Food and Agriculture Organization of the United Nations

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12/2020

Evaluation of "Promotion of climate-smart livestock management integrating reversion of land degradation and reduction of desertification risks in vulnerable provinces"

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Acronyms and abbreviations

Agrocalidad	Plant and animal health control and regulation authority
ASC	Agricultural Services Centre
CCM	Climate change mitigation
CPF	Country Programming Framework
CSA	Climate-smart agriculture
CSL	Climate-smart livestock farming
CSLM	Climate-smart livestock management
CSLP	Climate-smart livestock farming project
DAG	Decentralised autonomous government
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
LUDP	Land use and development plan
MAAE	Ministry of Environment and Water of Ecuador (formerly Ministry of Environment of Ecuador [MAE])
MAG	Ministry of Agriculture and Livestock (formerly Ministry of Agriculture, Livestock, Aquaculture and Fisheries [MAGAP])
NAMA	Nationally appropriate mitigation action
NDC	Nationally determined contributions
NGO	Non-governmental organization
SCCF	Special Climate Change Fund
SMART	Specific, measurable, achievable, relevant and time-bound

Executive summary

1. The final evaluation of the "Climate-Smart Livestock Management – Integrating Reversion of Land Degradation and Reduction of the Risk of Desertification in Vulnerable Provinces" project (GCP/ECU/085/GFF and GCP/ECU/092/SCF – GEF ID 4775) was detailed in the project Document (PRODOC), in accordance with the requirements of the Global Environment Facility (GEF). The implementing agency responsible for the supervision and provision of technical advice for the project is the FAO Representation in Ecuador. In addition, the Ministry of Agriculture (MAG)[1] and the Ministry of Environment and Water of Ecuador (MAAE)[2] asked FAO-Ecuador to manage the financial and operational execution of the project.

2. The project began in August 2016, with a proposed end date of June 2020. At the start of May 2020, the project steering committee approved its extension until the end of October 2020. The project was implemented in seven provinces in Ecuador, distributed across three geographical regions: coastal, mountainous (Andes) and the Amazon, encompassing a total of 1 056 direct beneficiaries (349 women and 707 men).

3. The global environmental objective of the project is "to reduce soil degradation, and mitigate greenhouse gas emissions in the livestock sector of Ecuador", and the project development objective is "to sustainably increase and improve the supply of goods and services from livestock production".

4. The final evaluation took place from 10 April to 10 August 2020, under complex circumstances marked by the COVID-19 pandemic, which impeded the realisation of the fieldwork. However, a participatory and transparent methodological approach was taken, and the various interested parties were consulted online and by telephone. The evaluation team was composed of two consultants, one national and one international, both with extensive knowledge of the country where the evaluated project was implemented, and of livestock, rural and climate change matters.

Main findings

5. The project was **pertinent and relevant** in relation to the strategic and operational instruments and tools of the Global Environment Facility and of FAO overall, the 2018-2021 Country Programming Framework of FAO-Ecuador and the 2013-2017 national framework of priorities for technical assistance. In addition, the project is in line with objectives 3 and 6 of the 2017-2021 National Development Plan "Toda una Vida", the 2013-2017 National Plan for Good Living and the priorities of the National Climate Change Strategy, and provides specific and tangible outcomes that contribute to the adaptation to climate change and the mitigation of its effects.

6. The project **managed to achieve the outcomes and targets outlined in the design for all of its components**. It contributed to the reduction of 50 034 tonnes of CO_2 equivalent (tCO_2eq) of direct greenhouse gas emissions and a reduction of 75 271 tCO_2eq is predicted for 2021; in relation to the pastures, 347 582 tCO_2eq of carbon (stocks) were directly sequestered in 2020 and it is predicted that 506 848 tCO_2eq will be sequestered in 2021. The project **made other achievements not detailed in its design**, such as the creation of a green credit line with BanEcuador for climate-smart livestock practices, the contribution

[1] Formerly the Ministry of Agriculture, Livestock, Aquaculture and Fisheries (MAGAP).
[2] Formerly the Ministry of Environment of Ecuador (MAE).

to the formulation of gender indicators for the measurement, reporting and verification system and the incorporation of the climate-smart livestock approach in Ecuador's National Agriculture Plan for 2020-2030, presented by the Ministry of Agriculture and Livestock to the Presidency of the Republic. With regard to technical aspects, other additional outcomes that add value to the project include the preparation of online tools to measure adaptation capacity and the reduction of greenhouse gas emissions, as well as the development of a mobile phone application in partnership with the private company Telefónica.

7. The **project had an impact on public policies (Component 1)** with the incorporation of climate-smart livestock farming as one of the lines of action for the agricultural sector in the nationally determined contributions, the sustainable livestock farming strategy proposal and the nationally appropriate mitigation actions proposal (NAMA for the livestock sector). The project **was geared towards improving productive practices, contributing** to the adoption of climate-smart livestock practices (**Component 2**) encompassing 40 388 hectares distributed across 165 pilot farms and 871 replica farms. **The adaptation capacity of the country's livestock sector also improved (Component 3)**, reporting a 7.76 percent increase in adaptation capacity, linked to a reduction in vulnerability (-4.06 percent); reduction of sensitivity (-0.03 percent); and reduction of climate risk (-5.85 percent).

8. Climate-smart livestock practices focus on livestock management and production matters, although they also address environmental aspects. The project developed a total of 75 practices, some specific to the geographic regions, divided into 12 categories: i) farm planning; ii) food; iii) food and nutrition; iv) animal management; v) animal health and welfare; vi) genetic improvement and reproduction; vii) conservation and restoration; viii) management to reduce conflict with wildlife; ix) management of agro-chemicals and veterinary supplies; x) management of livestock waste; xi) management of organic and inorganic solid waste; xii) management and handling of water. These practices have been documented in reports and videos available on the project website.

9. A substantial proportion of the project was geared towards the management of knowledge among producers, involving good practices such as the field schools and the presence of technicians in the territories where the pilot farms were implemented, as well as outside of the project by disseminating and publishing the information. The capacity development strategy was composed of specific programmes for each province, organised under a knowledge management approach, according to the target group, its needs and existing capacities. In total, 859 training workshops took place as part of the 37 field schools established, with a total of 1 056 producers who graduated across the different regions. The strategy focused on two groups: i) institutional stakeholders and ii) livestock producers. In the first group, 194 technicians (43 percent) and 254 technicians from state institutions were trained; and in the second, 347 producers (33 percent) and 709 producers were trained. Around 22 women and 40 men, technicians and producers of the provinces of Loja and Santa Elena, were trained as promoters who will contribute towards spreading and making the climate-smart livestock farming approach sustainable.

10. The project management model, in which FAO held the role of implementing and executing agency, proved to be efficient and suitable for the context, and facilitated the achievement of outcomes and fulfilment of objectives, as well as the continuity of the activities. The steering committee (composed of the ministers of the Ministry of Environment and Water of Ecuador and of the Ministry of Agriculture and Livestock, and the FAO Representative) and the project management committee (composed of the technicians involved) worked

effectively and facilitated inter-institutional coordination. FAO acted as a neutral third party, technical advisor and bridge when there was a change in authorities and/or in technical staff with roles in the project.

11. The project had a budget of USD 3.85 million from the Global Environment Facility and real co-financing of USD 18.22 million provided by the Ministry of Agriculture and Livestock (56.4 percent), the Ministry of Environment and Water of Ecuador (22.2 percent), the beneficiary producers and farmers (9.6 percent), national government institutions (5.7 percent), autonomous provincial, cantonal and parish governments (3.6 percent) and other key stakeholders, including co-financing not planned for during the design phase. The budget was executed by FAO-Ecuador, in line with that planned.

12. The project **monitoring and evaluation system** was efficient and contributed to the implementation of the activities planned at national level and in the seven intervention provinces. The provincial annual operating plans included management and outcome indicators, and facilitated the monthly monitoring and evaluation of the outcomes and achievements fulfilled. In addition, indicators were prepared to measure the impact of the climate-smart livestock farming model by means of the reduction of greenhouse gas emissions, the adaptation capacity and increased productivity.

13. The work methods used in the provinces made it possible to ensure the participation and empowerment of the interested parties in the diagnosis, planning and implementation processes of climate-smart livestock farming practices. In addition, the producers of the pilot farms committed to a period of three years (they signed a letter of agreement for the co-execution of the project) to implement the climate-smart livestock farming practices, to participate in training, to use the materials, inputs and equipment of the project responsibly and supplement the investments required to implement climate-smart livestock farming practices (investment of own resources), among other obligations.

14. From the moment the gender equality strategy was developed (not included in the project design), the project was focused on promoting gender equality by supporting men and women in all actions they perform linked to livestock production, promoting equal opportunities and the generation of affirmative actions geared particularly towards smallholders, female heads of households and women who head livestock farming, in order to contribute to the elimination of obstacles that hinder their development. The strategy responded to the specific needs and problems of men and women working with dairy cattle and cattle for meat, including members of indigenous communities and vulnerable groups.

