instrument delivery and disruptions caused by the COVID-19 pandemic, the project adapted well and maintained progress (Paragraph 16).
- Sustainability: The sustainability of the project's outcomes varied among the participating countries. While countries like Malawi and Mozambique showed strong commitment and institutional support for ongoing biosafety efforts, others like DRC and Angola faced socio-political challenges that hindered sustained engagement (Paragraph 20).
- Stakeholder engagement: The project successfully engaged a wide range of stakeholders, including government ministries, academic institutions, and laboratories. However, logistical challenges and language barriers occasionally hindered effective communication and participation (Paragraph 23).
- Gender and human rights: The project promoted gender equity by involving women in key roles and ensuring their participation in project activities. It also upheld human rights by supporting affected personnel during the COVID-19 pandemic and maintaining a human-centered approach to project management (Paragraph 26).
- Knowledge management: The project developed various knowledge products and platforms to facilitate information sharing and capacity building. Workshops, seminars, and online platforms played a crucial role in disseminating best practices and lessons learned among stakeholders (Paragraph 17).
- Challenges: The main challenges included logistical constraints, socio-political issues in certain countries, and the impact of the COVID-19 pandemic. The project management demonstrated flexibility and resilience in addressing these challenges, ensuring the continuity and success of the project (Paragraph 22).

Annex 6 Brief CVs of the consultants

Principal Evaluator

Name: Federica Pilia

Nationality: Italian

Email: federicapilia@hotmail.it

Education: Master's degree in Political Science;
Master's degree II level in Public Governance;
PhD in Territory, Risk and Public Policies (in progress)

Languages: Italian, Portuguese, English and French

Date (from– to)	Location	Company	Position
January 2024 – June 2024	Home based and Angola	CODESPA	Project Management Specialist
December 2023 – January 2024	Home based	Oxfam Ireland	Consultancy to Support the Proposal Development for a EU Grant
October 2023 – May 2024	Homebased + field missions	UNEP	Principal Consultant for Final Evaluation
July 2023 – October 2023	Home-based and Cape Verde	COOPERMONDO	Team Leader for Final Evaluation Project
May 2023 – June	Home-based and São Tomé and Príncipe	COATL for TESE	Consultant for Project Proposal
December 2022 – June 2023	Home-based	UNDP Mozambique	Senior Researcher
August 2022 – January 2025	Home-based and Angola	FEC	Consultant in Environment and Human Rights for the Project USAKI
August 2022 – June 2026	Home-based and Angola	Università degli Studi di Firenze	Consultant as Project Manager for RE-FARM Project
May 2022 – October 2022	Home-based and Mozambique	PLAN EVAL and UNICEF	Social Protection Specialist for Evaluation Cash Transfer Programme
April 2022 – on going	Italy	Università degli Studi di Sassari	Associate Professor
May 2021 – May 2022	Home-based and Mozambique	UNDP Mozambico	Senior International Specialist for Human Impact Assessment of COVID-19
May 2021 – July 2021	Home-based and Angola	VIS Angola	Team Leader - Senior Evaluator of the European Union Project
December 2020 – May 2021	Home-based and Cape Verde	UNDP Cape Verde	Senior International Consultant for PDNA Adaptation

Date (from– to)	Location	Company	Position
November 2020 – April 2021	Home-based and Angola	FEC	Consultant for Proposal Writing
August 2020 - December 2020	Home-based Angola and Mozambique	Good Shepherd International Foundation	Portuguese Speaking Facilitator of the Child Safeguarding online training
August 2020 – December 2020	Angola – Home-based	PLAN EVAL and UNICEF	Field Research Coordinator
April 2020 – to July 2020	Guinea-Bissau And Home-based	UNDP Guinea-Bissau	Senior International Consultant
April 2020 - to July 2020	Angola – Home-based	PLAN EVAL and UNICEF	Lead Consultant
October 2019 - February 2020	Cabo Verde	UNDP NY	International Consultant
September 2019 – October 2019	Home-based	FEC	Consultant for Proposal Writing
June 2019 – October 2019	Home-based and Angola	CESO Development Consultants	International Consultant for FRESAN Implementation
December 2018 – February 2019	Home-based and Angola	Good Shepherd International Foundation ONLUS	Institutional Strategic Planning Consultant
September 2018 – August 2019	Home-based Guiné-Bissau	WFP Guiné-Bissau	Senior Research Consultant for KAP Study
August – September 2018	Home-based	FEC	International Consultant
May 2018 – July 2018	Angola and Home-based	United Nations Angola	CCA International Consultant
From February 2018 to May 2018	Cabo Verde	UNDP	Resilience Senior Consultant
From August 2017 to June 2018	Home based with field missions in Angola	UNICEF	Social Policy International Consultant
From June 2017 to July 2017	Home based	FEC	Consultant for EU Project Writing
From May 2016 to September 2017	Angola	UNDP	Resilient Recovery Consultant
From May 2016 to June 2016	Home based	FEC	Consultant for EU Project Proposal
From September 2016 July 2017	Home based	Congregação das Servas de Nossa Senhora de	Project Proposal Writer

Date (from– to)	Location	Company	Position
From September 2016 to November 2016	Home based	Oxfam Italia	Consultant for Humanitarian Tools Desk Review
From November 2015 to February 2016	Benguela, Angola	CIES	International Consultant for the Research on Early Child Marriage
From June 2015 to December 2015	Luanda, Angola	UNDP	International Consultant for Resilient Recovery
From June 2015 to August 2015	Benguela, Angola	CIES	Consultant for Social Research in Angola
From March 2015 to June 2015	Benguela, Angola	CIES	Social Protection Services' Research – International Consultant
From February 2015 – August 2015	Luanda, Angola	UNICEF	International Consultant for Social Assistance
From September 2014 – December 2015	Luanda – Angola	FEC	Program Coordinator Angola – Part-time Consultant
From October 2014 to December 2014	Luanda – Angola	CIES	Social Protection Services' Research - International Consultant
From June 2014 to October 2014	Luanda - Angola	United Nations - UNDP	Building resilience strategy consultant
From May 2012 – March 2014	Luanda – Angola	Oxfam GB	Humanitarian Program Coordinator
From Janeiro 2011 to December 2011	Luanda – Angola	CARE INTERNATIONAL	Monitoring and Evaluation Consultant
From February 2009 to December 2010	Luanda – Angola	CARE INTERNATIONAL	Technical Advisor into HIV/AIDS Mainstreaming on Livelihoods and Security Food
From October 2007 to December 2008	Luena (Moxico) Angola	VIS International	Project Manager – Sub-office Administrator
From September 2006 to September 2007	Luena (Moxico) Angola	Vides International	Project Manager

Evaluation Specialist

Family name:	Kauppaymuthoo	First Name:	Vassen	DoB:	26 November, 1971	Nationality:	Mauritius
Qualifications:	LLB Bachelor of Laws	University of London 2017	MSc Oceanography (Masters in Science)	University of Quebec, Canada 1997	Environmental Engineer (Masters in Science)	Ecole des Mines, France 1994	

Language skills: Fluency in English, French and Creole

Membership of

professional bodies: Since 2014: Member of the Royal Society of Arts and Sciences (Founded 1829) ;Since 2013: Member of the International Association of Water Law; Since 2010: Founder and President of the NGO Oceanyka (environment and marine biodiversity); 2002: Western Indian Ocean Marine Science Association; 2002: United Nations Development Programme Sharing Reef Knowledge Network; 1999: Institute of Engineers of Mauritius 1997: Council of Registered Professional Environmental Engineers of Mauritius

Other skills: United Nations Environment Programme Evaluation Specialist; Registered trainer with the Mauritius Qualifications Authority in environment and oceanography; Professional diver; Qualified skipper; Canada Private Pilot Licence holder; Computer literate including Microsoft Word, Excel, Power Point, Outlook Express.

Key qualifications:

- 28 years of practice and experience as Registered Professional Environmental Engineer, Qualified Oceanographer and Lawyer in a Small Island Developing State (Mauritius), the Southwestern Indian Ocean and Africa including the policy and strategy development in the fields of blue economy, environmental and biodiversity, conservation and preservation of the environment through the drawing up of Environmental Impact Assessment Reports, Environmental Monitoring Plans, marine biodiversity surveys, marine pollution surveys and community work, participating in committees for planning and development of institutional and legal frameworks and planning guidelines, environmentally sensitive areas, ICZM Plans and ecosystem-based approaches in the context of climate change
- Proven experience in preparation of policies, strategies, laws, regulations: review of policies, strategies, laws and regulations as LLB Holder for Environmentally Sensitive Areas in Mauritius and Rodrigues and for the Climate Change Adaptation and Mitigation Measures/Climate Change Vulnerability Assessment for the Government of Mauritius, drawing up of a tourism carrying capacity and Strategic Environmental Assessment for Mauritius and Rodrigues
- Regional experience in Southwestern Indian Ocean including Mauritius, Rodrigues, Seychelles, Madagascar, Reunion, Comoros, Kenya, Tanzania/Zanzibar as regional coordinator for the Indian Ocean Commission in the context of the Western Indian Ocean Coastal Challenge (EU Funded project) and Continental Africa and Small Island Developing State experience including Sao Tome and Principe, Guinee Bissau, Cape Verde, Senegal and Mauritius, Rodrigues, Seychelles, Madagascar, Reunion, Comoros in the context of the application of the African Union Strategy on Blue Economy for the International Labour Organisation and NORAD
- Continental Africa/SADC experience including Angola, Lesotho, Malawi, Mozambique, Democratic Republic of Congo and Madagascar as Terminal Evaluation Specialist of the United Nations Environment Programme/GEF Project: "Multi country project to strengthen institutional capacity on LMO testing in support of national decision making" – GEF ID 5283

Professional experience:

Dates (from-to)	Location	Organisation	Position	Description
12/2023-05/2024	Ang, DRC, Les, Mad, Mal & Moz	UNEP	Evaluation Specialist	Terminal Evaluation Specialist of the United Nations Environment Programme/GEF Project: "Multi country project to strengthen institutional capacity on LMO testing in support of national decision making" – GEF ID 5283.
09/2023-11/2023	Mauritius	UNEP	Senior Consultant- Oil Spill Cont. Plan Expert	Finalisation of the Updated National Oil Spill Contingency Plan of the Republic of Mauritius
09/2022-04/2023	Tanzania/Zanzibar	EU	Lead Consultant Blue Economy Expert	Assess the capacity and potential of the blue economy SME sector in Tanzania and determine the appropriate instrument(s) and technical assistance to support private sector investments in the blue economy in Tanzania including Zanzibar archipelago.
08/2022-01/2023	Mauritius and Seychelles	ILO	National Consultant	Implementation SDG-Fund project Mauritius and Seychelles, United Nations agencies. Planning, coordination, monitoring, and reporting of activities ILO's. <i>Provide support to the CO-Antananarivo and ILO Specialists.</i>
09-12/2021	Continental Africa and SIDS	NORAD/AU	International Consultant Blue Economy	Identify relevant thematic and geographical priorities in a strategic and long-term cooperation with Norway at sea Map relevant actors, their competence and capacity, how they relate to each other, and facilitate good donor coordination