15. The project managed to anchor the climate-smart livestock farming approach in public policy instruments, highlighting the commitment made by the Ministry of Agriculture and Livestock, Ministry of Environment and Water of Ecuador, BanEcuador and the Loja provincial decentralised autonomous government to ensure the sustainability of the outcomes achieved in the environmental, social, institutional and financial sphere. In the other provinces, the involvement of the decentralised autonomous governments was variable, but the foreseen actions and coordination were maintained. The main barrier that limits the sustainability of the project achievements is the economic crisis that Ecuador has been facing over the last two years, exacerbated by the COVID-19 pandemic since March 2020, as well as the lack of a formal project exit strategy that all of the stakeholders and parties involved are aware of.

Conclusions

Conclusion 1. Relevance. From the outset, the project demonstrated and addressed a great need in the agricultural sector. In addition, it was pertinent and relevant in relation to the instruments, operational and strategic tools of the donor (GEF), FAO, national development plans and the priorities and policies regarding climate change and sustainable livestock farming.

Conclusion 2. project outcomes. The project achieved the outcomes and targets defined in its design, and exceeded some of the targets proposed. In addition, outcomes that were not contemplated were achieved, in terms of policies and partnerships with the private sector.

Conclusion 3. Development of capacities and knowledge management. The project capacity development strategy was composed of specific programmes for each province, organised under a knowledge management approach, according to the target group, its needs and existing capacities. The work methods ensured the participation and empowerment of the various stakeholders in the diagnosis, planning and implementation processes of climate-smart livestock farming practices, including gender equality. A high amount of documentation was produced, and its dissemination beyond the stakeholders linked to the project was promoted, which led to the climate-smart livestock farming approach reaching other authorities.

Conclusion 4. Efficiency, implementation and execution of the project. The role of FAO, as the project executing and implementing agency – acting as a high level technical advisor, neutral third party and bridge between two ministries, often with diverging objectives and roles – enabled fluid inter-institutional coordination, focused on achieving the project targets and outcomes. When there were changes in authorities and/or in technical staff of the project, the role of FAO made it possible to give continuity to the actions, avoid delays and other negative impacts that would have been able to limit the performance of the project team.

Conclusion 5. Monitoring and evaluation. The project monitoring and evaluation system was efficient and contributed to the implementation of the activities planned at national level and in the intervention provinces. The monitoring and evaluation system implemented is a useful and relevant tool accessible to the whole project team that facilitated accountability and the remote completion of this final evaluation.

Conclusion 6. Participation and commitment of the interested parties. The stakeholders and interested parties showed ongoing commitment and appropriation. This was decisive in achieving the outcomes and targets proposed. The provincial political environment had an impact on the appropriation of the climate-smart livestock farming approach in each territory at institutional as well as producer level. The project strengthened the level of organisation of the producers, generating a positive impact on their quality of life, linked to a greater relationship with their communities, generating actions such as the distribution of milk to children from vulnerable areas and contributing to food security.

Conclusion 7. Gender and social equality aspects. The project promoted gender equality by supporting men and women in all actions they perform linked to livestock production, seeking equal opportunities and the generation of affirmative actions geared particularly towards smallholders, female heads of households and women who head livestock farming, in order to contribute to the elimination of obstacles that hinder their development. The emphasis on women complied with the need to improve the quality of their participation, in addition to developing and strengthening their capacities geared towards promoting the adoption of climate-smart livestock farming practices.

Conclusion 8. Sustainability. The main barrier limiting the sustainability of the outcomes achieved in the environmental, social, institutional and financial sphere is the economic crisis that Ecuador has suffered in recent years, exacerbated by the COVID-19 pandemic. This crisis was not contemplated as it arose towards the end of the project. However, the current scenario also represents an opportunity for climate-smart livestock farming (which includes small and medium scale family farming activity), given its contribution to food security by promoting the production of quality meat and milk that is safe and nutritional. In addition, climate-smart livestock farming – by reducing greenhouse gas emissions, contributing to adaptation to climate change and reducing environmental degradation – can be the beneficiary of resources from international sources of climate financing.

Conclusion 9. Progress towards impact. The project managed to fulfil the targets proposed related to the reduction of soil degradation, the mitigation of greenhouse gas emissions and the improvement of the adaptation capacity of the Ecuadorian livestock sector. In terms of technical aspects, the preparation of online tools to monitor greenhouse gas emissions and to calculate climate risk and the adaptation capacity of the sector, is noteworthy. These tools are in the process of being launched in an application for mobile phones and will be very useful in the search for international financing for climate matters.

Conclusion 10. Progress towards impact. One gap shown in the project throughout the whole process of consultation with the interested parties, is the lack of connections to the market and the private sector that, although not contemplated in the design, arises as a recurring element during the implementation. The partnership established with the private company El Ordeño to train a group of its providers who will later implement climate-smart livestock farming practices in their farms, is an example of the role the private sector can play to promote and disseminate the climate-smart livestock farming approach (or another sustainable agriculture activity or approach) by means of incentives for environmentally-friendly production.

Recommendations

The recommendations of the final evaluation are grouped into recommendations specific to the area of action of the project and those that address matters beyond the sphere of control of the project.

Recommendations specific to the area of action of the project:

Recommendation 1. In terms of pertinence. In order for the project to contribute to the country commitments regarding climate change:

i. For the project team - it is recommended that they finalise the 2030 Sustainable Livestock Farming Strategy proposal and the proposal for nationally appropriate mitigation actions (livestock sector NAMA) as soon as possible. Work with the Government for awareness raising and consultation of the livestock sector NAMA, for its adoption.

ii. For the Ministry of Agriculture and Livestock and the Ministry of Environment and Water of Ecuador - it is suggested that they review and assess whether the livestock sector NAMA can be adopted or that they work on it so that it can be sent to the United Nations Framework Convention on Climate Change. Consider whether the work performed can contribute to the search for financing among international donors, including the NAMA Facility of the Inter-American Development Bank, which has shown interest. International financing for the livestock sector NAMA will make it possible to make the climate-smart livestock farming practices sustainable and fulfil the target regarding the reduction of greenhouse gas emissions established in the nationally determined contributions, as well as generate environmental, social and economic benefits for the country.

iii. For the Ministry of Agriculture and Livestock - it is suggested that they assess the inclusion of the 2030 Sustainable Livestock Farming Strategy to have a political framework that facilitates the international financing of the actions proposed in the livestock sector NAMA and in other similar initiatives.

Recommendation 2. In terms of effectiveness. In order for Ecuador to consolidate the green credit line in the state development bank:

i. For BanEcuador - it is suggested that they find agreements with the international development bank to make the green credit line sustainable, under the same credit conditions or even with lower interest rates than other development loans.

ii. For FAO - it is recommended that it promote the coordination and creation of synergies between BanEcuador and Corporación Nacional de Finanzas Populares y Solidarias, with a view to generating greater financial inclusion to support the popular and solidarity-based financial sector organisations (savings and credit cooperatives, mutual entities, savings banks and community banks) so that they can offer the green credit line, broadening the opportunities for the producers who want to implement the climate-smart livestock farming approach in their farms. It is also recommended that FAO-Ecuador assist BanEcuador in the search for international financing to maintain a green credit line, linked to a system of reduction of greenhouse gas emissions.

Recommendation 3. In order to maintain the climate-smart livestock farming practices implemented by the livestock producers, particularly in the province of Loja:

i. For the Ministry of Agriculture and Livestock, for the Ministry of Environment and Water of Ecuador and for FAO - it is suggested that they support the Loja provincial decentralised autonomous government in the implementation of the climate-smart livestock farming approach as part of the actions that it proposes in its Land Use and Development Plan; and support the Gonzanamá and Paltas cantonal decentralised autonomous governments in their initiatives to implement the climate-smart livestock farming approach in their lands. Support the initiatives geared towards the partner universities of the project in the different provinces and in the non-governmental organisation *Children of the Andes Humanitarian* in the province of Imbabura that seeks to ensure the sustainability and replication of the project outcomes.

ii. For FAO - it is recommended that on the basis of the project evidence, it promote outreach actions with private stakeholders that can contribute towards providing sustainability and to replicating the climate-smart livestock farming approach in other regions where there may be interest.

Recommendation 4. It is recommended that the Loja provincial decentralised autonomous government and the provincial departments of the Ministry of Agriculture and Livestock and the Ministry of Environment and Water of Ecuador in Loja, give continuity to the implementation of the gender equality strategy developed by the project, to promote equal opportunities and the generation of affirmative actions geared particularly towards smallholders, female heads of households and women who head livestock farming, in order to contribute to the elimination of obstacles that hinder their development. It is recommended that FAO share the lessons learned in Loja with other provinces where similar work is being done.

Recommendation 5. In order to maintain the outcomes (sustainability) achieved in the environmental, social, institutional and financial field:

i. For FAO - it is recommended that it promote the design and financing of new projects that make it possible to give continuity to the implementation of the climate-smart livestock farming approach in the country and in the region, taking into account the lessons learned with regard to the processes to develop capacities, commitment and appropriation by the interested parties, social equality, participation of the private sector and access to markets, among others, at all times highlighting the contribution made by climate-smart livestock farming to food security. Include members of the project technical team in these new initiatives that could provide substantial added value to the implementation of the climate-smart livestock approach, its continuity and replication.

ii. For the institutions involved - it is suggested that they assess the possibility of including the members of the project technical team in the new initiatives (2030 sustainable livestock strategy, livestock sector NAMA, nationally determined contributions, etc.) that aim to give sustainability and replicate the climate-smart livestock farming approach. Given that the project technical team provided excellent performance, in addition to the fact that all members are specialised in the implementation of climate-smart livestock farming practices, they would undoubtedly provide immense added value to new projects and activities linked to the topic. This would make it possible to guarantee that the project human capital can continue to work on the climate-smart livestock approach, ensuring its full adoption in the country.

Recommendations that address topics beyond the area of control of the project:

Recommendation 6. It is recommended that the GEF Coordination Unit in Rome and FAO-Ecuador clearly identify the components of a project, the execution of which presents benefits when carried out by FAO as implementing agency and with an executing role, based on an analysis of risks that includes the technical and institutional capacities. For example, when involving projects that link two or more ministries or portfolios of the State with diverging objectives and roles, or where there are strong risks linked to political instability, FAO can play a key role as a high level technical advisor, neutral third party, and bridge between two or more ministries, facilitating fluid inter-institutional coordination, focused on achieving the project targets and outcomes. In addition, it can facilitate operations to buy inputs and hire staff, maximising efficiency in the management and implementation of the project.

Recommendation 7. In terms of monitoring and evaluation, it is recommended that FAO consider the monitoring and evaluation system developed in the project as a model to follow in new projects, which can be reflected from the design phase of new initiatives. In this regard, it is recommended that the lessons learned be systematised and distributed across other GEF projects, inside and outside of the country.

Recommendation 8. In terms of impact, it is recommended that, for future programmes and projects that promote climate-smart livestock farming and/or sustainable agricultural production, FAO include components relating to value chains, access to markets, the identification of special markets and partnerships with the private sector, as elements that can contribute substantially to the adoption of larger scale and longer term sustainable production practices. In addition, FAO's connection to private stakeholders must be agile and efficient to be able to respond to the demands of the sector and work in a joint manner.

1. Introduction

1.1 Purpose of the evaluation

1. The final evaluation of the climate-smart livestock (CSL) farming project fulfils the dual purpose of accountability and learning. Accountability is primarily to the Global Environment Facility (GEF) as the project donor, to the Government of the Republic of Ecuador and to the Decentralised Autonomous Governments (DAG) of the provinces in which the project was executed, who played the role of key stakeholders and counterparts in the execution. The second purpose, of generating lessons learned, aims to systematise the lessons learned and good practices that can serve for similar actions in Ecuador or other countries. This will be very useful for all of the interested parties and relies upon the assessment of the achievement of outcomes, their impact and the contribution to the objectives proposed by the project.

2. The final evaluation was contemplated in the project document (PRODOC), in accordance with the GEF requirements and was completed from April to June 2020. This evaluation assessed the achievement of the outcomes proposed and their sustainability, in addition to describing the impacts of the project. The evaluation contains strategic recommendations with a view to promoting the institutionalisation and the appropriation of the project outcomes by the different interest groups, in addition to sharing information and good practices with the decision-making authorities and administrators of other projects with food sovereignty competences, conservation and sustainable use of natural resources, peasant agricultural production and conservation of ecosystems, that make it possible to incorporate the CSL approach into public policies and into other projects and initiatives underway.

1.2 Intended users

3. The foreseen main users of the information generated by the evaluation are the project team and the team of the national office of the Food and Agriculture Organization of the United Nations (FAO) in Ecuador, the project management team at FAO at regional and global level, the Ministry of Agriculture and Livestock (MAG) and the Ministry of Environment and Water of Ecuador (MAAE)[3] as the main partners, the donor (GEF), national government agencies and the provincial, cantonal and parish DAGs. These stakeholders will use the evaluation outcomes to feed and make their own actions regarding CSL matters sustainable and as a guide to propose, design and develop new actions and projects concerning CSL and related topics.

4. The following list contains the breakdown of the groups of users and foreseen uses of the evaluation:

5. Steering committee and project management committee, both consisting of the MAG, the MAAE and FAO. It is foreseen that they will use the outcomes and conclusions of the evaluation to improve the scope and sustainability of the outcomes achieved once the intervention has concluded.

[3] On 4 March 2020, by means of Executive Decree 1007, the Ministry of Environment (MAE) and the Secretariat of Water (Senagua) merged to create the Ministry of Environment and Water of Ecuador (MAAE).

6. Budget holder, lead technical officer (LTO), project working group (PWG), national coordinator and climate-smart livestock farming project (CSLP) team. They can use the findings and lessons learned to improve the design and implementation of future interventions in the country or in the region.

7. FAO-GEF Coordination Unit. It will use the outcomes to report to the donor and provide information on the fulfilment of the project objectives and indicators and the execution of the budget. It can also use the lessons learned from this project for similar initiatives.

8. Provincial departments of the MAG and the MAAE. The evaluation will serve as a basis to assess the strengths and weaknesses of the project intervention strategy, highlighting the joint work and the implementation of actions with local counterparts.

9. Provincial, cantonal and parish DAG. They will be able to use the evaluation results to monitor the outcomes the project achieved, and they can use it as a guide to embark on new actions or projects on related topics.

10. BanEcuador.[4] It will use the evaluation results to provide feedback on the operation of the green credit line to promote CSL and other green credit lines.

11. Livestock producers (direct beneficiaries of the project). They can use the evaluation to give continuity to the actions undertaken on their farms, that in turn form part of the project outcomes.

12. Other national and international stakeholders including the academic world, the private sector and non-governmental organizations (NGO). The evaluation will serve to understand the project outcomes and as a guide in the event that they want to undertake similar projects or actions.

1.3 Scope and objective of the evaluation

13. The final evaluation of the CSLP took place from April to June 2020. The mid-term review (MTR) of the project took place in August 2019, and covered the first three years of implementation, from its initiation in August 2016 to July 2019. This assessment is considered an important source of information. The final evaluation is a complementary and independent exercise that examines the activities of the four components of the project and their impact, focusing on the period from July 2019 to March 2020.

14. The target population of the final evaluation is composed of key informants from the different groups of stakeholders who played an important role in the implementation of the project, some of whom continue to give continuity to the project outcomes.

15. The group of stakeholders consulted during the evaluation process and their role in the project was:

16. Staff responsible for the implementation of the project at national, provincial and local level.

[4] BanEcuador is a public development bank that promotes inclusion, associations and an improved quality of life for micro, small and medium-sized business owners principally involved in agribusinesses, commerce and popular urban and rural sectors services; and for disadvantaged groups, by rendering innovative, efficient, sustainable and socially-focussed services.

17. Staff from FAO-Ecuador and from FAO offices with regional or global scope linked to the implementation of the project.

18. Universities (academic circles) with a presence in some of the provinces in which the project was implemented, with specific roles in research/participatory action processes principally for the development and implementation of technologies in the farms of the beneficiaries.

19. Staff from MAG, including Agrocalidad at national and provincial level with a key role in the implementation of the project from the national to the local level directly with the beneficiaries.

20. Staff from MAAE, at national and provincial level with a key role in supporting the project from the national to the local level directly with the beneficiaries.

21. Associations and groups of livestock producers and (non-associated) independent livestock producers, who took part in the project training sessions and/or implemented the CSL approach in their farms (including women, members of indigenous communities and other vulnerable communities).

22. Staff from BanEcuador at national and provincial level, state development bank and strategic partner of the project, with a key role in the implementation of a credit line to promote CSL.

23. Provincial DAGs with a key role in supporting the training activities and in implementing the CSL approach in the farms of the beneficiaries.[5]

24. Cantonal or municipal DAGs with an important role in supporting the training activities and in assisting with implementing the CSL approach in the farms of the beneficiaries.[6]

25. Parish DAGs with an important role in supporting the training activities and in encouraging the adoption of the CSL approach in the farms of the beneficiaries.[7]

26. NGO *Children of the Andes Humanitarian* with a key role in the strengthening of capacities, the implementation of the CSL approach and the connection between beneficiaries and the market (sustainability) in the province Imbabura.

27. With regard to the geographical scope, the final evaluation had national and provincial scope, encompassing the seven provinces in which the project was implemented. The analysis of all the project components, in these seven provinces made it possible to gather a variety of opinions, experiences, perceptions and recommendations to feed the evaluation, which contributed to minimising the limitations linked to the lack of field visits.

28. The final evaluation responded to three objectives focused on accountability, strategic aspects and learning:

[5] The role of the provincial DAGs varied slightly in the different provinces in which the project was implemented, given that there were specific factors and circumstances in each province that led to said differences. However, it was always framed within the competences, assigned by the Organic Code for Territorial Organization, Autonomy and Decentralization (COOTAD), regarding the promotion of agricultural production and environmental management at provincial level.

[6] The role of the cantonal DAGs was different in each canton in which the project was implemented, ranging from a direct support role to implementation at farm level, to cantons in which the municipal DAG did not participate.

[7] The role of parish DAGs also varied in the different parishes in which the project was implemented, but it was always focused on promoting the adoption of the CSL approach at farm level, aligned with the competences provided by COOTAD to boost community productive activities, conservation of biodiversity and environmental protection in the parishes.