Dates (from-to)	Location	Organisation	Position	Description
09-12/2021	Mau, Rod, Sey, Com, Mad, Reu, Cap V, Gui Bis, Sen & STP	ILO	International Consultant and Regional Coordinator	Coordination and Development of the activities in the field of Blue Economy for African Island States based on the African Union Strategy on Blue Economy; Implementation of the Abidjan Declaration; Development of a Blue Economy Planning and Strategy for African Island States including marine pollution; Capacity Building
05/2021-12/2021	Mauritius and Rodrigues	UNDP/GEF	Local Coordinator and Team Leader/Expert	Study on the Carrying Capacity of the Lagoons of the Republic of Mauritius and Development of a Strategic Environmental Assessment for the Integrated Coastal Zone Management Plans of Black River and Rodrigues.
06/2021	Mauritius	AFD	Local coordinator and Expert	ADAPTATION Final Project Review and Evaluation. Project capitalisation with detailed assessment of the project objectives, deliverables, consultants and institutions and site visits.
08/2020-08/2021	Mauritius	Oceanyka-UNDP/GEF	Project Scientific Director	Implementation of Sustainable Livelihood Projects for Marine Protected Areas by NGOs in the Republic of Mauritius to reduce the human pressure on the marine environment and cater for marine pollution.
2019	Mauritius	AFD	Environmental and Oceanography Expert	Environmental Monitoring Planning and Execution for Climate Change Adaptation Coastal Protection Project including social and gender impact assessment including blue economy
09/2018-06/2021	Mauritius	AFD	Environmental and social expert	Drawing up of a Land Drainage Master Plan for the Republic of Mauritius. Evaluation of drainage systems impacts, risk management and ecosystem-based solutions. Environmental and social assessment & vulnerability assessment.
09/2018-03/2021	Mauritius	UNDP / GEF ME & MOBE	Team Leader / Coordinator / Coastal Zone Management and Legal Expert	Mainstreaming Biodiversity in the Republic of Mauritius (SIDS): Review and Update of ESA Data, Maps, Policy and Management Recommendations; Review of Environmentally Sensitive Areas and ICZM Planning: Analytical Review of CZM Plans ; Development of ICZM Plans; Institutional and Governance Arrangement for MPA Management
09/2018-12/2019	Mauritius	AFD	Team Leader- CCVA/RA	Enhancing Resilience to Climate Change in the Republic of Mauritius (SIDS) including social impact assessment;
2017	France	Univ of Paris I Pantheon Sorbonne	Lecturer	LLM Module- Lecture on Environmental Legislation and its Applications. Lecture on environmental impact assessments and blue economy as a new pillar for the economy of small islands
04-12/2017	Sey, Mau, Com, Mad, Tan, Moz, Ken	IOC / EU	Regional Coordinator of the WIOCC	In support for the implementation of the Mauritius Strategy for SIDS in the ESA-IO region - Phase II (ISLANDS II) covering Mauritius, Seychelles, Zanzibar, Madagascar and Comoros:
2016-2017	Mauritius	PMO / World Bank / TNC	Marine Environment Expert	Preparation of the African Inter Ministerial Conference on Ocean Economies and Climate Change and Marine Spatial Planning Report for the Republic of Mauritius in the context of the development of blue economy in the region
2016-2017	Mauritius	SOFRECO / AFD / MCCI	Environmental Expert	Contributed in the study and then direct support to the Chamber of Commerce to implement first steps of the roadmap for setting up and operating an economically sustainable and effective E-Waste management system in Mauritius
2015-2017	Mauritius	Ministry of Environment,	Environmental Expert	With Disaster and Beach Management and the International Organization for Migration of the United Nations development of Policy Paper on Migration, Environment and Climate Change & the importance of blue economy to act as new pillar
2015	Mauritius	National Ocean Council	Environmental Expert	Working group on Environment Protection, Governance and Sustainable Development
2014-2017	Mauritius	MCB Forward Foundation	Environmental Expert & Oceanographer	Development of blue economy community project in the context of a social integration project. Environmental and Oceanographic Assessment of Agalega.
2000-2017	Mauritius	Delphinium Ltd.	Dir, Env. Eng, Oceanogr.	Direct, organise, coordinate and manage the work of the company
01 to 12/2014	Mauritius	Ocean Eco. Comm.	Chairman	Setting up the strategy for the setting up of a specific Ministry of Ocean Economy regrouping ocean related matters, and the sustainable development of ocean.
01 to 12/2013	Mauritius	Greenpeace	Local Coordinator	Preparation and local coordination for the Greenpeace Indian Ocean Tour 2013

Dates (from-to)	Location	Organisation	Position	Description
2011-2012	Mauritius	Ministry of Tourism	Advisor to Committee	Preparation of regulations concerning dolphin watching activities.
01 to 12/2011	Mauritius	JICA	Local coordinator	Project monitoring and evaluation « Environmental Sanitation Project of Montagne Jacquot Sea Outfall » financed by the Government of Japan (50 million USD)
2011	Mauritius	BBC	Oceanographer	Simon Reeve Indian Ocean Series TV programme with a particular focus on the fishing sector, the protection of our marine resources and the Chagos archipelago.
2011	Mauritius	Lagon Bleu Eco Sud	Marine Environment Expert	Detailed study of the Blue Bay Marine Park in Mauritius evaluation of the state of the biodiversity and remedial measures to be taken to protect same to protect tourism as a main pillar of the blue economy sector
2010	Mauritius	Reuters / Globe and Mail	Marine Environment Expert	Publication on the state of the coral reefs and the impact of tourism as well as the remedial measures to be taken to protect our marine environment.
2009	Mauritius	EJF	Marine Environment Expert	Report on IUU fishing and the seafood hub of the Republic of Mauritius in the context of blue economy
01 to 12/2008	Mauritius and Namibia	Commonwealth Foundation	Oceanographer	Civil society report and presentation of findings during an African Union Interministerial Meeting in Namibia; Propose development avenues for blue economy in the region
01 to 12/2008	Tanzania, Moz. & Mauritius	Commonwealth Foundation	Coordinator	Study tours and site surveys concerning small-scale fishermen in Tanzania, Mozambique and Mauritius to develop coastal community blue economy components
01 to 12/2007	Mauritius	Ministry of Fisheries	Oceanographer and Environmental Consultant	Evaluation of a new law on aquaculture and fisheries (« Aquatic Business Activities Bill ») in the context of the development of blue economy in Mauritius
06/2005	Philippines	UNDP	Oceanographer and Environmental Consultant	Project evaluation « Bohol Marine Triangle Project (BMTP) » in the context of the protection of marine biodiversity assets within the framework of blue economy
11/2000-03/2004	Mauritius and Rodrigues	UNDP	National Environment Consultant	Drafting of a Global Environment Facility (GEF) MSP project document and project brief entitled: "Partnerships for Marine Protected Areas in Mauritius and Rodrigues" USD 4.5 million

TERMS OF REFERENCE

**Terminal Evaluation of the UNEP/GEF project
“Multi country project to strengthen institutional capacity on LMO testing in support of
national decision making” – GEF ID 5283”**

Section 1: PROJECT BACKGROUND AND OVERVIEW

1. Project General Information

Table 1. Project summary

GEF Project ID:	5283		
Implementing Agency:	UNEP	Executing Agency:	Regional Agricultural and Environmental Innovations Network-Africa (RAEIN-Africa)
Relevant SDG(s) and indicator(s):	Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture. Target: 2.5 - By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels [BIOSAFETY], and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed. Indicator - 2.5.1: Number of plant and animal genetic resources for food and agriculture secured in either medium or long term conservation facilities. Indicator - 2.5.2: Proportion of local breeds, classified as being at risk, not-at-risk or unknown level of risk of extinction.		
GEF Core Indicator Targets (identify these for projects approved prior to GEF-7²⁵)	BD 3: Implementation of the Cartagena Protocol on Biosafety		
Sub-programme:	Healthy and Productive Ecosystems (SP3) Environmental Governance (SP4)	Expected Accomplishment(s):	EA(a) The health and productivity of marine, freshwater and terrestrial ecosystems are institutionalized in education, monitoring and cross-sector and transboundary collaboration frameworks at the national and international levels. EA (b): Institutional capacities and policy and/or legal frameworks enhanced to achieve internationally agreed environmental goals, including the 2030 Agenda for Sustainable Development and the Sustainable Development Goals.
UNEP approval date:	30 May 2017	Programme of Work Output(s):	Institutional capacity and harmonised networks to support management of transboundary movement of Living Modified Organisms.

²⁵ This does not apply for Enabling Activities

GEF approval date:	05 December 2016	Project type:	Full Size Project	
GEF Operational Programme #:	GEF V	Focal Area(s):	Biodiversity	
		GEF Strategic Priority:	BD3	
Expected start date:	1 June 2017	Actual start date:	1 July 2017	
Planned operational completion date:	29 December 2021	Actual operational completion date:	30 December 2022	
Planned project budget at approval:	USD10,406,752	Actual total expenditures reported as of 31 December 2022:	USD10, 346,751.86	
GEF grant allocation:	USD3,860,000	GEF grant expenditures reported as of 23 May 2023:	USD3,800 000	
Project Preparation Grant - GEF financing:	USD115,000	Project Preparation Grant - co-financing:	USD115,000	
Expected Full-Size Project co-financing:	USD 6,546,752	Secured Full-Size Project co-financing:	USD6,546,752	
Date of first disbursement:	01 July 2017	Planned date of financial closure:	30 June 2023	
No. of formal project revisions:	5	Date of last approved project revision:	29 June 2022	
No. of Regional Steering Committee meetings:	6	Date of last/next Steering Committee meeting:	Last: 26 June 2022	Next:
Mid-term Review (planned date):	April 2019	Mid-term Review/ (actual date):	May 2019	
Terminal Evaluation (planned date):	June 2023	Terminal Evaluation (actual date):	July 2023	
Coverage - Countries:	Angola, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mozambique	Coverage - Region:	Africa (Southern Africa)	
Dates of previous project phases:	N/A	Status of future project phases:	GEF ID 10584 (FSP) – Strengthening the Implementation of National Biosafety Frameworks in Southern Africa (SINBF) [DRC, Madagascar, Namibia] - CEO Endorsed, Internationalisation completed, first cash advance approved for UNON to disburse. https://www.thegef.org/projects-operations/projects/10584	

2. Project Rationale

1. Entry into Force of the Cartagena Protocol on Biosafety (CPB) on the 11th of September 2003 meant that it was legally binding internationally and in the legal systems of all Parties to the Protocol. Parties are therefore obliged to comply with, and implement, all provisions of the Protocol.
2. To implement the provisions of the CPB efficiently and abide by its general provision as provided for in Article 2 of the CPB and the protocol objective meant to ensure safe handling, transport and use of living modified organisms (LMOs), and countries would need to have capacity for LMO detection. It was imperative, therefore, that all countries would have the basic infrastructure and technical capacity, including equipment, tools and practical know-how to identify and quantify LMOs to fulfill their obligations.
3. The project was related to earlier UNEP/GEF projects on Implementation of National Biosafety Frameworks and the Biosafety Clearing House in Democratic Republic of the Congo (DRC), Madagascar, Malawi, Mozambique and Lesotho. Enhancing LMO Detection capacity was expected to help strengthen decision making processes; generate information on LMOs that could be reposted on the Biosafety Clearing House and contribute to awareness creation on the importance and urgency for legal instruments and regulations for management of safe handling, transfer and use of LMOs.
4. Information on LMOs and biosafety was expected to assist decision makers in countries around the world, as well as civil society and the biotechnology industry in decision making, risk assessment and risk management, monitoring and surveillance. Laboratories were to enhance their capacity for LMO detection and the laboratories were to provide tools and play an important role in ensuring traceability and segregation; compliance with National regulations in terms of labelling; compliance with international regulations for trade; monitoring and surveillance, and management of illegal transboundary movements to ensure compliance with regulations at all levels to support decision making. Furthermore, the implementation of the project was meant to contribute to the CBD Strategic plan for biodiversity 2011-2020, specifically to the Aichi Target 13, as effective implementation of the CPB would help address the need for safeguarding of ecosystems and genetic diversity, and promote sustainable use.

3. Project Results Framework

5. The project purpose was to contribute to ensuring an adequate level of protection in the field of safe transfer, handling, transport and use of LMOs resulting from LMOs that could have adverse effects on the conservation and sustainable use of biological diversity, also taking into account risks to human health, and specifically focusing on transboundary movements.
6. The objective was to build and strengthen institutional and human capacities for LMO detection in support of national biosafety decision making processes in selected Southern African countries.
7. The focus was to build capacities in six countries: Angola, DRC, Lesotho, Madagascar, Malawi and Mozambique.

Table 2: Status of development of National Biosafety Frameworks in the six participating countries

Status of biosafety	Countries
Only interim measures in place	Angola
Domestic regulatory framework partially in place	DRC, Lesotho, Madagascar and Mozambique
Domestic regulatory framework fully in place	Malawi

Source: Prodoc, pp. 28-29

8. The results framework consisted at design of six components of which four were outcome components (highlighted in blue as emphasized for the evaluation) and components 5 and 6 referred to monitoring and evaluation and project coordination and management as presented in Table 3 below.
9. A project implementation plan for the regional and national levels was included in the Project Document.²⁶
10. The logical framework listed project component with outcomes, outcome targets, targets and monitoring milestones as well as means of verification.