29. To describe the project impacts and the sustainability of the outcomes in the long term, as an input for reporting to GEF and to the national and provincial governments with a counterpart role in the execution. (accountability)

30. To indicate future actions needed to sustain the project outcomes, expand on the impact it has had in subsequent phases, mainstream and up-scale its outputs and practices, and disseminate the information gathered among the authorities and institutions with competences relating to food sovereignty, conservation and sustainable use of natural resources, peasant farming and ecosystem conservation, to ensure the continuity of the processes that the project initiated. (strategic aspects)

31. To assess whether the project agreements and implementation modalities have been the most efficient considering other existing mechanisms and to systematise the lessons learned. (learning)

32. During the evaluation, the achievements, impact, progress and difficulties faced by the project were examined, with a focus on eight evaluation criteria: i) pertinence; ii) effectiveness; iii) efficiency; iv) project monitoring and evaluation system; v) participation and commitment of the interested parties; vi) vulnerable groups; vii) sustainability; viii) progress towards impact. In addition, the main lessons learned were documented to guide the actions that make it possible to sustain the outcomes achieved and the processes initiated by the project and their possible extension to other provinces in the country or even to other countries in the region. Table 1 contains the criteria and the guiding questions of the final evaluation.

1.4 Methodology

33. The evaluation took a participatory and transparent methodological approach, and the various interested parties were consulted throughout the evaluation process. The evaluation team was composed of two consultants, one national and one international, both with extensive knowledge of the country where the evaluated project was implemented, and of livestock and environmental matters.

34. The evaluation methodology was based on the theory of change (ToC) formulated during the MTR. The main evaluation tool used is the evaluation matrix. This matrix contains guiding questions focusing on the eight evaluation criteria: i) pertinence; ii) effectiveness; iii) efficiency; iv) project monitoring and evaluation system; v) participation and commitment of the interested parties; vi) vulnerable groups; vii) sustainability; viii) progress towards impact. In addition, space was included for gathering the lessons learned and recommendations based on the interviews conducted. The matrix can be found in Appendix 1. Each guiding question contains a series of sub-questions that helped to guide the interviews. Specific indicators were also included for each of the sub-questions, sources of information, information gathering methods and a section for comments or relevant additional information that was taken into account when conducting the interviews.

Table 1: Evaluation criteria and guiding questions

Evaluation criteria	Guiding questions
1. Relevance/pertinence*	Was and does the project continue to be pertinent and relevant in relation to the operating strategies, activities and needs of the GEF programme, the national priorities and the FAO Country Programming Framework (CPF)?
2. Effectiveness*	To what extent has the project achieved the proposed outcomes and objectives?
3. Efficiency*	Have the intervention methods, institutional structure and financial, technical and operational resources and procedures available, as well as the communication strategy helped or hindered the achievement of the project outcomes and objectives?
4. Monitoring and evaluation*	To what extent has the project monitoring and evaluation system (M&E) been efficient and contributed to the proposed outcomes and objectives?
5. Participation and commitment of the interested parties*	To what extent did the commitment of the interested parties and stakeholders contribute to the implementation of the project?
6. Vulnerable groups	To what extent has the project taken into account and promoted gender equality and social equality in its design and implementation?
7. Sustainability*	How sustainable are the outcomes achieved at an environmental, social, financial and institutional level?
8. Progress towards impact	What transformative changes (positive development outcomes that are maintained throughout time and replicated beyond the limits of the project, on generating changes in behaviour, capacities and public policies) has the project achieved in the institutions and among the beneficiaries (livestock farmers)?
9. Lessons learned and recommendations	Which project lessons can be useful for future interventions by FAO and other stakeholders?

* These criteria are categorized in accordance with the GEF methodology: https://www.gefieo.org/evaluations/gef-evaluation-policy-2019 (GEF, 2019).

Source: final evaluation Terms of Reference

35. The following details the methods used to gather information:

36. Individual semi-structured, online or telephone, interviews with key stakeholders of all of the main interested parties.

37. Online survey regarding the capacity-building processes, geared towards technical staff of MAG, MAAE, provincial, cantonal and parish DAGs, universities and NGOs that are beneficiaries of the training provided to this target group.

38. Review of the project documentation as well as the norms, programmes, plans and public policies linked to such. The list of documents analysed is presented in the references section and in the bibliography.

39. As a result of the COVID-19 pandemic declared by the World Health Organisation (WHO), no field visits, face-to-face meetings or interviews took place with the interested parties.

40. One or two key stakeholders from each interest group were randomly selected to be consulted. When women were not included in the first selection round, a second selection round took place to ensure their participation in the evaluation process.

41. More than 80 key stakeholders were individually interviewed. In the case of the project staff in the provinces, group interviews were conducted with the teams, composed of two professionals, who worked in each province. The interviews were conducted using online platforms, such as Skype or Zoom, or over the telephone, depending on the connectivity that the stakeholders had. The individual interviews – as the main means of gathering information – made it possible to ensure that all of the opinions, experiences, perceptions and recommendations were listened to equally. Appendix 2 contains the list of stakeholders interviewed.

42. The evaluation team selected the evaluation criteria, the questions and sub-questions geared towards each interviewee, in accordance with the group of stakeholders they belong to, the geographic scope of their activities, their individual characteristics and their role in the project. The manner in which the sub-questions were formulated was also adapted to each stakeholder, particularly the project beneficiary producers.

43. Google Forms were used for the online survey. This survey focused on analysing the effectiveness and impact criteria – using the guiding questions from the evaluation matrix as a basis – in relation to the training geared towards the technical staff of the MAG, MAAE, provincial, cantonal and parish DAGs and universities. The link with the questionnaire was sent by e-mail to 136 technicians and had a 35 percent response rate (48 responses).

44. Having the opinions, experiences, perceptions and recommendations of the different interested parties made it possible to incorporate their vision regarding the objectives, evaluation process and key points that the evaluation addressed, including possible gaps and areas for improvement. In addition, it contributed to the relevance, credibility and use of the evaluation outcomes.

45. The project staff provided the evaluation team with the project documentation including qualitative and quantitative information, such as training materials, technical publications, reports and strategies, among others, as well as the information inherent to the M&E system, in addition to norms, programmes, plans and public policies linked to the topic of the project. In addition, the evaluation team assessed additional information provided or suggested by the stakeholders interviewed.

46. The analysis used triangulated[8] information combining several methods and sources of data (interviews, surveys and different documents on the same topic), so that the evaluation team could resolve the risk of not having direct observations made on the ground to feed the evaluation.

47. The evaluation team analysed the information gathered in the interviews in order to systematise that related to events and data that could be proven and verified by means of reviewing technical documents of the project, reports, etc., to be able to triangulate information, check it and then validate it. This process took place while taking into account the perceptions and opinions of the interviewees, which were also relevant to the process. This made it possible to guarantee the validity and reliability of the data analysis and

[8] Triangulation is the use of three or more theories, sources or types of information, or types of analysis to verify and justify an evaluation. By combining several sources of data, methods, analysis or theories, the evaluators aim to overcome the bias that comes from single informants, single methods, single observers or studies based on a single theory (UNDP, 2012).

collection process to therefore ensure the objectivity, reliability and credibility of the evaluation.

48. The evaluation used the OED project evaluation manual for decentralised offices, as a guide: Planning and realisation of project evaluations under the competences of the budget holder (FAO, 2019). The presentation and the content of the final report were realised according to the format facilitated by the FAO Office of Evaluation (OED).

49. With regard to the involvement of the interested parties in the evaluation, as indicated at the beginning of this section, more than 80 key stakeholders belonging to the different interest groups were interviewed. In addition, an online survey was conducted geared towards the technicians of public institutions that received the training provided by the project. The involvement and collaboration of all the interested parties, on responding to both evaluation tools, contributed to the credibility of the evaluation and its outcomes.

1.5 Limitations

50. This final evaluation was completed from April to August 2020, as planned. During these months, the COVID-19 pandemic affected the region, including Ecuador. This impeded the completion of field visits due to the safety measures such as obligatory quarantine and preventative confinement. The impossibility of organising face-to-face workshops, meetings and interviews resulted in limitations and risks, such as: i) not being able to observe the outcomes and impacts of the project in the beneficiaries' farms; ii) not being able to gather data and information *in situ*. This was remedied by means of online interviews although a substantial risk for reaching the main stakeholders was connectivity, as not all beneficiary producers have internet access and/or a telephone line in their homes.

51. To mitigate said limitations and risks and avoid a lack of representation or bias in the information, online interviews were conducted with a wide range of interested parties, including all of the main groups of stakeholders with a direct and indirect role in the implementation of the project at local and provincial level, including livestock producers among which attention was paid to the stakeholders of vulnerable groups (women and members of indigenous communities) and other key stakeholders from the seven provinces in which the project was implemented, therefore ensuring an appropriate geographical representation. This minimised the possibility of generating a positive bias in the evaluation by only consulting stakeholders with a direct role in the implementation of the project and/or focusing on consultations with stakeholders located in the national field.

52. In addition, the following measures were taken:

53. Extension of time, to analyse the project documentation in detail and, where applicable, review other sources of complementary information and/or request additional information.

54. To have the support and availability of the national and provincial project team to be able to respond to isolated consultations.

55. To interview the consultant who completed the MTR focusing on the outcomes and impacts that he observed on the ground during his visit in 2019 and in his recommendations to the team responsible for the final evaluation.

1.6 Structure of the report

56. This report is composed of the following sections: 1) Introduction, this section includes the methodology; 2) Background and context of the project; 3) Findings; 4) Lessons learned; 5)

Conclusions and recommendations. In addition, it contains the References and the Bibliography.