Table 3: Project Results framework

Project Component	Project Document Outcomes	Project Document Outcomes Logical Framework	Outcome Indicators	Project Outputs
Project component A: Strengthening infrastructure for LMO detection	Result 1: Designated LMO testing laboratories designed, equipped and able to carry out LMO detection.	Outcome 1: Designated LMO laboratories fully capacitated and achieving a minimum level of functionality on LMO detection.	Proportion of designated laboratories proficient in LMO detection.	1.1 Guidance document on minimal infrastructure for LMO detection. 1.2 Adequate functional equipment and facilities for LMO detection.
Project Component B: Strengthening Institutional and Human Capacities for LMO Detection	Result 2: Minimum level of competence achieved in the designated LMO testing laboratories	Outcome 2: Minimum level of competence achieved in the designated LMO detection laboratories.	Proportion of designated laboratories meeting minimum levels of competence in LMO detection.	2.1 Laboratory personnel equipped with technical expertise in Quality Management Systems. 2.2 Adequate technical backstopping in support of implementation processes. 2.3 Guidance document on Best Practices in LMO detection adapted for the regional context.
Project Component C: Strengthening Information Sharing, Lesson Learning and Partnerships	Result 3: Sustainable opportunities for sharing expertise, lessons and resources on LMO detection created	Outcome 3: Sustainable Opportunities for sharing expertise, experiences and resources on LMO detection created.	Proportion of designated laboratories participating on established experience sharing platforms.	3.1 Platforms for information exchange established and functional. 3.2 Project materials and guidance manuals well documented and published. 3.3 Established Linkages and partnerships with other regional, international LMO detection laboratories.
Project Component D: Strengthening Biosafety Decision Making	Result 4: Technical support to strengthen LMO detection and biosafety decision making processes in	Outcome 4: Technical support to strengthening LMO detection and biosafety decision making	Number of meetings and workshops held with regulatory authorities per year.	4.1 Policy makers aware of the importance of LMO testing to support decision making. 4.2 Skills and techniques for sampling, handling documentation of LMOs

²⁶ Project Document, Appendix 5: Work plans

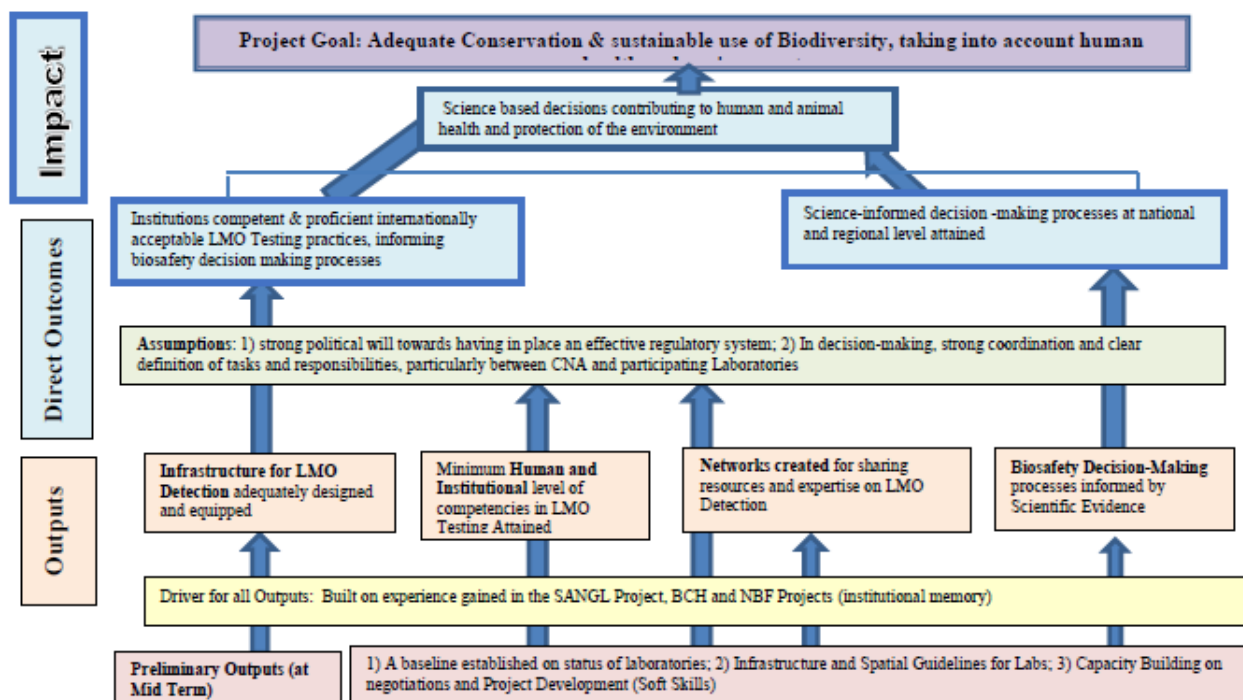
Project Component	Project Document Outcomes	Project Document Outcomes Logical Framework	Outcome Indicators	Project Outputs
	target countries provided	processes in the targeted countries.		provided to regulatory chain actors (Boarder official etc.)
Project Component E: Monitoring and Evaluation	Result 5: A comprehensive project Monitoring and Evaluation (M&E) framework developed and used to monitor and evaluate performance against set targets.	5: Project Monitoring, Evaluation and Learning systems developed.	Number of Monitoring and Evaluation reports produced by type	5.1 Implementation progress well monitored. 5.2 Project evaluated to ascertain achievement of objectives.
Project Component F: Project Coordination and Management	Result 6: Systems and structures for project coordination and management established	6: Coordination and management of the project.	Systems and structures for project coordination and management established. Good financial management systems developed for the project.	6.1 Number of coordination and review meetings conducted. 6.2 Burn Rate 6.3 Unqualified audits

Source: ProDoc, Appendix 4 Results Framework

11. The project aimed to provide an innovative approach to biosafety and address a number of challenges militating against the effectiveness of biosafety systems in the project countries. At the country level, the national biosafety system was deemed to be often fragmented, with key players in the biosafety system working in silos. The project sought to bring together the key national players in biosafety such as policy makers, regulators, technology developers, laboratories and training institutions to a round table and talk to each other about their needs, priorities and find ways and means of working together. The project also aimed to ensure that national processes would inform regional processes and be shaped by what was taking place at regional level. At the regional level, an electronic platform for exchanging best practices, sharing information, expertise and resources would be established. This would help individual countries build and sustain competences in LMO detection and analysis.²⁷
12. A theory of change was not elaborated / detailed in the project document as it was not required at the time of design. At mid-term review, a theory of change was re-constructed by the evaluator assigning the four outcomes as “outputs” and adding a new level with two “direct outcomes”: Direct outcome 1: Institutions competent and proficient at internationally acceptable LMO Testing practices, informing biosafety decision making processes, and direct outcome 2: Science-informed decision making process at national and regional level attained.
13. The results framework of the project was updated after the mid-term review to reflect revision of the project objective and output 1.1 targets and monitoring milestones and means of verification.
14. The figure below shows the reconstructed Theory of Change from Project Outcome to Impact, Mid-Term Review report, figure 4, page 46.

²⁷ Project Document, Intervention logic and key assumptions, page 52.

Figure 1: Reconstructed Theory of Change at Mid-Term Review



Source: Mid-term Review report, p. 46. Note: Project Goal (in full) reads: Adequate Conservation & sustainable use of Biodiversity, taking into account human health and environment.

4. Executing Arrangements

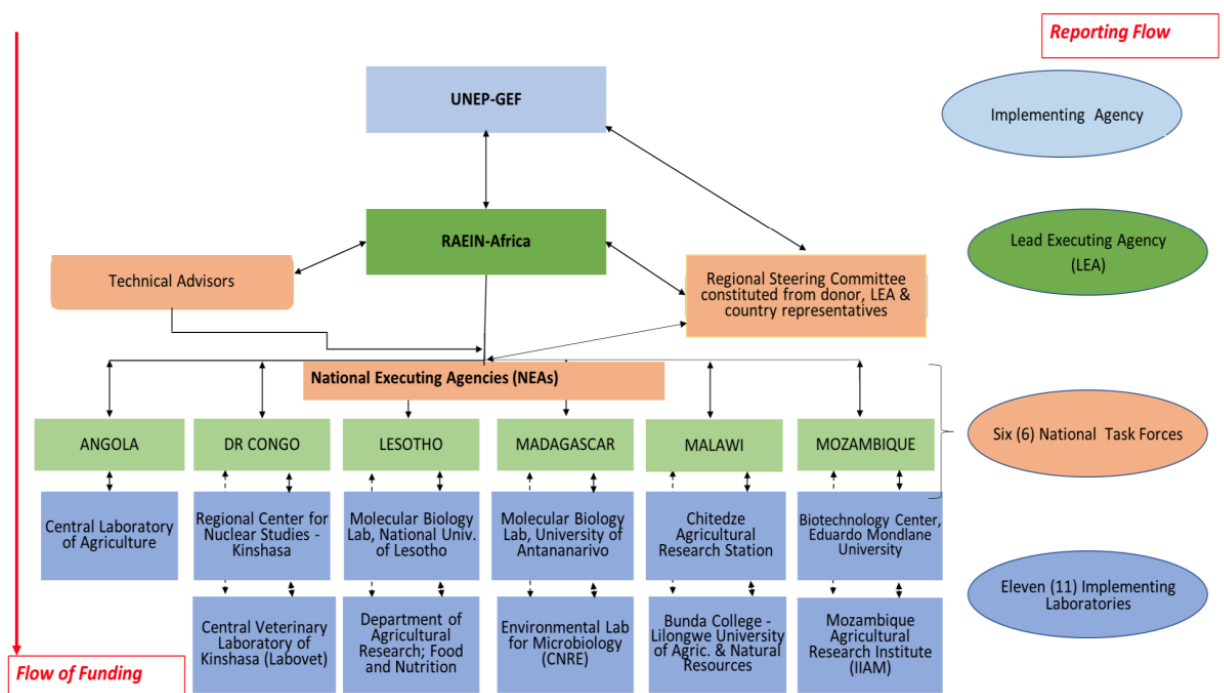
15. UNEP through its Ecosystems Division (formerly, Division on Environmental Policy Implementation) was the GEF Implementing Agency responsible for the project. The UNEP Task Manager was located in the GEF Biodiversity Unit of the Biodiversity and Land Branch in the Ecosystems Division. UNEP was to provide supervisory and technical advisory oversight for the project.
16. Figure 2 and Figure 3 provide an overview of the project's institutional and implementations arrangements, including country level partners.

Figure 2. Institutional and Implementation Arrangements



Source: Project Document, page 64.

Figure 3: Implementation arrangements with country level partners



Source: Mid-term Review report, Figure 2, page 33.

17. RAEIN-Africa was the Lead Executing Agency for the project and co-executed with the participating countries. UNEP/GEF was to sign a contract with RAEIN-Africa and Countries (Focal points) would sign MoUs with RAEIN-Africa.

18. As the Lead Executing Agency, RAEIN-Africa, was to be responsible for all project management, monitoring and self-assessment at country level, technical guidance and reporting. RAEIN-Africa's main role was to coordinate the implementation of the project, overseeing that the project would meet the set objectives in a timely and cost effective manner; ensure that the project results framework was continuously monitored and facilitate any revision that would be required, in collaboration with the UNEP Task Manager it would oversee that the project would meet the UNEP-GEF policies and procedures, facilitate the establishment of an effective network of stakeholders in LMO Detection and Biosafety regulatory chain in the participating countries, and lead in the reporting and accounting of resources to UNEP-GEF.
19. Other executing agencies at country included:
 - Ministry of Environment of Angola (MINAMB); Angola
 - Directorate of Sustainable Development, Ministry of Environment, Nature Conservation and Tourism; Democratic Republic of the Congo (DRC)
 - Ministry of Tourism, Environment and Culture (MTEC); Lesotho
 - General Directorate of Environment, Ministry of Environment, Ecology and Forests; Madagascar
 - Environmental Affairs Department, Ministry of Natural Resources, Energy and Mining; Malawi
 - The Agriculture Research Institute of Mozambique (IIAM); Mozambique
20. In-country Focal Points were expected to sign MoUs with the participating laboratories. The participating LMO Detection laboratories in collaboration with the Biosafety Focal Points would form a national project Task team.
21. A Regional Steering Committee (RSC), made up of the National Biosafety Authorities of the participating countries, the UNEP Task Manager and the Executing Lead Agency - RAEIN-Africa was expected to oversee the implementation of the project, receive periodic reports on progress, review progress and make recommendation to UNEP concerning any needed revision of the result framework and the Monitoring and evaluation plan. The RSC was expected to meet annually to review project work plans, budgets and progress reports. The work of the Regional Project Steering Committee was to be supported by National Project Taskforces in each participating country.
22. The Project Coordinating Unit was located in RAEIN Africa, the executing agency, with a project manager, administrative and general staff – in total four staff and two technical advisors. Whilst the project would have a Project Manager, who would be contracted by RAEIN Africa hence, it would be responsible and accountable to UNEP-GEF and partner executing agencies.
23. The project was designed to make use of both international and national consultants, especially for the strengthening infrastructure for LMO detection (outcome 1) and strengthening institutional and human capacities for LMO detection (outcome 2), and to lesser extent for strengthening information sharing, lesson learning and partnerships (outcome 3) and strengthening biosafety decision making (outcome 4).
24. Designated laboratories identified in each project countries had various capital human gaps, infrastructure and equipment, and other issues requiring attention. Key project stakeholders would involve Government ministries, academia and research institutes, and regulatory agencies.
25. The project was designed to work with facilities in six project countries: Angola, DRC, Lesotho, Madagascar, Malawi and Mozambique.

5. Project Cost and Financing

26. The planned project budget for the six project components was USD10,406,751.8 with a GEF grant of USD3,860,000.00 and expected co-financing from governments and partners of USD6,546,751.87 as shown in Table 4 and Table 5. By January 2023, GEF grant expenditures amounted to USD3,800,000.²⁸

Table 4: Planned Project budget and costs by component/USD

Component	GEF grant/ USD	Governments/USD
Component A: Strengthening infrastructure for LMO detection	1,302,538.60	1,107,159.04
Component B: Strengthening institutional and human capacities for LMO detection	758,289.36	1,294,766.75
Component C: Strengthening information sharing, lesson learning and partnerships	531,616.60	1,119,879.47
Component D: Strengthening biosafety decision making	378,729.48	1,049,570.32
Component E: Monitoring and Evaluation	508,825.96	999,422.43
Component F: Project coordination and management	380,000.00	975,953.99
Total	3,860,000.00	6,546,751.87

Source: Budget revision as of 01/01/2022, Anubis

Table 5: Project Budget, GEF Trust Fund and Co-financing/USD as of June 2023

Financing Type/Source	UNEP/ GEF		Government		Total	
	Planned	Actual	Planned	Actual	Planned	Actual
GEF Trust Fund	3,860,000.00	3,800,000.00			3,860,000.00	3,800,000.00
In-kind support			6,546,752.00	6,546,751.86	6,546,752.00	6,546,751.86
Total	3,860,000.00	3,800,000.00	6,546,752.00	6,546,751.86	10,406,752.00	10,346,751.86

Source: ANUBIS records as of 12 June 2023

27. Break-down of co-financing (cash and in-kind) by governments based on letters of commitment including RAEIN-Africa (USD306,500); University of the Free State, Bloemfontein, South Africa (USD165,000); Angola (USD2,000,000); DRC: (USD1,007,187); Lesotho (USD929,565); Madagascar (in-kind USD1,076,000); Malawi in-kind and other USD540,500); and Mozambique (USD522,000).²⁹
28. The project had five revisions during implementation; these revisions were made to rephrase funds between budget lines to cover shortfalls.

6. Implementation Issues

29. The key risks of the project were identified as: Slow administrative and political response to biosafety issues (high risk), inadequate mechanisms for institutional coordination in the management of biosafety (medium), low institutional capacity to manage handling of LMOs (medium), climate change related risks e.g. flooding of laboratories, electrical outage, and related laboratory evacuation and data management.

²⁸ The UNEP project document provides budget by component. UNEP expenditure reporting is against budget lines, not project component.

²⁹ Project Document, Appendix 12: Co-finance.

30. The Mid-term review conducted of the project December 2018 to March 2019 found that the delivery of outputs were well on track and were likely to be delivered by project completion date for component A and B, whereas achievement of outputs under Component C and D were more challenging and due to financial constraints from a no-cost extension on project staff costs, were recommended to remodel activities and outputs in order to “effectively and efficiently complete the project within the anticipated timeframe.”
31. The MTR recommended that the Project Document should be “renewed” to bring all stakeholders back on board, improve communication and monitoring, evaluation and reporting, and that future interventions should be based on a participatory process with involvement of the private sector in particular traders of agricultural commodities and private laboratories.
32. In addition, it recommended to implement a structured approach to knowledge management with consideration of developing a biotechnology sector computer system or a laboratory information management system. In addition, a web-based knowledge management system with a best practice database, executive information system and soft copies of project related work and finding of the analysis from the laboratory work should be developed. It could build on a paper-based laboratory information and data management system through the use of the registers introduced by the PIU. Finally, it was recommended to develop a financial sustainability plan for the regional LMO Detection Network and finalization the legal frameworks for those participating counties without to ensure that findings of the LMO detection work would be pronounced to have legal effect.
33. The project implementation was affected by the global COVID-19 pandemic, which resulted in delays and disruption in the flow of implementation due to the tragic demise of several team members from DRC and Madagascar.
34. The project had two no-cost extensions of 12 months; the first extension due to the COVID-19 related delays and the second extension due to delays in the disbursement of funds to national partners.³⁰

Section 2. OBJECTIVE AND SCOPE OF THE EVALUATION

7. Objective of the Evaluation

35. In line with the UNEP Evaluation Policy³¹ and the UNEP Project and Programme Management Manual³², the Terminal Evaluation is undertaken at operational completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The Evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP, RAEIN-Africa and key project country stakeholders. Therefore, the Evaluation will identify lessons of operational relevance for future project formulation and implementation, especially where follow-on interventions or a second phase of the project are being considered. Recommendations relevant to the whole house may also be identified during the evaluation process.

8. Key Evaluation Principles

36. Evaluation findings and judgements will be based on **sound evidence and analysis**, clearly documented in the Evaluation Report. Information will be triangulated (i.e. verified from different sources) as far as possible, and when verification is not possible, the single source will be mentioned (whilst anonymity is still protected). Analysis leading to evaluative judgements should always be clearly spelled out.
37. **The “Why?” Question.** As this is a Terminal Evaluation and a follow-up project is likely [or similar interventions are envisaged for the future], particular attention will be given to learning from the experience. Therefore, the “why?” question should be at the front of the consultants’ minds all through the evaluation exercise and is supported by the use of a theory of change approach. This means that the consultant(s) needs to go beyond the assessment of “what” the project performance was and make

³⁰ UNEP Half Yearly Progress Report , July 2022-December 2022, Project Progress and Risk Management.

³¹ <https://wedocs.unep.org/20.500.11822/41114>

³² <https://wecollaborate.unep.org>

a serious effort to provide a deeper understanding of “why” the performance was as it was (i.e. what contributed to the achievement of the project’s results). This should provide the basis for the lessons that can be drawn from the project.

38. **Attribution, Contribution and Credible Association:** In order to *attribute* any outcomes and impacts to a project intervention, one needs to consider the difference between what has happened with, and what would have happened without, the project (i.e. take account of changes over time and between contexts in order to isolate the effects of an intervention). This requires appropriate baseline data and the identification of a relevant counterfactual, both of which are frequently not available for evaluations. Establishing the *contribution* made by a project in a complex change process relies heavily on prior intentionality (e.g. approved project design documentation, logical framework) and the articulation of causality (e.g. narrative and/or illustration of the Theory of Change). Robust evidence that a project was delivered as designed and that the expected causal pathways developed supports claims of contribution and this is strengthened where an alternative theory of change can be excluded. A *credible association* between the implementation of a project and observed positive effects can be made where a strong causal narrative, although not explicitly articulated, can be inferred by the chronological sequence of events, active involvement of key actors and engagement in critical processes.
39. **Communicating evaluation results.** A key aim of the Evaluation is to encourage reflection and learning by UNEP staff and key project stakeholders. The consultants should consider how reflection and learning can be promoted, both through the evaluation process and in the communication of evaluation findings and key lessons. Clear and concise writing is required on all evaluation deliverables. Draft and final versions of the Main Evaluation Report will be shared with key stakeholders by the Evaluation Manager. There may, however, be several intended audiences, each with different interests and needs regarding the report. The consultants will plan with the Evaluation Manager which audiences to target and the easiest and clearest way to communicate the key evaluation findings and lessons to them. This may include some, or all, of the following; a webinar, conference calls with relevant stakeholders, the preparation of an Evaluation Brief or interactive presentation.

9. Key Strategic Questions

40. In addition to the evaluation criteria outlined in Section 10 below, the Evaluation will address the four **strategic questions** listed below. These are questions of interest to UNEP and to which the project is believed to be able to make a substantive contribution.

Q1: What changes were made during project implementation to adapt to the effects of COVID-19 and how did any changes affect the project’s performance?

Q2: How was procurement built into the project design and to what extent did the procurement approach contribute to the performance of the project?

Q3: To what extent were synergies created during implementation between the countries and the regional level and transformed into opportunities for replication or scaling-up?

Q4: Examine the linkages with UN reform, UNCT and UNSDCF engagement in the project countries with opportunities for UNEP, especially with countries in Southern Africa?

41. The GEF strategic questions, which are the five questions that are required when reporting in the GEF Portal should also be included and addressed in the TE and attached in an Annex to the main evaluation report.
42. The questions required for the GEF Portal should be addressed in the appropriate parts of the report and a summary of the findings on the strategic questions and GEF strategic questions provided in the Conclusions section of the report:

(a) Under Monitoring and Reporting/Monitoring of Project Implementation:

What was the performance at the project’s completion against Core Indicator Targets? (For projects approved prior to GEF-7, these indicators will be identified retrospectively and comments on performance provided³³).

³³ This is not applicable for Enabling Activities

(b) Under Factors Affecting Performance/Stakeholder Participation and Cooperation:

What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

(c) Under Factors Affecting Performance/Responsiveness to Human Rights and Gender Equality:

What were the completed gender-responsive measures and, if applicable, actual gender result areas? *(This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent)*

(d) Under Factors Affecting Performance/Environmental and Social Safeguards:

What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*

(e) Under Factors Affecting Performance/Communication and Public Awareness:

What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval).*

10. Evaluation Criteria

43. All evaluation criteria will be rated on a six-point scale. Sections A-I below, outline the scope of the criteria. A weightings table in excel format will be provided by the Evaluation Manager to support the determination of an overall project rating. The set of evaluation criteria are grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the availability of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance. The Evaluation Consultant(s) can propose other evaluation criteria as deemed appropriate.

A. Strategic Relevance

44. The Evaluation will assess the extent to which the activity is suited to the priorities and policies of the donors, implementing regions/countries and the target beneficiaries. The Evaluation will include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. Under strategic relevance an assessment of the complementarity of the project with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:

i. Alignment to the UNEP Medium Term Strategy³⁴ (MTS), Programme of Work (POW) and Strategic Priorities

45. The Evaluation should assess the project's alignment with the MTS and POW under which the project was approved and include, in its narrative, reflections on the scale and scope of any contributions made to the planned results reflected in the relevant MTS and POW. UNEP strategic priorities include the Bali Strategic Plan for Technology Support and Capacity Building³⁵ (BSP) and South-South Cooperation (S-SC). The BSP relates to the capacity of governments to: comply with international agreements and obligations at the national level; promote, facilitate and finance environmentally sound technologies and to strengthen frameworks for developing coherent international environmental policies. S-SC is regarded as the exchange of resources, technology and knowledge between developing countries.

³⁴ UNEP's Medium Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. <https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents>

³⁵ <http://www.unep.fr/ozonaction/about/bsp.htm>

ii. Alignment to Donor/GEF/Partner Strategic Priorities

46. Donor, including GEF, strategic priorities will vary across interventions. GEF priorities are specified in published programming priorities and focal area strategies. The Evaluation will assess the extent to which the project is suited to, or responding to, donor priorities. In some cases, alignment with donor priorities may be a fundamental part of project design and grant approval processes while in others, for example, instances of 'softly-earmarked' funding, such alignment may be more of an assumption that should be assessed.

iii. Relevance to Global, Regional, Sub-regional and National Environmental Priorities

47. The Evaluation will assess the alignment of the project with global priorities such as the SDGs and Agenda 2030. The extent to which the intervention is suited, or responding to, the stated environmental concerns and needs of the countries, sub-regions or regions where it is being implemented will be considered. Examples may include: UN Development Assistance Frameworks (UNDAF)³⁶, national or sub-national development plans, poverty reduction strategies or Nationally Appropriate Mitigation Action (NAMA) plans or regional agreements etc. Within this section consideration will be given to whether the needs of all beneficiary groups are being met and reflects the current policy priority to leave no one behind.

iv. Complementarity with Relevant Existing Interventions/Coherence³⁷

48. An assessment will be made of how well the project, either at design stage or during the project inception or mobilization³⁸, took account of ongoing and planned initiatives (under the same sub-programme, other UNEP sub-programmes, or being implemented by other agencies within the same country, sector or institution) that address similar needs of the same target groups. The Evaluation will consider if the project team, in collaboration with Regional Offices and Sub-Programme Coordinators, made efforts to ensure their own intervention was complementary to other interventions, optimized any synergies and avoided duplication of effort. Examples may include UNDAFs or One UN programming. Linkages with other interventions should be described and instances where UNEP's comparative advantage has been particularly well applied should be highlighted.

Factors affecting this criterion may include:

- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equality
- Country ownership and driven-ness

B. Quality of Project Design

49. The quality of project design is assessed using an agreed template during the evaluation inception phase, ratings are attributed to identified criteria and an overall Project Design Quality rating is established. The complete Project Design Quality template should be annexed in the Evaluation Inception Report. Later, the overall Project Design Quality rating³⁹ should be entered in the final evaluation ratings table (as item B) in the Main Evaluation Report and a summary of the project's strengths and weaknesses at design stage should be included within the body of the report.

Factors affecting this criterion may include (at the design stage):

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equality

³⁶ UNDAF relevance may be extended to Common Country Assessments (CCA) and United Nations Sustainable Development Cooperation Frameworks (UNSDCF).

³⁷ This sub-category is consistent with the new criterion of 'Coherence' introduced by the OECD-DAC in 2019.

³⁸ A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.