57. The report is accompanied by the following appendices and annexes:

Appendices (included as the final section of this report)

Appendix 1. List of stakeholders interviewed

Annexes (available in the original Spanish language version of the report)

Anexo 1. Matriz de evaluación
http://www.fao.org/3/cb1414es/cb1414es.pdf

Anexo 2. Prácticas de ganadería climáticamente inteligente (GCI) implementadas por el proyecto
http://www.fao.org/3/cb1415es/cb1415es.pdf

Anexo 3. Carta de acuerdo de coejecución firmada con productores/as
http://www.fao.org/3/cb1416es/cb1416es.pdf

Anexo 4. Resumen de resultados de consultas en línea a técnicos de instituciones estatales
http://www.fao.org/3/cb1417es/cb1417es.pdf

Anexo 5. Datos financieros del proyecto, incluyendo el cofinanciamiento
http://www.fao.org/3/cb1418es/cb1418es.pdf

Anexo 6. Cuadro de valoración de los criterios del FMAM
http://www.fao.org/3/cb1419es/cb1419es.pdf

2. Background and context of the project

2.1 Project context

58. Project information:

i. "Climate-Smart Livestock Management – Integrating Reversion of Land Degradation and Reduction of the Risk of Desertification in Vulnerable Provinces" project. It is composed of two project codes GCP/ECU/085/GFF and GCP/ECU/092/SCF (GEF ID 4775), as it has two sources of financing, the fifth replenishment of the GEF (GEF 5) and the GEF Special Climate Change Fund (SCCF).

ii. The project began in August 2016, with a proposed end date of June 2020, and a duration of almost four years. An application for extension was submitted at no cost to the donor to close the project at the end of October 2020. The project is composed of four components:

a. Component 1: Strengthening of the coordination and of the institutional capacities to incorporate the CSL approach in the management of the territory and in the development of livestock policies and instruments.

- Outcome 1.1: The CSL approach was mainstreamed into climate change mitigation and adaptation policies in the livestock sector and land-use planning.
- Outcome 1.2: Institutional capacities for the implementation of CSL management strategies (CSLM) strengthened.

b. Component 2: Strategies of technology transfer, dissemination and implementation for CSLM.

- Outcome 2.1: CSLM approach adopted in degraded livestock areas.
- Outcome 2.2: Access to financing instruments for investments in CSLM practices in degraded areas has been improved.

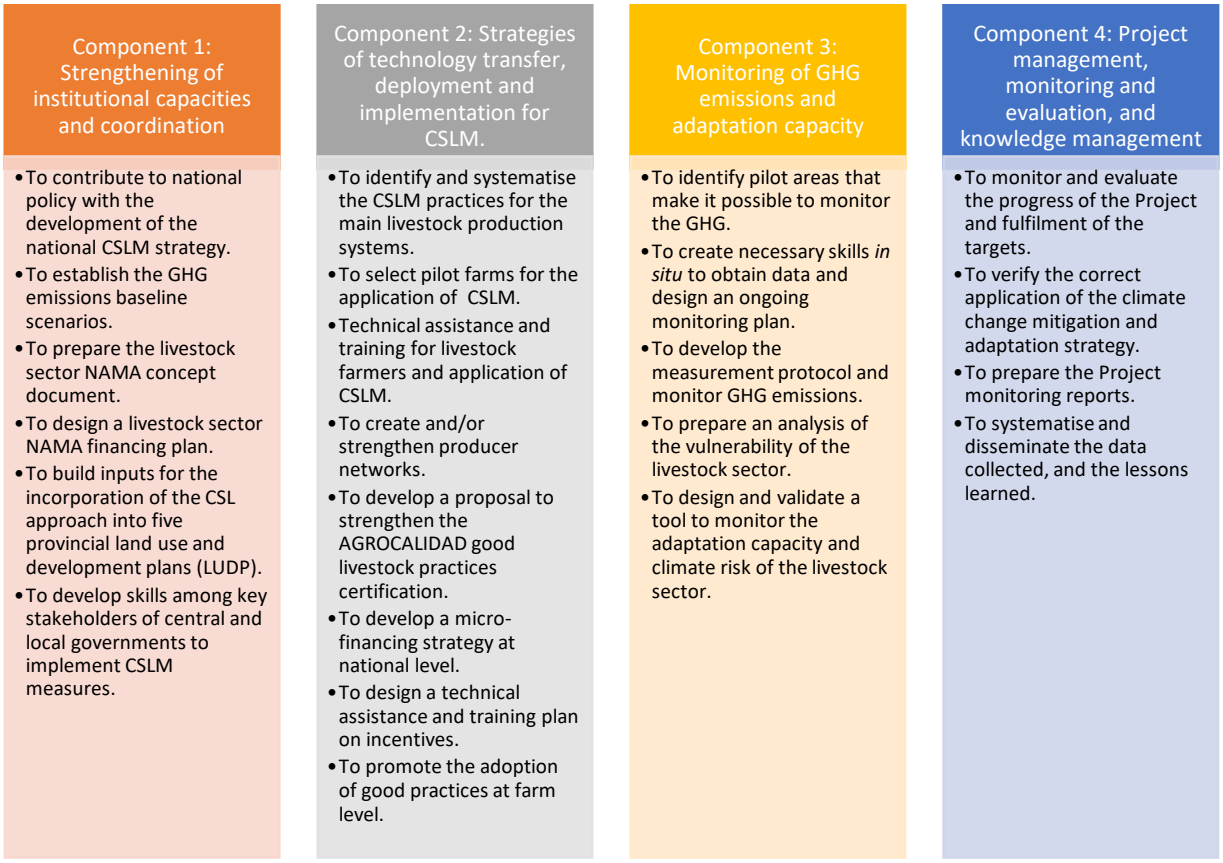
c. Component 3: Monitoring of greenhouse gas (GHG) emissions and adaptation capacity in the livestock sector.

- Outcome 3.1: Livestock sector GHG emissions in selected areas have been reduced and monitored.
- Outcome 3.2: Adaptation capacity of the livestock sector has been monitored.

d. Component 4: project management, monitoring and evaluation, and knowledge management

- Outcome 4.1: The project has been implemented. The lessons learned and best practices have been documented and disseminated.

Figure 1: Main activities of the climate-smart livestock farming (CSL) project components



Source: Website of the CSL project http://www.ganaderiaclimaticamenteinteligente.com/informacion.php

iii. The project was implemented in Ecuador, covering seven provinces distributed across three geographical regions: coastal, mountainous (Andes) and the Amazon. The coastal provinces that form part of the project are Manabí, Guayas and Santa Elena: the provinces in the mountains are Loja and Imbabura; and in the Amazon they are Napo and Morona Santiago.

iv. The main groups of stakeholders who were project beneficiaries (target groups the project assisted) were:

   a. Associations and groups of livestock producers and (non-associated) independent livestock producers, who took part in the project training sessions and/or implemented the CSL approach in their farms, including women, members of indigenous communities and other vulnerable communities.

   b. MAG staff including Agrocalidad (plant and animal health control and regulation authority of the MAG).

   c. MAAE staff at national and provincial level.

   d. Provincial, cantonal and parish DAG staff.

v. Components 1, 2 and 3 in particular are focused on all of the stakeholders from the foregoing list, while component 4 focuses on the stakeholders who played a direct role in the implementation of the project, such as the MAG technicians, MAAE and the FAO project team.

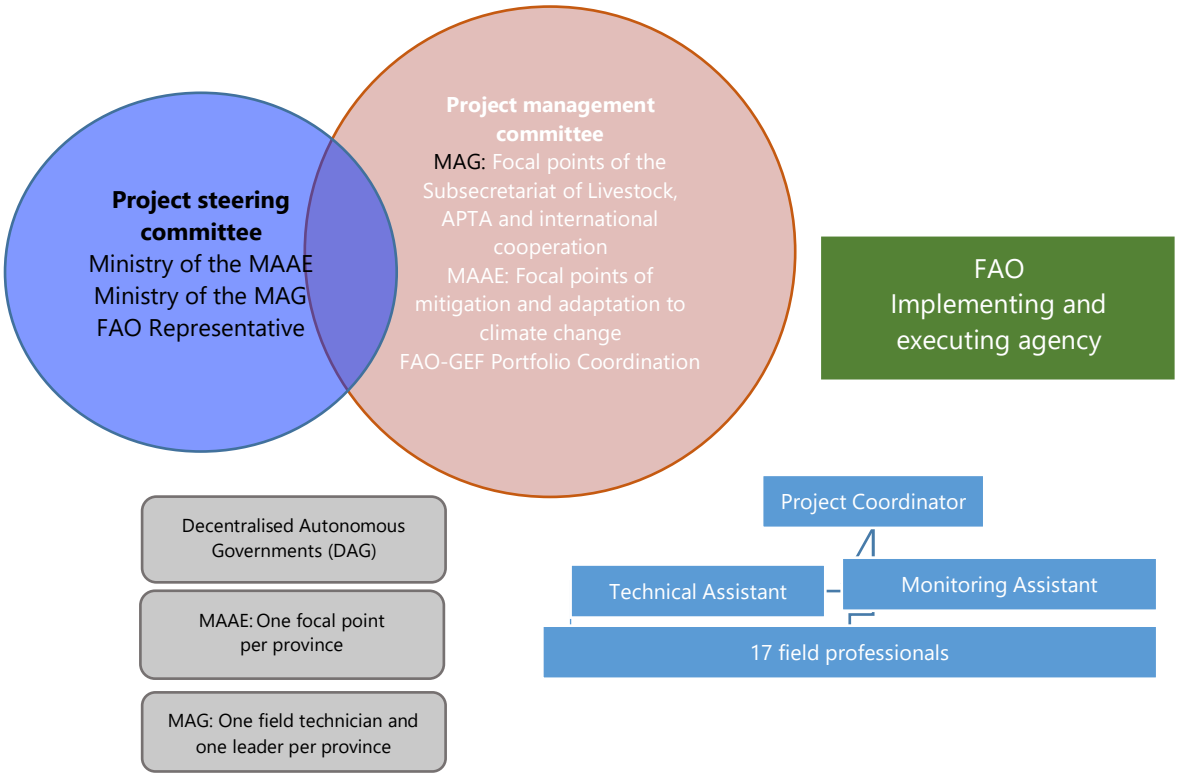
vi. The implementing agency responsible for the supervision and provision of technical advice for the project is FAO-Ecuador. In addition, the MAG and MAAE put it in charge of the operational and financial execution of the project. The FAO Representative in Ecuador is the Budget Holder; the GEF projects Official, under the direct supervision of the representative, supports it in the supervision of the management and progress of the project.

vii. The project steering committee, composed of the MAG, MAAE and FAO, supervises and coordinates the planning of the implementation of the project. The steering committee had the direct and active participation of the ministers.

viii. The management committee, composed of focal points of the Subsecretariat of Livestock of the Amazon Productive Transformation Agenda (ATPA) and of the MAG international cooperation department; focal points of adaptation to climate change and the mitigation of its effects, both from the Subsecretariat of Climate Change of the MAAE; and the Coordination of the FAO-GEF portfolio is responsible for decision-making, for establishing guidelines and supervising the actions of the project team.

ix. The project design contemplated a technical team, led by one project coordinator and composed of a technical assistant and a monitoring assistant, with headquarters in Quito, in addition to two field technicians per province, to make a total of 17 professionals. For its part the MAG assigned one leader and one field technician per province, while the MAAE assigned one focal point per province, in addition to the professionals who composed the project committees at national level. In addition, the work was completed in close collaboration with the DAGs (Figure 2).

Figure 2: Institutional stakeholders involved in the CSL project



Source: evaluation team

x. The project promoted inter-institutional coordination spaces with other interest groups that participated actively, and contributed efficiently to the implementation of activities. The universities in the intervention provinces that played a role in developing the capacities of the project beneficiaries; BanEcuador, which implemented a green credit line to promote CSL practices; and the private company El Ordeño that adopted the CSL approach in its livestock practices, stand out.

xi. According to the PRODOC, the total project cost is USD 26 012 613, of which USD 3 856 060 were financed with a donation from the GEF and USD 22 156 555 by means of co-financing from the MAG, MAAE, FAO and beneficiaries (Table 2).

Table 2: Project co-financing sources

Co-financing sources	Co-financier (Source)	Type of co-financing	Co-financing planned at the start (USD)	Real co-financing at the end (USD)
NAT. GOVERNMENT	MAAE	Cash	11 566 891	3 842 471
NAT. GOVERNMENT	MAAE	In kind	191 300	210 712
NAT. GOVERNMENT	MAG	Cash	6 107 069	9 326 104
NAT. GOVERNMENT	MAG	In kind	3 159 895	954 897
INTERNATIONAL ORGANISATION	FAO	In kind	320 000	353 995
BENEFICIARIES	Small and medium-sized livestock farmers	In kind	811 400	1 756 655
Provincial, cantonal and parish DAGs	Decentralised Autonomous Governments	In kind	0	655 116
INIAP	National Government	In kind	0	74 704
Agrocalidad	MAG	In kind	0	2 845
BanEcuador	Nat. Government	In kind	0	4 971
BanEcuador	Nat. Government	Cash	0	953 480
El Ordeño	Private sector	In kind	0	7 038
El Ordeño	Private sector	Cash	0	20 152
Telefónica	Private sector	In kind	0	40 000
Universities	Academia	In kind	0	23 755
		Total co-financing	**22 156 555**	**18 226 895**

Source: Prepared by the authors based on the project data

2.1.1 Description of the context

59. In Ecuador, livestock farming is an important economic activity. On average, the agricultural sector contributed 13 percent to the national economy from 1985 to 2005.[9] In 2008, the agricultural sector's share in the Gross Domestic Product (GDP) was 10.7 percent, placing

[9] La real contribución de la agricultura a la economía de Ecuador. COMUNIICA Online. Edición No 4, II Etapa, octubre-diciembre, 2005. http://webiica.iica.ac.cr/prensa/comuniica/2005/n4-esp/n4.asp

it in second position after oil production. The livestock sector is fundamental to food security. It is also an important source of employment and income in some provinces where small and medium-sized farmers predominate.

60. At the start of the project, livestock activity in the country was extensive (five million hectares geared towards livestock farming and 4.1 million cattle) and of low milk and meat productivity, particularly as regards the activity conducted by small and medium-sized producers. Large areas of land are used, pastures are underutilised, $Co2eq_2$ emissions per unit of milk or meat are indirectly proportional to the level of productivity, which makes it unsustainable. This type of livestock farming involves substantial environmental impacts such as the loss of soil and the risk of desertification, the increase in pollutants and in GHG emissions, and the extension of the agricultural frontier.

61. The CSLP was developed as an alternative to traditional bovine livestock farming in the country. This project aimed to reduce land degradation, mitigate GHG emissions in the livestock sector and increase meat and milk production in cattle.

62. The project used the climate-smart agriculture (CSA)[10] promoted by FAO. It can be considered a demonstrative case that aims to implement the CSA approach in the livestock sector, to contribute to resolving problems linked to climate change. The CSL approach is based on two basic principles: i) increase efficiency in the use of resources; ii) increase in the resilience and management of risks at farm level and systemic level.

63. The project focuses on the elimination of three barriers that hinder the adoption of sustainable livestock practices in the country: i) the institutional framework lacks an integrated livestock approach that makes it possible to revert land degradation, increase the capacity for adaptation to climate change and reduce GHG; ii) the livestock producers apply livestock management practices that are not very sustainable and technology that often worsens the land degradation cycle, the generation of emissions and increases vulnerability to the impacts of climate change; iii) GHG emissions and climate change adaptation measures cannot be measured or monitored due to the lack of monitoring systems in the field.

64. The global environmental objective of the project was "to reduce soil degradation, and mitigate greenhouse gas emissions in the livestock sector of Ecuador", and the project development objective is "to sustainably increase and improve the supply of goods and services from livestock production".

65. The specific objective of the project is "to reduce soil degradation, increase adaptive capacity to climate change, and mitigate GHG emissions by implementing cross-sectorial policies and sustainable livestock management techniques, with emphasis in the vulnerable provinces."

2.2 Theory of change

66. The theory of change (ToC) explains how it is expected that the activities will lead to a series of outcomes that will contribute to the achievement of the latest impacts foreseen. It can be developed for any level of intervention, an event, project, programme, policy, strategy or organisation (FAO,2019). For the final evaluation, the validity of the ToC formulated

[10] In accordance with the FAO definition, the term agriculture includes the production of plants and livestock, as well as fishery and forestry.

during the MTR (FAO, 2019A) was assessed and validated on considering that it continues to remain valid and responds to the current context.

67. The ToC formulated for the project is composed of five strategies of change linked to the project outcomes. Each of them involves a transformative change and a causal relationship with the project activities that culminates in the achievement of the desired long-term change that, in this case, is the global environmental objective of the project. The strategies of change are (Figure 3):

i. Strategy 1. Strengthening of capacities among state civil servants.

ii. Strategy 2. Design and implementation of public policies.

iii. Strategy 3. Transfer of technologies to livestock farmers.

iv. Strategy 4. Monitoring of GHG emissions and adaptation capacity.