³⁹ In some instances, based on data collected during the evaluation process, the assessment of the project's design quality may change from Inception Report to Main Evaluation Report.

C. Nature of External Context

50. At evaluation inception stage a rating is established for the project's external operating context (considering the prevalence of conflict, natural disasters and political upheaval⁴⁰). This rating is entered in the final evaluation ratings table as item C. Where a project has been rated as facing either an "Unfavourable" or "Highly Unfavourable" external operating context, and/or a negative external event has occurred during project implementation, the ratings for Effectiveness, Efficiency and/or Sustainability may be increased at the discretion of the Evaluation Consultant and Evaluation Manager together. A justification for such an increase must be given.

D. Effectiveness

i. Availability of Outputs⁴¹

51. The Evaluation will assess the project's success in producing the programmed outputs and making them available to the intended beneficiaries as well as its success in achieving milestones as per the project design document (ProDoc). Any *formal* modifications/revisions made during project implementation will be considered part of the project design. Where the project outputs are inappropriately or inaccurately stated in the ProDoc, reformulations may be necessary in the reconstruction of the Theory of Change (ToC). In such cases a table should be provided showing the original and the reformulation of the outputs for transparency. The availability of outputs will be assessed in terms of both quantity and quality, and the assessment will consider their ownership by, and usefulness to, intended beneficiaries and the timeliness of their provision. It is noted that emphasis is placed on the performance of those outputs that are most important to achieve outcomes. The Evaluation will briefly explain the reasons behind the success or shortcomings of the project in delivering its programmed outputs and meeting expected quality standards.

Factors affecting this criterion may include:

- Preparation and readiness
- Quality of project management and supervision⁴²

ii. Achievement of Project Outcomes⁴³

The achievement of project outcomes is assessed as performance against the project outcomes as defined in the reconstructed⁴⁴ Theory of Change. These are outcomes that are intended to be achieved by the end of the project timeframe and within the project's resource envelope. Emphasis is placed on the achievement of project outcomes that are most important for attaining intermediate states. As with outputs, a table can be used where substantive amendments to the formulation of project outcomes is necessary to allow for an assessment of performance. The Evaluation should report evidence of attribution between UNEP's intervention and the project outcomes. In cases of normative work or where several actors are collaborating to achieve common outcomes, evidence of the nature and magnitude of UNEP's 'substantive contribution' should be included and/or 'credible association' established between project efforts and the project outcomes realised.

⁴⁰ Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management by the project team. From March 2020 this should include the effects of COVID-19.

⁴¹ Outputs are the availability (for intended beneficiaries/users) of new products and services and/or gains in knowledge, abilities and awareness of individuals or within institutions (UNEP, 2019)

⁴² In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP.

⁴³ Outcomes are the use (i.e. uptake, adoption, application) of an output by intended beneficiaries, observed as changes in institutions or behavior, attitude or condition (UNEP, 2019)

⁴⁴ All submitted UNEP project documents are required to present a Theory of Change with all submitted project designs. The level of 'reconstruction' needed during an evaluation will depend on the quality of this initial ToC, the time that has lapsed between project design and implementation (which may be related to securing and disbursing funds) and the level of any formal changes made to the project design.

Factors affecting this criterion may include:

- Quality of project management and supervision
- Stakeholders' participation and cooperation
- Responsiveness to human rights and gender equality
- Communication and public awareness

iii. Likelihood of Impact

52. Based on the articulation of long-lasting effects in the reconstructed ToC (*i.e. from project outcomes, via intermediate states, to impact*), the Evaluation will assess the likelihood of the intended, positive impacts becoming a reality. Project objectives or goals should be incorporated in the ToC, possibly as intermediate states or long-lasting impacts. The Evaluation Office's approach to the use of ToC in project evaluations is outlined in a guidance note available and is supported by an excel-based flow chart, 'Likelihood of Impact Assessment Decision Tree'. Essentially the approach follows a 'likelihood tree' from project outcomes to impacts, taking account of whether the assumptions and drivers identified in the reconstructed ToC held. Any unintended positive effects should also be identified and their causal linkages to the intended impact described.
53. The Evaluation will also consider the likelihood that the intervention may lead, or contribute to, unintended negative effects (e.g. will vulnerable groups such as those living with disabilities and/or women and children, be disproportionately affected by the project?). Some of these potential negative effects may have been identified in the project design as risks or as part of the analysis of Environmental and Social Safeguards.
54. The Evaluation will consider the extent to which the project has played a catalytic role⁴⁵ or has promoted scaling up and/or replication as part of its Theory of Change (either explicitly as in a project with a demonstration component or implicitly as expressed in the drivers required to move to outcome levels) and as factors that are likely to contribute to greater or long-lasting impact.
55. Ultimately, UNEP and all its partners aim to bring about benefits to the environment and human well-being. Few projects are likely to have impact statements that reflect such long-lasting or broad-based changes. However, the Evaluation will assess the likelihood of the project to make a substantive contribution to the long-lasting changes represented by the Sustainable Development Goals and/or the intermediate-level results reflected in UNEP's Expected Accomplishments and the strategic priorities of funding partner(s).

Factors affecting this criterion may include:

- Quality of Project Management and Supervision (including adaptive management)
- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equality
- Country ownership and driven-ness
- Communication and public awareness

E. Financial Management

56. Financial management will be assessed under three themes: *adherence* to UNEP's financial policies and procedures, *completeness* of financial information and *communication* between financial and project management staff. The Evaluation will establish the actual spend across the life of the project of funds secured from all donors. This expenditure will be reported, where possible, at output/component level and will be compared with the approved budget. The Evaluation will verify the application of proper

⁴⁵ The terms catalytic effect, scaling up and replication are inter-related and generally refer to extending the coverage or magnitude of the effects of a project. Catalytic effect is associated with triggering additional actions that are not directly funded by the project – these effects can be both concrete or less tangible, can be intentionally caused by the project or implied in the design and reflected in the ToC drivers, or can be unintentional and can rely on funding from another source or have no financial requirements. Scaling up and Replication require more intentionality for projects, or individual components and approaches, to be reproduced in other similar contexts. Scaling up suggests a substantive increase in the number of new beneficiaries reached/involved and may require adapted delivery mechanisms while Replication suggests the repetition of an approach or component at a similar scale but among different beneficiaries. Even with highly technical work, where scaling up or replication involves working with a new community, some consideration of the new context should take place and adjustments made as necessary.

financial management standards and adherence to UNEP's financial management policies. Any financial management issues that have affected the timely delivery of the project or the quality of its performance will be highlighted. The Evaluation will record where standard financial documentation is missing, inaccurate, incomplete or unavailable in a timely manner. The Evaluation will assess the level of communication between the Project/Task Manager and the Fund Management Officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach.

Factors affecting this criterion may include:

- Preparation and readiness
- Quality of project management and supervision

F. Efficiency

57. Under the efficiency criterion the Evaluation will assess the extent to which the project delivered maximum results from the given resources. This will include an assessment of the cost-effectiveness and timeliness of project execution.
58. Focusing on the translation of inputs into outputs, cost-effectiveness is the extent to which an intervention has achieved, or is expected to achieve, its results at the lowest possible cost. Timeliness refers to whether planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently. The Evaluation will also assess to what extent any project extension could have been avoided through stronger project management and identify any negative impacts caused by project delays or extensions. The Evaluation will describe any cost or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe and consider whether the project was implemented in the most efficient way compared to alternative interventions or approaches.
59. The Evaluation will give special attention to efforts made by the project teams during project implementation to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities⁴⁶ with other initiatives, programmes and projects etc. to increase project efficiency.
60. The factors underpinning the need for any project extensions will also be explored and discussed. As management or project support costs cannot be increased in cases of 'no cost extensions', such extensions represent an increase in unstated costs to implementing parties.

Factors affecting this criterion may include:

- Preparation and readiness (e.g. timeliness)
- Quality of project management and supervision
- Stakeholders participation and cooperation

G. Monitoring and Reporting

61. The Evaluation will assess monitoring and reporting across three sub-categories: monitoring design and budgeting, monitoring implementation and project reporting.

i. Monitoring Design and Budgeting

62. Each project should be supported by a sound monitoring plan that is designed to track progress against SMART⁴⁷ results towards the provision of the project's outputs and achievement of project outcomes, including at a level disaggregated by gender, marginalisation or vulnerability, including those living with disabilities.. In particular, the Evaluation will assess the relevance and appropriateness of the project indicators as well as the methods used for tracking progress against them as part of conscious results-based management. The Evaluation will assess the quality of the design of the monitoring plan as well as the funds allocated for its implementation. The adequacy of resources for Mid-Term and Terminal Evaluation/Review should be discussed if applicable.

⁴⁶ Complementarity with other interventions during project design, inception or mobilization is considered under Strategic Relevance above.

⁴⁷ SMART refers to results that are specific, measurable, achievable, relevant and time-oriented. Indicators help to make results measurable.

ii. Monitoring of Project Implementation

63. The Evaluation will assess whether the monitoring system was operational and facilitated the timely tracking of results and progress towards projects objectives throughout the project implementation period. This assessment will include consideration of whether the project gathered relevant and good quality baseline data that is accurately and appropriately documented. This should include monitoring the representation and participation of disaggregated groups (including gendered, marginalised or vulnerable groups, such as those living with disabilities) in project activities. It will also consider the quality of the information generated by the monitoring system during project implementation and how it was used to adapt and improve project execution, achievement of outcomes and ensure sustainability. The Evaluation should confirm that funds allocated for monitoring were used to support this activity.
64. The performance at project completion against Core Indicator Targets should be reviewed. For projects approved prior to GEF-7, such as the "Multi country project to strengthen institutional capacity on LMO Testing in support of national decision making" (GEF 5283), these indicators will be identified retrospectively and comments on performance provided.

iii. Project Reporting

65. UNEP has a centralised project information management system (Anubis) in which project managers upload six-monthly progress reports against agreed project milestones. This information will be provided to the Evaluation Consultants by the Evaluation Manager. Some projects have additional requirements to report regularly to funding partners, which will be supplied by the project team (e.g. the Project Implementation Reviews and Tracking Tool for GEF-funded projects). The Evaluation will assess the extent to which both UNEP and donor reporting commitments have been fulfilled. Consideration will be given as to whether reporting has been carried out with respect to the effects of the initiative on disaggregated groups.

Factors affecting this criterion may include:

- Quality of project management and supervision
- Responsiveness to human rights and gender equality (e.g disaggregated indicators and data)

H. Sustainability

66. Sustainability⁴⁸ is understood as the probability of the benefits derived from the achievement of project outcomes being maintained and developed after the close of the intervention. The Evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (i.e. 'assumptions' and 'drivers'). Some factors of sustainability may be embedded in the project design and implementation approaches while others may be contextual circumstances or conditions that evolve over the life of the intervention. Where applicable an assessment of bio-physical factors that may affect the sustainability of project outcomes may also be included.

i. Socio-political Sustainability

67. The Evaluation will assess the extent to which social or political factors support the continuation and further development of the benefits derived from project outcomes. It will consider the level of ownership, interest and commitment among government and other stakeholders to take the project achievements forwards. In particular the Evaluation will consider whether individual capacity development efforts are likely to be sustained.

ii. Financial Sustainability

68. Some project outcomes, once achieved, do not require further financial inputs, e.g. the adoption of a revised policy. However, in order to derive a benefit from this outcome further management action may still be needed e.g. to undertake actions to enforce the policy. Other project outcomes may be dependent on a continuous flow of action that needs to be resourced for them to be maintained, e.g.

⁴⁸ As used here, 'sustainability' means the long-lasting maintenance of outcomes and consequent impacts, whether environmental or not. This is distinct from the concept of sustainability in the terms 'environmental sustainability' or 'sustainable development', which imply 'not living beyond our means' or 'not diminishing global environmental benefits' (GEF STAP Paper, 2019, Achieving More Enduring Outcomes from GEF Investment)

continuation of a new natural resource management approach. The Evaluation will assess the extent to which project outcomes are dependent on future funding for the benefits they bring to be sustained. Secured future funding is only relevant to financial sustainability where a project's outcomes have been extended into a future project phase. Even where future funding has been secured, the question still remains as to whether the project outcomes are financially sustainable.

iii. Institutional Sustainability

69. The Evaluation will assess the extent to which the sustainability of project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance. It will consider whether institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. are robust enough to continue delivering the benefits associated with the project outcomes after project closure. In particular, the Evaluation will consider whether institutional capacity development efforts are likely to be sustained.

Factors affecting this criterion may include:

- Stakeholders participation and cooperation
- Responsiveness to human rights and gender equality (e.g. where interventions are not inclusive, their sustainability may be undermined)
- Communication and public awareness
- Country ownership and driven-ness

I. Factors Affecting Project Performance and Cross-Cutting Issues

(These factors are rated in the ratings table but are discussed within the Main Evaluation Report as cross-cutting themes as appropriate under the other evaluation criteria, above. If these issues have not been addressed under the evaluation criteria above, then independent summaries of their status within the evaluated project should be given.)

i. Preparation and Readiness

70. This criterion focuses on the inception or mobilisation stage of the project (i.e. the time between project approval and first disbursement). The Evaluation will assess whether appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular, the Evaluation will consider the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements. *(Project preparation is included in the template for the assessment of Project Design Quality).*

ii. Quality of Project Management and Supervision

71. In some cases 'project management and supervision' may refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects⁴⁹, it may refer to the project management performance of the executing agency and the technical backstopping and supervision provided by UNEP. The performance of parties playing different roles should be discussed and a rating provided for both types of supervision (UNEP/Partner/Executing Agency) and the overall rating for this sub-category established as a simple average of the two.
72. The Evaluation will assess the effectiveness of project management with regard to: providing leadership towards achieving the planned outcomes; managing team structures; maintaining productive partner relationships (including Steering Groups etc.); maintaining project relevance within changing external and strategic contexts; communication and collaboration with UNEP colleagues; risk management; use of problem-solving; project adaptation and overall project execution. Evidence of adaptive management should be highlighted.

⁴⁹ For GEF funded projects, a rating will be provided for the Project Management and Supervision of each of the Implementing and Executing Agencies. The two ratings will be aggregated to provide an overall rating for Quality of Project Management and Supervision

iii. Stakeholder Participation and Cooperation

73. Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs and target users of project outputs and any other collaborating agents external to UNEP and the Executing Agency. The assessment will consider the quality and effectiveness of all forms of communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders, including sharing plans, pooling resources and exchanging learning and expertise. The inclusion and participation of all differentiated groups, including gender groups should be considered.
74. The progress, challenges and outcomes regarding engagement of stakeholders in the project occurring since the MTR should be reviewed. *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval).*

iv. Responsiveness to Human Rights and Gender Equality

75. The Evaluation will ascertain to what extent the project has applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within this human rights context the Evaluation will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment⁵⁰.
76. In particular the Evaluation will consider to what extent project-implementation and monitoring have taken into consideration: (i) possible inequalities (especially those related to gender) in access to, and the control over, natural resources; (ii) specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and (iii) the role of disadvantaged groups (especially those related to gender) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation.
77. Note that the project's effect on equality (i.e. promoting human rights, gender equality and inclusion of those living with disabilities and/or belonging to marginalised/vulnerable groups) should be included within the ToC as a general driver or assumption where there is no dedicated result within the results framework. If an explicit commitment on this topic is made within the project document, then the driver/assumption should also be specific to the described intentions.
78. The completed gender-responsive measures and, if applicable, actual gender result areas should be reviewed. (This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent).

v. Environmental and Social Safeguards

79. UNEP projects address environmental and social safeguards primarily through the process of environmental and social screening at the project approval stage, risk assessment and management (avoidance, minimization, mitigation or, in exceptional cases, offsetting) of potential environmental and social risks and impacts associated with project and programme activities. The Evaluation will confirm whether UNEP requirements⁵¹ were met to: *review* risk ratings on a regular basis; *monitor* project implementation for possible safeguard issues; *respond* (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and *report* on the implementation of safeguard management measures taken. UNEP requirements for proposed projects to be screened for any safeguarding issues; for sound environmental and social risk assessments to be conducted and initial risk ratings to be assigned are evaluated above under Quality of Project Design).
80. The Evaluation will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

⁵⁰The Evaluation Office notes that Gender Equality was first introduced in the UNEP Project Review Committee Checklist in 2010 and, therefore, provides a criterion rating on gender for projects approved from 2010 onwards. Equally, it is noted that policy documents, operational guidelines and other capacity building efforts have only been developed since then and have evolved over time. https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/-Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y

⁵¹For the review of project concepts and proposals, the Safeguard Risk Identification Form (SRIF) was introduced in 2019 and replaced the Environmental, Social and Economic Review note (ESERN), which had been in place since 2016. In GEF projects safeguards have been considered in project designs since 2011.

81. Implementation of the management measures against the Safeguards Plan submitted at CEO Approval should be reviewed, the risk classifications verified and the findings of the effectiveness of any measures or lessons learned taken to address identified risks assessed. Any supporting documents gathered by the Consultant should be shared with the Task Manager.

vi. Country Ownership and Driven-ness

82. The Evaluation will assess the quality and degree of engagement of government / public sector agencies in the project. While there is some overlap between Country Ownership and Institutional Sustainability, this criterion focuses primarily on the forward momentum of the intended projects results, i.e. either a) moving forwards from outputs to project outcomes or b) moving forward from project outcomes towards intermediate states. The Evaluation will consider the engagement not only of those directly involved in project execution and those participating in technical or leadership groups, but also those official representatives whose cooperation is needed for change to be embedded in their respective institutions and offices (e.g. representatives from multiple sectors or relevant ministries beyond Ministry of Environment). This factor is concerned with the level of ownership generated by the project over outputs and outcomes and that is necessary for long-lasting impact to be realised. Ownership should extend to all gendered and marginalised groups.

vii. Communication and Public Awareness

83. The Evaluation will assess the effectiveness of: a) communication of learning and experience sharing between project partners and interested groups arising from the project during its life and b) public awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large. The Evaluation should consider whether existing communication channels and networks were used effectively, including meeting the differentiated needs of gendered or marginalised groups, and whether any feedback channels were established. Where knowledge sharing platforms have been established under a project the Evaluation will comment on the sustainability of the communication channel under either socio-political, institutional or financial sustainability, as appropriate.
84. The project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions should be reviewed. This should be based on the documentation approved at CEO Endorsement/Approval.

Section 3. EVALUATION APPROACH, METHODS AND DELIVERABLES

85. The Terminal Evaluation will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used as appropriate to determine project achievements against the expected outputs, outcomes and impacts. It is highly recommended that the consultant(s) maintains close communication with the project team and promotes information exchange throughout the Evaluation implementation phase in order to increase their (and other stakeholder) ownership of the evaluation findings. Where applicable, the consultant(s) will provide a geo-referenced map that demarcates the area covered by the project and, where possible, provide geo-reference photographs of key intervention sites (e.g. sites of habitat rehabilitation and protection, pollution treatment infrastructure, etc.)
86. The findings of the Evaluation will be based on the following:
- (a) A **desk review** of:
- Relevant background documentation, inter alia technical reports and publications and tools, etc.;
 - Project design documents (including minutes of the project design review meeting at approval); Annual Work Plans (project and regional/ national work plans) and Budgets or equivalent, revisions to the project (Project Document Supplement), the logical framework and its budget; revisions of the Project Document;
 - Project reports such as six-monthly progress and financial reports, progress reports from national partners, meeting minutes, relevant correspondence and including the Project Implementation Reviews and Tracking Tool, etc.;

- Project deliverables related to: guidance documents on minimal infrastructure for LMO detection, equipment and facilities for LMO detection, training of laboratory staff, network of laboratories, and interface between LMO testing laboratories and biosafety decision making processes;
- Mid-Term Review report of the project in 2019;
- Evaluations/reviews of similar projects.

(b) **Interviews** (individual or in group) with:

- UNEP Task Manager (TM);
- Project Coordination Unit, including the Project Manager within the Executing Agency RAEIN-Africa;
- UNEP Fund Management Officer (FMO);
- Portfolio Manager and Sub-Programme Coordinator;
- Project country partners in the six project countries;
- Project Technical Advisors
- Relevant resource persons;
- Representatives from civil society and relevant specialist groups.

(c) **Surveys** as deemed appropriate.

(d) **Field visits** – to the project countries (one laboratory per country) as resources permit.

(e) Other data collection tools such as survey, as appropriate.

11. Evaluation Deliverables and Review Procedures

87. The Evaluation Team will prepare:

- **Inception Report:** (see Annex 1 for a list of all templates, tables and guidance notes) containing an assessment of project design quality, a draft reconstructed Theory of Change of the project, project stakeholder analysis, evaluation framework and a tentative evaluation schedule.
- **Preliminary Findings Note:** typically in the form of a PowerPoint presentation, the sharing of preliminary findings is intended to support the participation of the project team, act as a means to ensure all information sources have been accessed and provide an opportunity to verify emerging findings. In the case of highly strategic project/portfolio evaluations or evaluations with an Evaluation Reference Group, the preliminary findings may be presented as a word document for review and comment.
- **Draft and Final Evaluation Report:** containing an executive summary that can act as a stand-alone document; detailed analysis of the evaluation findings organised by evaluation criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table.

88. An **Evaluation Brief**, (a 2-page overview of the evaluand and key evaluation findings) for wider dissemination through the UNEP website may be required. This will be discussed with the Evaluation Manager no later than during the finalization of the Inception Report.

89. **Review of the Draft Evaluation Report.** The Evaluation Consultants will submit a draft report to the Evaluation Manager and revise the draft in response to their comments and suggestions. Once a draft of adequate quality has been peer-reviewed and accepted, the Evaluation Manager will share the cleared draft report with the Task Manager and Project Manager, who will alert the Evaluation Manager in case the report contains any blatant factual errors. The Evaluation Manager will then forward the revised draft report (corrected by the Evaluation Consultant(s) where necessary) to other project stakeholders, for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions as well as providing feedback on the proposed recommendations and lessons. Any comments or responses to draft reports will be sent to the Evaluation Manager for consolidation. The Evaluation Manager will provide all comments to the Evaluation Consultant(s) for consideration in preparing the final report, along with guidance on areas of contradiction or issues requiring an institutional response.

90. Based on a careful review of the evidence collated by the Evaluation Consultants and the internal consistency of the report, the Evaluation Manager will provide an assessment of the ratings in the final

evaluation report. Where there are differences of opinion between the evaluator and the Evaluation Manager on project ratings, both viewpoints will be clearly presented in the final report. The Evaluation Office ratings will be considered the final ratings for the project.

91. The Evaluation Manager will prepare a **quality assessment** of the first draft of the Main Evaluation Report, which acts as a tool for providing structured feedback to the Evaluation Consultant(s). The quality of the final report will be assessed and rated against the criteria specified in template listed in Annex 1 and this assessment will be appended to the Final Evaluation Report.
92. The main evaluation report will be in English. The **Executive Summary** of the report will be translated by the Evaluation Team in French and Portuguese and published with the main Evaluation Report.
93. At the end of the evaluation process, the Evaluation Office will prepare a **Recommendations Implementation Plan** in the format of a table, to be completed and updated at regular intervals by the Task Manager. The Evaluation Office will track compliance against this plan on a six-monthly basis for a maximum of 12 months.

12. The Evaluation Team

94. For this Evaluation, the Evaluation Team will consist of a Principal Evaluator and one Evaluation Specialist who will work under the overall responsibility of the Evaluation Office represented by an Evaluation Manager, Susanne Bech, in consultation with the UNEP Task Manager, Alex Owusu-Biney, Fund Management Officer, Paul Vrontamitis, the Sub-programme Coordinator for Nature Action (formerly, Healthy and Productive Ecosystems), Marieta Sakalian and the Sub-programme Coordinator of the Environmental Governance Sub-programme, Yassin Ahmed. The consultants will liaise with the Evaluation Manager on any procedural and methodological matters related to the Evaluation, including travel. It is, however, each consultant's individual responsibility (where applicable) to arrange for their visas and immunizations as well as to plan meetings with stakeholders, organize online surveys, obtain documentary evidence and any other logistical matters related to the assignment. The UNEP Task Manager and project team will, where possible, provide logistical support (introductions, meetings etc.) allowing the consultants to conduct the Evaluation as efficiently and independently as possible.
95. The Principal Evaluator will be hired over a period of 7 months (August 2023 to February 2024) and should have the following: a university degree in environmental sciences, international development or other relevant political or social sciences area is required and an advanced degree in the same areas is desirable; a minimum of 8 years of technical / evaluation experience is required, preferably including evaluating large, regional or global programmes and using a Theory of Change approach; and a good/broad understanding of biosafety and biodiversity is desired. English and French are the working languages of the United Nations Secretariat. For this consultancy, fluency in oral and written English and Portuguese is a requirement and knowledge of French is desirable. Working knowledge of the UN system and specifically the work of UNEP is an added advantage. The work will be home-based with possible field visits.
96. The Evaluation Specialist will be hired over a period of 7 months (August 2023 to February 2024) and should have the following: an undergraduate university degree in environmental sciences, international development or other relevant political or social sciences area is required; a minimum of 5 years of professional experience is required, and evaluation experience and a broad understanding of biosafety and biodiversity are required. English and French are the working languages of the United Nations Secretariat. For this consultancy fluency in oral and written English and French is a requirement and knowledge of Portuguese is desirable. Working knowledge of the UN system and specifically the work of UNEP is an added advantage. The work will be home-based with possible field visits.
97. The Principal Evaluator will be responsible, in close consultation with the Evaluation Office of UNEP for overall management of the Evaluation and timely provision of its outputs, described above in Section 11 Evaluation Deliverables, above.
98. The Evaluation Specialist will make substantive and high- quality contributions to the evaluation process and outputs.
99. Both consultants will ensure together that all evaluation criteria and questions are adequately covered.