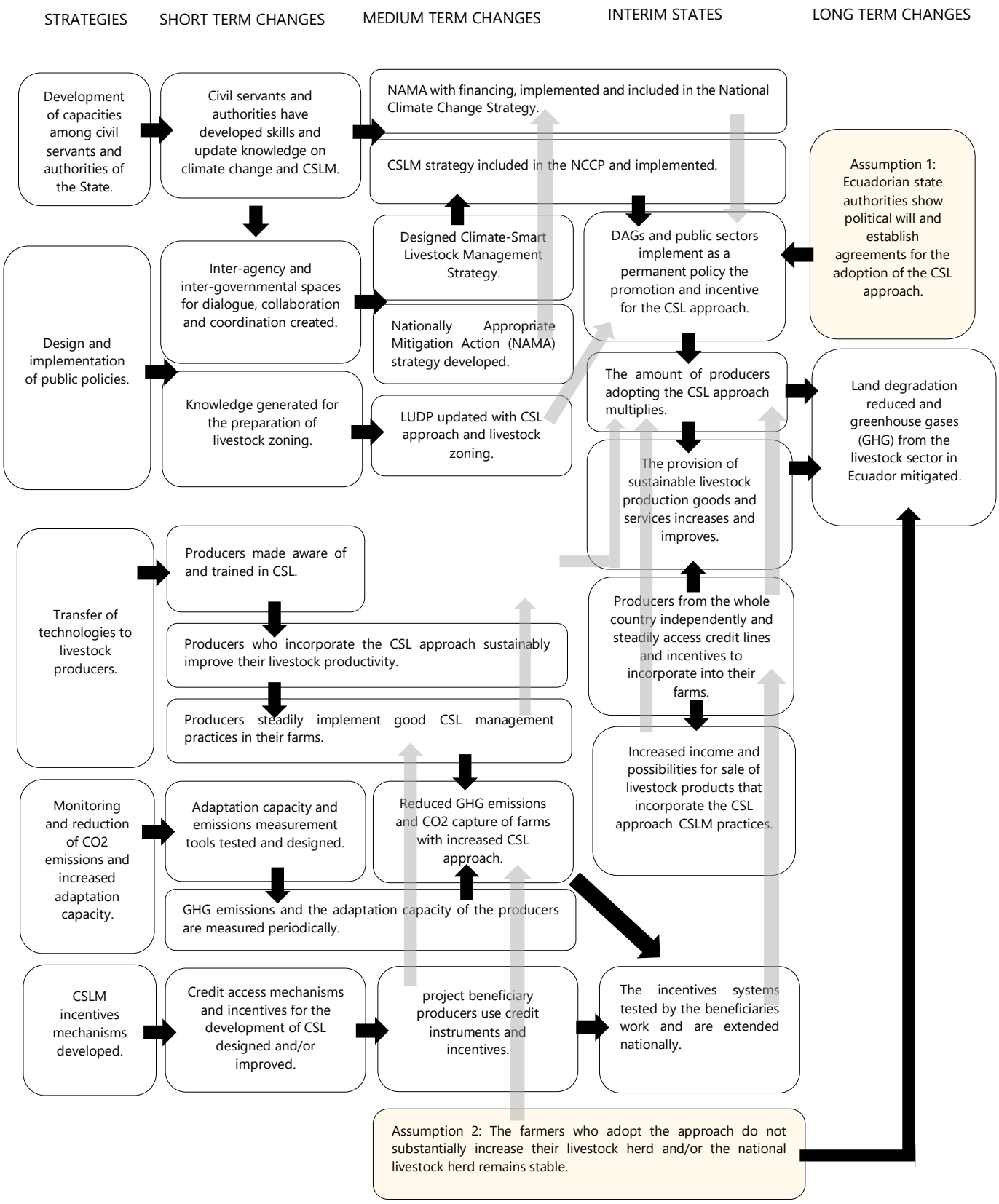
v. Strategy 5. Development of CSL incentives.

68. The short-term changes are understood to be those produced during the execution of the project and that are the result of the implementation of the five strategies of change. The changes in the medium term correspond to the direct and achievable effects once the project implementation has finalised. Noteworthy among these are the development of the national CSL Strategy, the creation of the Nationally Appropriate Mitigation Action for the livestock sector (livestock sector NAMA), the incorporation of CSL criteria in the land use and development plans (LUDP), the adoption of the CSL approach by the livestock producers of the seven provinces in which the project has been implemented and the use of financing mechanisms and incentives by the producers.

69. To achieve the change in the long term (global environmental objective of the project) a series of pre-conditions or interim states and assumptions have to be fulfilled. In this case, the assumptions refer to the need to have the political will of the Ecuadorian state entities to adopt and promote the CSL approach, in addition to the adoption of the approach by the producers at national level.

70. On using the ToC as a basis for the evaluation, it is important to take into account that the short-term changes are linked to activities controlled by the project, whereas in the medium-term changes this does not necessarily occur. Along these same lines, the achievement of the global environmental objective cannot solely be attributed to the project, as external elements have an effect such as changes in policies from the local, national and global level, among many others.

Figure 3: Diagram of the project theory of change



Source: FAO, Interim project Evaluation, 2019A

3. Findings

3.1 Relevance

*The relevance criterion is rated as **Highly Satisfactory (HS)***

Finding 1: From the outset, the project was pertinent and relevant in relation to the strategic and operational instruments and tools of the GEF and of FAO overall, the 2018-2021 FAO-Ecuador CPF and the 2013-2017 national framework of priorities for technical assistance. In addition, the project is in line with objectives 3 and 6 of the 2017-2021 National Development Plan "Toda una Vida", the 2013-2017 National Plan for Good Living and the priorities of the National Climate Change Strategy, and provides specific and tangible outcomes that contribute to the adaptation to climate change and the mitigation of its effects in the country.

Alignment with FAO and GEF priorities

71. The project implementation contributes to the FAO Strategic Framework (2010-2019), specifically Strategic Objective 2 - Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner (outcomes 2.1, 2.2 and 2.4; and Strategic Objective 5 - Increase the resilience of livelihoods to threats and crises (Outcome 5.3). The CSL model contemplates a series of practices that contribute to environmentally-sustainable and less intensive livestock farming featuring better pasture management, combined with improved practices (quality control, management of meadows, production hygiene) that contribute to the productivity of the production units.

72. With regard to the fifth replenishment of the GEF (GEF 5), the project is aligned with the strategic areas climate change mitigation (CCM), objective CCM-5 - Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry (outcomes 5.1 and 5.3); and land degradation (LD) objective LD-1 To maintain or improve the flow of agro-ecosystem services to sustain the livelihoods of local communities (Outcome 1.2) and objective LD-3 To reduce pressures on natural resources from conflicting land uses in the wider landscape (Outcome 3.1).

73. With regard to the SCCF of the GEF,[11] the project is relevant in relation to three SCCF objectives and focal areas: Objective 1. Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level (outcomes 1.1 and 1.2); Objective 2. Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level (outcomes 2.1 and 2.2); and Objective 3. Promote transfer and adoption of technology for adaptation (outcomes 3.1 and 3.3).

[11] The project was financed by the fifth replenishment of the GEF and by the SCCF, jointly.

Alignment with national priorities

74. The project was aligned with specific targets of objectives 7 and 10 of the 2013-2017 National Plan for Good Living, in force during the design. With the first, Objective 7. To guarantee the rights of nature, and promote territorial and global sustainability, through its connection with small-scale livestock producers to establish sustainable practices with the territories that include the conservation and restoration of ecosystems, waste management and risk assessment models. With the second, Objective 10. To promote the transformation of the productive matrix by developing sustainable livestock farming models that include good practices for herd and farm management that contribute to improving the management of the production units.

75. With regard to the 2017-2021 National Development Plan "Toda una Vida", published while the project was being implemented, it is aligned with objectives 3 and 6 on account of promoting the conservation of natural resources and the development of capacities in the agricultural sector to contribute to food sovereignty and the quality of life of rural inhabitants.

76. Objective 3. To guarantee the rights of nature for current and future generations; policies 3.4 Promote good practices that contribute to the reduction of pollution, conservation, climate change mitigation and the adaptation to its impacts, and foster such globally; and 3.5 To promote the urban and rural economy, based on sustainable use and added value of renewable resources, and promote joint social responsibility and the development of the bioeconomy.

77. Objective 6. To develop the productive and environmental capacities to achieve rural food sovereignty and good living; policy 6.5 Promote fair trade of products, with an emphasis on the peasant family economy and on the solidarity-based and popular economy, reducing urban and rural intermediation, and promoting caring for the environment and the recuperation of soil.

78. For its part, the 2012-2025 National Strategy on Climate Change offers two strategic lines or axes of work: (1) adaptation and (2) climate change mitigation, each with specific objectives. The project is aligned with objectives 2, 5 and 6 of the strategic line of adaptation and objectives 1, 2 and 4 of the strategic line of climate change mitigation (Table 3).

Table 3: Correspondence between the national climate change strategy and the project

Adaptation strategic line	Mitigation strategic line	project actions
Objective 2: To initiate actions so that the levels of performance of the productive and strategic sectors are not affected by the effects of climate change.	Objective 1: To identify and incorporate practices suitable for mitigating climate change in the agricultural sector, that can strengthen and improve their productive efficiency and competitiveness.	Tools for quantifying GHG. Analysis of territorial vulnerability.
Objective 5: To sustainably conserve and manage the natural heritage and its marine and terrestrial ecosystem, to contribute to its capacity to respond to the impacts of climate change.	Objective 2: To implement measures that contribute to the integrity and connectivity of the relevant ecosystems for the capture and storage of carbon and sustainably manage the ecosystems.	Zoning of the use of pastures. Sustainable livestock practices: conservation of pastures, restoration of degraded zones.
Objective 6: Taking measures to guarantee access by priority attention groups to resources that contribute towards strengthening their capacity to respond to the impacts of climate change.	Objective 4: To promote the application of practices that make it possible to reduce GHG emissions in the processes related to the provision of services and generation of assets, from their manufacture, distribution and consumption to their final provision.	Promotion of "green" credit lines. Financial mechanisms strategy and CSL incentives systems.

Source: evaluation team

79. With regard to the 2013-2017 national framework of priorities for FAO technical assistance in Ecuador, the project is aligned with priority areas 1 and 4. Specifically priority area 1. To contribute to the strengthening of public policies to sustainably increase systemic productivity; and priority area 4. To contribute to the consolidation of the environmental public policy by means of the conservation, assessment and sustainable management of biodiversity and resources.