Specific Responsibilities for Principal Evaluator:

100. The Principal Evaluator will be responsible, in close consultation with the Evaluation Manager, for overall management of the Evaluation and timely provision of its outputs, described above in Section 11 Evaluation Deliverables.
101. The Principal Evaluator will be responsible for translation of the final Executive Summary of the report in either French or Portuguese.

Specific Responsibilities for the Evaluation Specialist:

102. The Evaluation Specialist will make substantive and high-quality contributions to the evaluation process and outputs. Both consultants will ensure together that all evaluation criteria and questions are adequately covered.
103. The Evaluation Specialist will be responsible for the translation of the final Executive Summary of the report in French or Portuguese.
104. The Evaluation Team members will work together to undertake the following:

Inception phase of the Evaluation, including:

- preliminary desk review and introductory interviews with project staff;
- draft the reconstructed Theory of Change of the project;
- prepare the evaluation framework;
- develop the desk review and interview protocols;
- draft the survey protocols (if relevant);
- develop and present criteria for country and/or site selection for the evaluation mission;
- plan the evaluation schedule;
- prepare the Inception Report, incorporating comments until approved by the Evaluation Manager

Data collection and analysis phase of the Evaluation, including:

- conduct further desk review and in-depth interviews with project implementing and executing agencies, project partners and project stakeholders;
- (where appropriate and agreed) conduct an evaluation mission(s) to selected countries, visit the project locations, interview project partners and stakeholders, including a good representation of local communities. Ensure independence of the Evaluation and confidentiality of evaluation interviews.
- regularly report back to the Evaluation Manager on progress and inform of any possible problems or issues encountered and;
- keep the Project/Task Manager informed of the evaluation progress.

Reporting phase, including:

- draft the Main Evaluation Report, ensuring that the evaluation report is complete, coherent and consistent with the Evaluation Manager guidelines both in substance and style;
- liaise with the Evaluation Manager on comments received and finalize the Main Evaluation Report, ensuring that comments are taken into account until approved by the Evaluation Manager
- prepare a Response to Comments annex for the main report, listing those comments not accepted by the Evaluation Consultant and indicating the reason for the rejection; and
- (where agreed with the Evaluation Manager) prepare an Evaluation Brief (2-page summary of the evaluand and the key evaluation findings and lessons)
- prepare Executive Summary in French and Portuguese.

Managing relations, including:

- maintain a positive relationship with evaluation stakeholders, ensuring that the evaluation process is as participatory as possible but at the same time maintains its independence;
- communicate in a timely manner with the Evaluation Manager on any issues requiring its attention and intervention.

13. Schedule of the Evaluation

105. Table 6 below presents the tentative schedule for the Evaluation.

Table 6. Tentative schedule for the Evaluation

Milestone	Tentative Dates
Evaluation Initiation Meeting	August 2023
Inception Report	September 2023
Evaluation Mission	September-October 2023
E-based interviews, surveys etc.	September-October 2023
PowerPoint/presentation on preliminary findings and recommendations	November 2023
Draft report to Evaluation Manager (and Peer Reviewer)	November 2023
Draft Report shared with UNEP Task Manager and team	December 2023
Draft Report shared with wider group of stakeholders	January 2024
Final Report	February 2024
Final Report shared with all respondents	February 2024

Annex 8 Quality Assessment of the Evaluation Report

Quality Assessment of the Evaluation Report

Evaluand Title:

Terminal Evaluation: UNEP/ GEF Project "Multi Country Project to Strengthen Institutional Capacities on LMO Testing in Support of National Decision Making" (GEF ID 5283)

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. This is an assessment of the quality of the evaluation product (i.e. evaluation report) and is dependent on more than just the consultant's efforts and skills.

	UNEP Evaluation Office Comments	Final Report Rating
Report Quality Criteria		
Quality of the Executive Summary <u>Purpose:</u> acts as a stand alone and accurate <u>summary</u> of the main evaluation product, especially for senior management. To include: • concise overview of the evaluation object • clear summary of the evaluation objectives and scope • overall evaluation rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria • reference to where the evaluation ratings table can be found within the report • summary response to key strategic evaluation questions • summary of the main findings of the exercise/synthesis of main conclusions • summary of lessons learned and recommendations.	Final report (coverage/omissions): All required elements are addressed with brief overview of project and main objective, the evaluation, key findings and conclusions, factors affecting performance, summary response to strategic questions, and lessons and recommendations. Final report (strengths/weaknesses): Short and concise overview. Detailed description of project outcomes and extent to which each are achieved. Summary responses to strategic questions, summary of performance ratings, use of evaluation approach of ratings.	5
Quality of the 'Introduction' Section <u>Purpose:</u> introduces/situates the evaluand in its institutional context, establishes its main parameters (time, value, results, geography) and the purpose of the evaluation itself. To include: • institutional context of the project (sub-programme, Division, Branch etc) • date of PRC approval, project duration and start/end dates • number of project phases (where appropriate) • results frameworks to which it contributes (e.g. POW Direct Outcome) • coverage of the evaluation (regions/countries where implemented) • implementing and funding partners • total secured budget • whether the project has been evaluated in the past (e.g. mid-term, external agency etc.) • concise statement of the purpose of the evaluation and the key intended audience for the findings.	Final report (coverage/omissions): Section covers required elements including institutional context of MTS, and institutional arrangements in detail, information on the Mid-Term Review, purpose of the Terminal Evaluation and key intended audience of the Terminal Evaluation. Final report (strengths/weaknesses): Section includes a map of target project countries and table with list of entities involved in the LMO project at national level.	5
Quality of the 'Evaluation Methods' Section <u>Purpose:</u> provides reader with clear and comprehensive description of evaluation methods, demonstrates the <u>credibility</u> of the findings and performance ratings. To include: • description of evaluation data collection methods and information sources • justification for methods used (e.g. qualitative/ quantitative; electronic/face-to-face) • number and type of respondents (<i>see table template</i>) • selection criteria used to identify respondents, case studies or sites/countries visited	Final report (coverage/omissions): Section contains list of evaluation criteria used, rating scales, five strategic questions of the evaluation, guiding principles, mix-methods approach, methodological approach, involvement of potentially excluded groups, including ethics and HR issues. Section on challenges, limitations and mitigation measures included.	5

	UNEP Evaluation Office Comments	Final Report Rating
- strategies used to increase stakeholder engagement and consultation - methods to include the voices/experiences of different and potentially excluded groups (e.g. vulnerable, gender, marginalised etc) - details of how data were verified (e.g. triangulation, review by stakeholders etc.) - methods used to analyse data (scoring, coding, thematic analysis etc) - evaluation limitations (e.g. low/ imbalanced response rates across different groups; gaps in documentation; language barriers etc) - ethics and human rights issues should be highlighted including: how anonymity and confidentiality were protected. Is there an ethics statement? E.g. <i>'Throughout the evaluation process and in the compilation of the Final Evaluation Report efforts have been made to represent the views of both mainstream and more marginalised groups. All efforts to provide respondents with anonymity have been made.'</i>	Final report (strengths/weaknesses): Phases of the evaluation process are described and methods used and measures taken to ensure potentially excluded groups. Detailed section on challenges, limitations and mitigation measures is supported by a table with overview of status of challenges.	
Quality of the 'Project' Section <u>Purpose:</u> describes and <u>verifies</u> key dimensions of the evaluation relevant to assessing its performance. To include: <i>Context:</i> overview of the main issue that the project is trying to address, its root causes and consequences on the environment and human well-being (i.e. synopsis of the problem and situational analyses) <i>Results framework:</i> summary of the project's results hierarchy as stated in the ProDoc (or as officially revised) <i>Stakeholders:</i> description of groups of targeted stakeholders organised according to relevant common characteristics <i>Project implementation structure and partners:</i> description of the implementation structure with diagram and a list of key project partners <i>Changes in design during implementation:</i> any key events that affected the project's scope or parameters should be described in brief in chronological order <i>Project financing:</i> completed tables of: (a) budget at design and expenditure by components (b) planned and actual sources of funding/co-financing	Final report (coverage/omissions): The section includes required sections on context of Angola, DRC, Lesotho, Madagascar, Malawi, Mozambique; Results Framework with table; Stakeholders with table; Project implementation structure and partners with figure of institutional arrangements; Changes in design during implementation; Project Financing with tables. Final report (strengths/weaknesses): Financing includes tables on funding sources, expenditure by outcome, co-financing. Table of stakeholders describe roles and responsibilities, power, participation, role and expected changes in behavior.	5
Quality of the Theory of Change <u>Purpose:</u> to set out the ToC at Evaluation in diagrammatic and narrative forms to support consistent project performance; to articulate the causal pathways with drivers and assumptions and justify any reconstruction necessary to assess the project's performance. To include: - description of how the <i>ToC at Evaluation</i>⁵² was designed (who was involved etc) - confirmation/reconstruction of results in accordance with UNEP definitions - articulation of causal pathways - identification of drivers and assumptions - identification of key actors in the change process - summary of the reconstruction/results re-formulation in tabular form. <i>The two results hierarchies (original/formal revision and reconstructed) should be presented as a two-column table to show clearly that, although wording and placement may have changed, the results 'goal posts' have not been 'moved'.</i> This table	Final report (coverage/omissions): Section includes description of ToC from inception to ToC at evaluation; causal pathways for intermediate state 1 and 2, review of key assumption, the second assumption and factors, table with justification for the reformulation of results statements and figure with reconstructed ToC at evaluation. Final report (strengths/weaknesses): Detailed narrative on causal pathways and based on data collected during the main phase of the evaluation confirm that the RToC at inception holds as RToC at evaluation. Brief analysis of gender and human rights driver.	5

⁵² During the Inception Phase of the evaluation process a *ToC at Evaluation Inception* is created based on the information contained in the approved project documents (these may include either logical framework or a ToC or narrative descriptions), formal revisions and annual reports etc. During the evaluation process this ToC is revised based on changes made during project intervention and becomes the *ToC at Evaluation*.

	UNEP Evaluation Office Comments	Final Report Rating
may have initially been presented in the Inception Report and should appear somewhere in the Main Evaluation report.		
Quality of Key Findings within the Report <u>Presentation of evidence:</u> nature of evidence should be clear (interview, document, survey, observation, online resources etc) and evidence should be explicitly triangulated unless noted as having a single source. <u>Consistency within the report:</u> all parts of the report should form consistent support for findings and performance ratings, which should be in line with UNEP's Criteria Ratings Matrix. <u>Findings Statements (where applicable):</u> The frame of reference for a finding should be an individual evaluation criterion or a strategic question from the ToR. A finding should go beyond description and uses analysis to provide insights that aid learning specific to the evaluand. In some cases a findings statement may articulate a key element that has determined the performance rating of a criterion. Findings will frequently provide insight into 'how' and/or 'why' questions.	Final report (coverage/omissions): Main criteria ratings and sub-criteria rating included in the main text. Final report (strengths/weaknesses): Consistency in report and all its parts supports findings and performance ratings.	5
Quality of 'Strategic Relevance' Section <u>Purpose:</u> to present evidence and analysis of project strategic relevance with respect to UNEP, partner and geographic policies and strategies at the time of project approval. To include: Assessment of the evaluand's relevance vis-à-vis: • Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities • Alignment to Donor/GEF/Partners Strategic Priorities • Relevance to Regional, Sub-regional and National Environmental Priorities • Complementarity with Existing Interventions: complementarity of the project at design (or during inception/mobilisation⁵³), with other interventions addressing the needs of the same target groups.	Final report (coverage/omissions): All required elements are covered. Brief assessment of each of the four sub-criteria. Overall rating provided with sub-criteria ratings. Final report (strengths/weaknesses): Relevance to national environmental priorities could have benefited from more detail. Section on complementarity provides good level of detail.	4.5
Quality of the 'Quality of Project Design' Section <u>Purpose:</u> to present a summary of the strengths and weaknesses of the project design, on the basis that the detailed assessment was presented in the Inception Report.	Final report (coverage/omissions): Section covers required elements. Final report (strengths/weaknesses): Focus on COVID-19 pandemic and role of RAEIN-Africa's role.	5
Quality of the 'Nature of the External Context' Section <u>Purpose:</u> to describe and recognise, when appropriate, key external features of the project's implementing context that limited the project's performance (e.g. conflict, natural disaster, political upheaval ⁵⁴), and how they affected performance. While additional details of the implementing context may be informative, this section should clearly record whether or not a major and unexpected disrupting event took place during the project's life in the implementing sites.	Final report (coverage/omissions): Section covers required description. Final report (strengths/weaknesses): Focus on COVID-19 pandemic and role of RAEIN-Africa's role.	5
Quality of 'Effectiveness' Section (i) Availability of Outputs: <u>Purpose:</u> to present a well-reasoned, complete and evidence-based	Final report (coverage/omissions):	5

⁵³ A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.

⁵⁴ Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team.

	UNEP Evaluation Office Comments	Final Report Rating
assessment of the outputs made available to the intended beneficiaries. To include: - a convincing, evidence-supported and clear presentation of the outputs made available by the project compared to its approved plans and budget - assessment of the nature and scale of outputs versus the project indicators and targets - assessment of the timeliness, quality and utility of outputs to intended beneficiaries - identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).	Detailed review of outputs produced under each outcome with description of challenges. Final report (strengths/weaknesses): Assessment supported by tables listing availability of outputs 1-4 as well as outputs 5-6 (related to project management) with targets at the end of the project and level of achievement.	
ii) Achievement of Project Outcomes: Purpose: to present a well-reasoned, complete and evidence-based assessment of the uptake, adoption and/or implementation of outputs by the intended beneficiaries. This may include behaviour changes at an individual or collective level. To include: - a convincing and evidence-supported analysis of the uptake of outputs by intended beneficiaries - assessment of the nature, depth and scale of outcomes versus the project indicators and targets - discussion of the contribution, credible association and/or attribution of outcome level changes to the work of the project itself - any constraints to attributing effects to the projects' work - identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).	Final report (coverage/omissions): Assessment of outcomes with focus on outcome 1-4. Final report (strengths/weaknesses): Assessment supported by table with indicators, baseline, target at the end of the project and status. Country examples included. Conclusions on extent to which each outcome has been achieved. Specific summary on extent assumptions and drivers held (regulatory systems, decision-making), drivers (stakeholder involvement, communication, gender equality and vulnerable groups integration).	5
(iii) Likelihood of Impact: Purpose: to present an integrated analysis, guided by the causal pathways represented by the ToC, of all evidence relating to likelihood of impact, including an assessment of the extent to which drivers and assumptions necessary for change to happen, were seen to be holding. To include: - an explanation of how causal pathways emerged and change processes can be shown - an explanation of the roles played by key actors and change agents - explicit discussion of how drivers and assumptions played out - identification of any unintended negative effects of the project, especially on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).	Final report (coverage/omissions): Assessment based on intermediate states 1 and 2 of the ToC. Final report (strengths/weaknesses): Key assumptions related to laboratories and decision-makings processes are considered in the assessment.	5
Quality of 'Financial Management' Section Purpose: to present an integrated analysis of all dimensions evaluated under financial management and include a completed 'financial management' table (may be annexed). Consider how well the report addresses the following: - adherence to UNEP's financial policies and procedures - completeness of financial information, including the actual project costs (total and per activity) and actual co-financing used - communication between financial and project management staff	Final report (coverage/omissions): Assessment each sub-criterion included in a table. Final report (strengths/weaknesses): Sub-criteria ratings are included in table 21 which could have benefited from more description and indication of sources.	4
Quality of 'Efficiency' Section Purpose: to present an integrated analysis of all dimensions evaluated under efficiency (i.e. the primary categories of cost-effectiveness and timeliness). To include: time-saving measures put in place to maximise results within the secured budget and agreed project timeframe	Final report (coverage/omissions): Section covers all required elements. Final report (strengths/weaknesses): Findings supported by examples from project countries.	5

	UNEP Evaluation Office Comments	Final Report Rating
- discussion of making use, during project implementation, of/building on pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. - implications of any delays and no cost extensions - the extent to which the management of the project minimised UNEP's environmental footprint.		
Quality of 'Monitoring and Reporting' Section <u>Purpose:</u> to present well-reasoned, complete and evidence-based assessment of the evaluand's monitoring and reporting. Consider how well the report addresses the following: - quality of the monitoring design and budgeting (<i>including SMART results with measurable indicators, resources for MTE/R etc.</i>) - quality of monitoring of project implementation (<i>including use of monitoring data for adaptive management</i>) - quality of project reporting (<i>e.g. PIMS and donor reports</i>) \	Final report (coverage/omissions): Section with assessment of overall criterion, sub-criteria and ratings. Final report (strengths/weaknesses): Assessment could have benefited from more information on the quality aspect the in monitoring and reporting done.	4.5
Quality of 'Sustainability' Section <u>Purpose:</u> to present an integrated analysis of all dimensions evaluated under sustainability (i.e. the endurance of benefits achieved at outcome level). Consider how well the report addresses the following: - socio-political sustainability - financial sustainability - institutional sustainability	Final report (coverage/omissions): Concise assessment by sub-criterion with ratings and an overall rating. Final report (strengths/weaknesses): Strong sections on socio-political sustainability and financial sustainability based on consideration of project countries' specific circumstances, and rentability of laboratories.	5
Quality of Factors Affecting Performance Section <u>Purpose:</u> These factors are not always discussed in stand-alone sections and may be integrated in the other performance criteria as appropriate. However, if not addressed substantively in this section, a cross reference must be given to where the topic is addressed and that entry must be sufficient to justify the performance rating for these factors. Consider how well the evaluation report, either in this section or in cross-referenced sections, covers the following cross-cutting themes: - preparation and readiness - quality of project management and supervision⁵⁵ - stakeholder participation and co-operation - responsiveness to human rights and gender equality - environmental and social safeguards - country ownership and driven-ness - communication and public awareness	Final report (coverage/omissions): Section meets requirements. Each factor is addressed individually and assessed and rated as required. Final report (strengths/weaknesses): Short and concise assessments. Responsiveness to human rights and gender equity described in more detail and assessed.	5
Quality of the Conclusions Section (i) Conclusions Narrative: <u>Purpose:</u> to present summative statements reflecting on prominent aspects of the <u>performance of the evaluand as a whole</u>, they should be derived from the synthesized analysis of evidence gathered during the evaluation process. To include: compelling narrative providing an integrated summary of the strengths and weakness in overall performance	Final report (coverage/omissions): Separate section with summary of project findings and ratings, include table with ratings of all criteria and sub-criteria. Conclusion section focusses on achievements and change made by project. Responds to the 5 strategic questions.	5

⁵⁵ In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP. This includes providing the answers to the questions on Core Indicator Targets, stakeholder engagement, gender responsiveness, safeguards and knowledge management, required for the GEF portal.

	UNEP Evaluation Office Comments	Final Report Rating
(achievements and limitations) of the project - clear and succinct response to the key strategic questions - human rights and gender dimensions of the intervention should be discussed explicitly (e.g. how these dimensions were considered, addressed or impacted on)	<i>Final report (strengths/weaknesses):</i> Good summary of strengths and weaknesses of the project and detailed responses to the strategic questions.	
ii) Utility of the Lessons: Purpose: to present both positive and negative lessons that have potential for wider application and use (replication and generalization) Consider how well the lessons achieve the following: - are rooted in real project experiences (i.e. derived from explicit evaluation findings or from problems encountered and mistakes made that should be avoided in the future) - briefly describe the context from which they are derived and those contexts in which they may be useful - do not duplicate recommendations	<i>Final report (coverage/omissions):</i> The eight lessons presented follow required format for lessons. <i>Final report (strengths/weaknesses):</i> Lessons relate directly to the project. Lesson learned number 8 is related to gender and human rights dimensions and stating that the role of qualified women in LMO detection is essential.	5
(iii) Utility and Actionability of the Recommendations: Purpose: to present proposals for specific action to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results. Consider how well the lessons achieve the following: - are feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when - include at least one recommendation relating to strengthening the human rights and gender dimensions of UNEP interventions - represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations. NOTES: (i) In cases where the recommendation is addressed to a third party, compliance can only be monitored and assessed where a contractual/legal agreement remains in place. Without such an agreement, the recommendation should be formulated to say that UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner. The effective transmission by UNEP of the recommendation will then be monitored for compliance. (ii) Where a new project phase is already under discussion or in preparation with the same third party, a recommendation can be made to address the issue in the next phase.	<i>Final report (coverage/omissions):</i> Three recommendations presented. Format for recommendations used. <i>Final report (strengths/weaknesses):</i> Priority level, type of recommendation, responsibility and Implementation time frame are specified as required.	5
Quality of Report Structure and Presentation (i) Structure and completeness of the report: To what extent does the report follow the Evaluation Office structure and formatting guidelines? Are all requested Annexes included and complete?	<i>Final report (coverage/omissions):</i> Well-structured and complete report. All annexes included. <i>Final report (strengths/weaknesses):</i> Executive summaries included in English, French and Portuguese. All annexes are completed. Detailed evaluation itinerary provided.	6
(ii) Writing and formatting: Consider whether the report is well written (clear English language and grammar) with language that is adequate in quality and tone for an official document? Do visual aids, such as maps and graphs convey key information?	<i>Final report (coverage/omissions):</i> Language is appropriate and concise. <i>Final report (strengths/weaknesses):</i> Good use of maps and tables.	5
OVERALL REPORT QUALITY RATING		5

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.

At the end of the evaluation, compliance of the evaluation process against the agreed standard procedures is assessed, based on the table below. All questions with negative compliance must be explained further in the table below.

Evaluation Process Quality Criteria		Compliance	
		Yes	No
Independence:			
1.	Were the Terms of Reference drafted and finalised by the Evaluation Office?	x	
2.	Were possible conflicts of interest of proposed Evaluation Consultant(s) appraised and addressed in the final selection?		x
3.	Was the final selection of the Evaluation Consultants made by the Evaluation Office?		x
4.	Were the evaluators contracted directly by the Evaluation Office?	x	
5.	Were the Evaluation Consultants given direct access to identified external stakeholders in order to adequately present and discuss the findings, as appropriate?	x	
6.	Did the Evaluation Consultants raise any concerns about being unable to work freely and without interference or undue pressure from project staff or the Evaluation Office?		x
7.	If Yes to Q6: Were these concerns resolved to the mutual satisfaction of both the Evaluation Consultant and the Evaluation Manager?		
Financial Management:			
8.	Was the evaluation budget approved at project design available for the evaluation?	x	
9.	Was the final evaluation budget agreed and approved by the Evaluation Office?	x	
10.	Were the agreed evaluation funds readily available to support the payment of the evaluation contract throughout the payment process?	x	
Timeliness:			
11.	If a Terminal Evaluation: Was the evaluation initiated within the period of six months before or after project operational completion?		x
12.	Were all deadlines set in the Terms of Reference respected, as far as unforeseen circumstances allowed?	x	
13.	Was the inception report delivered and reviewed/approved prior to commencing any travel?	x	
Project's engagement and support:			
14.	Were the project team, Sub-Programme Coordinator and identified project stakeholders given an opportunity to provide comments on the evaluation Terms of Reference?	x	
15.	Did the project make available all required/requested documents?	x	
16.	Did the project make all financial information (and audit reports if applicable) available in a timely manner and to an acceptable level of completeness?	x	
17.	Was adequate support provided by the project to the evaluators in planning and conducting evaluation missions?	x	
18.	Was close communication between the Evaluation Consultants, Evaluation Office and project team maintained throughout the evaluation?	x	
19.	Were evaluation findings, lessons and recommendations adequately discussed with the project team for ownership to be established?	x	
20.	Were the project team, Sub-Programme Coordinator and any identified project stakeholders given an opportunity to provide comments on the draft evaluation report?	x	
Quality assurance:			
21.	Were the evaluation Terms of Reference, including the key evaluation questions, peer-reviewed?	x	
22.	Was the ToC in the inception report peer-reviewed?	x	
23.	Was the quality of the draft/cleared report checked by the Evaluation Manager and Peer Reviewer prior to dissemination to stakeholders for comments?	x	
24.	Did the Evaluation Office complete an assessment of the quality of both the draft and final reports?	x	
Transparency:			
25.	Was the draft evaluation report sent directly by the Evaluation Consultants to the Evaluation Office?	x	
26.	Did the Evaluation Manager disseminate (or authorize dissemination) of the cleared draft report to the project team, Sub-Programme Coordinator and other key internal personnel (including the Reference Group where appropriate) to solicit formal comments?	x	
27.	Did the Evaluation Manager disseminate (or authorize dissemination) appropriate drafts of the report to identified external stakeholders, including key partners and funders, to solicit formal comments?	x	
28.	Were all stakeholder comments to the draft evaluation report sent directly to the Evaluation Office?	x	
29.	Did the Evaluation Consultants respond adequately to all factual corrections and comments?	x	
30.	Did the Evaluation Office share substantive comments and Evaluation Consultants responses with those who commented, as appropriate?	x	

Provide comments / explanations / mitigating circumstances below for any non-compliant process issues.

Process Number	Criterion	Evaluation Office Comments
11.		The actual start of the evaluation process was delayed in order develop and consult on the ToR and allow for the selected evaluation consultants to be contracted to undertake their assignment.