80. The project also responds to the new 2018-2021 CPF, developed while the project was underway, specifically priority areas 1, 2 and 3.

81. Priority area 1. Food and nutritional sovereignty and security for everyone by means of the creation of political, social and institutional conditions that contribute to the eradication of hunger and promote the provision and consumption of healthy diets (Outcome 1.2).

82. Priority area 2. Sustainable agriculture and rural development by means of strengthening access by farmers to rural services and assets for innovation, incorporating a rights and gender-based as well as territorial approach, facilitating the transition towards sustainable agri-food and productive systems, in a context of climate change (Outcome 2.1).

83. Priority area 3. Sustainable management of natural resources and resilience to risk, by means of the consolidation of environmental public policy related to the sustainable management and conservation of biodiversity, guaranteeing ecosystem services and the development of strategies for adapting to climate change and mitigating its impacts (outcomes 3.1 and 3.2).

84. At provincial and cantonal level, the project contributed by incorporating CSL criteria in the Loja province LUDP, the main instrument that guides the provincial development.

3.2 Achievement of the project outcomes

*The rating for the criterion on the achievement of the project outcomes is **Highly Satisfactory (HS)**.*

Finding 2: The project managed to achieve the outcomes and targets outlined in the design for all of its components. The project contributed to the reduction of 50 034 tCO_2eq of direct GHG emissions and a reduction of 75 271 tCO_2eq is predicted for 2021; in relation to the pastures, 347 582 tCO_2eq of carbon (stocks) were directly sequestered in 2020 and it is predicted that 506 848 tCO_2eq will be sequestered in 2021.

Finding 3: The project accomplished other achievements not detailed in its design, such as the creation of a green credit line with BanEcuador for CSL practices, the contribution to the formulation of gender indicators for the measurement, reporting and verification system (MRV), and the incorporation of the CSL approach in Ecuador's National Agriculture Plan for 2020-2030, presented by the MAG to the Presidency of the Republic. With regard to technical aspects, the development of online tools to measure adaptation capacity and the reduction of GHG emissions, as well as the development of a mobile phone application, in partnership with the private company Telefónica, are additional outcomes that add value to the project.

Finding 4: The project had an impact on public policies (Component 1) with the incorporation of CSL as one of the lines of action for the agricultural sector in the nationally determined contributions (NDC), the sustainable livestock farming strategy proposal and the livestock sector NAMA proposal. The project was geared towards improving productive practices, contributing to the adoption of CSL practices (Component 2) encompassing 40 388 hectares distributed across 165 pilot farms and 871 replica farms. The adaptation capacity of Ecuador's livestock sector also improved (Component 3), reporting a 7.76 percent increase in adaptation capacity, linked to a reduction in vulnerability (-4.06 percent); reduction of sensitivity (-0.03 percent); and reduction of climate risk (-5.85 percent).

85. The project managed to achieve the outcomes and targets outlined in the design for all of its components. It contributed to the reduction of 50 034 tCO_2eq of direct GHG emissions and a reduction of 75 271 tCO_2eq is predicted for 2021; in relation to the pastures, 347 582 tCO_2eq of carbon (stocks) were directly sequestered in 2020 and it is predicted that 506 848 tCO_2eq will be sequestered in 2021. Consequently, the project resulted in the increased and improved provision of goods and services from sustainable livestock production using climate-smart livestock farming. The project achievements were assessed based on the PRODOC Framework of Outcomes.

Component 1: Strengthening of the coordination and of the institutional capacities to incorporate the CSL approach in the management of the territory and in the development of livestock policies and instruments.

86. The first outcome was focused on incorporating CSL into the climate change adaptation and mitigation policies. In this regard, one of the lines of action for the agricultural sector was incorporated into the NDCs submitted by the Government of Ecuador to the United Nations Framework Convention on Climate Change (UNFCCC) in March 2019, confirming the country's commitment to continue implementing this approach to contribute to CCM. Similarly, work was done on a 2030 Sustainable Livestock Farming Strategy proposal and a livestock sector NAMA proposal was designed, which has become one of the important outcomes of the project, and whose final version is being formulated jointly with the MAG and MAAE.

87. At provincial level, the 2015-2025 Loja province LUDP, the updated version of which was approved by the Provincial Government Council in March 2018, incorporates the CSL approach. In addition, the project submitted proposed guidelines for updating the LUDPs

with a CSL approach to the provincial DAGs of Imbabura, Guayas, Manabí, Morona Santiago and Santa Elena.

88. At municipal level, the cantonal DAG Gonzanamá in the province of Loja developed a certification and incentives system proposal for the agricultural producers that manage their farms sustainably and incorporate CSL practices. This proposal was prepared in collaboration with the MAG, the MAAE and other relevant actors and it is foreseen that it will soon be submitted to the cantonal authorities.

89. The second outcome of Component 1 is the strengthening of the individual institutional capacities of the producers and technicians from the ministries. The project aimed to strengthen the capacities of the field schools[12] that enabled technical assistance and demonstrative practices to transfer knowledge by means of field exercises. In total, 859 training workshops took place as part of the 37 field schools established, with a total of 1 056 producers who graduated across the different regions: 183 in Manabí, 103 in Santa Elena, 114 in Guayas, 160 in Loja, 128 in Imbabura, 228 in Napo and 140 in Morona Santiago. The design of these activities incorporated demonstration plots and the preparation of participatory diagnoses that guided the main topics that the project should address. The latter were conducted in all of the provinces and involved the technicians from the ministries of the environment and agriculture. In addition, during the process of training MAG, MAAE and DAG technicians directly linked to the project in the seven intervention provinces, training was provided to 102 male technicians and 34 female technicians. Furthermore, Loja province has a Sustainable Land Management School that is constantly training provincial technicians from the MAAE, the MAG, DAG, the university and NGOs. In the province of Santa Elena, in connection with the Universidad Estatal de la Península de Santa Elena (UPSE), joint training processes were developed for technical staff in the province.

90. The technical progress of Component 1, at the time of the evaluation, fulfils 99.11 percent of the project targets.

Component 2: Strategies of technology transfer, dissemination and implementation for climate-smart livestock management

91. The project managed to implement CSL practices in 40 388 hectares, including 3 275 conserved and 438 restored, distributed across 165 pilot farms[13] and 871 replica farms,[14] in seven provinces. The first farms that subscribed to the project implemented CSL practices as part of the exercises performed in the framework of the training processes provided by the project (Component 1). The outcomes observed by the livestock farmers interviewed, in terms of greater productivity, added to other tangible benefits such as less soil degradation, led them to decide to adopt CSL practices in their farms and undertake to sustain the approach beyond the lifetime of the project. The close relationship between

[12] The field school, as a participatory and experiential learning method, has been implemented by FAO since the 1980s, and it has been adapting to the different situations and needs across the world. It is based on informal education for adults, where rural families and teams of facilitators exchange knowledge, using the experience and experimentation as a basis by means of simple methods and practices, using farming and the home as a resource for teaching and learning, for the empowerment and development of the communities. *Source*: Lineamientos para el fortalecimiento de capacidades en el Proyecto GCI.

[13] The project defines **pilot farms** as those that implement CSL practices related to food, health and reproduction, for which they received technical support and materials or equipment from the project.

[14] The project defines **replica farms** as those that implement one to four CSL practices and defines influenced farms as those that implement at least one CSL practice.

the implementation of CSL practices and the food security of the livestock farmers, by supporting them in the production of quality meat and milk that is safe and nutritional for their families, is another factor that affected the decision to adopt the CSL approach.

92. CSL practices focus on livestock management and production matters, although they also address environmental aspects. The project developed a total of 75 practices, some specific to the geographic regions, divided into 12 categories: i) farm planning; ii) food; iii) food and nutrition; iv) animal management; v) animal health and welfare; vi) genetic improvement and reproduction; vii) conservation and restoration; viii) management to reduce conflict with wildlife; ix) management of agro-chemicals and veterinary supplies; x) management of livestock waste; xi) management of organic and inorganic solid waste; xii) management and handling of water. These practices have been documented in reports and videos available on the project website. Appendix 3 contains details of the 75 practices developed.

93. The producers of the pilot farms signed a co-execution letter of agreement (LoA) with the project (see Appendix 4), in which they undertook, over a period of three years, among other obligations, to: fulfil the implementation of the CSL practices; participate in the training provided by the project; use the materials, inputs and equipment provided by the project in a sustainable manner; complement the investments required for the implementation of the CSL practices (which involves investing their own resources). To help ensure the sustainability of the CSL practices implemented, the project trained 347 female producers (33 percent) and 709 male producers. Furthermore, within the context of the project, the Napo Province Livestock Farmers' Network (Red de Ganaderos Provincial de Napo) was created, strengthened and received ongoing training; the Loja Province Livestock Farming Board (Mesa Ganadera Provincial de Loja) was created, and strengthening and training are underway; and assistance was given in the creation of three livestock farmers' networks linked to community savings banks and the Agricultural Services Centre (ASC).

94. As regards the second expected outcome of Component 2, related to access to credits and other financing mechanisms, a number of activities can be highlighted that made it possible to increase investments in sustainable land management. FAO-Ecuador signed an agreement with BanEcuador, the main development bank in the country, to set up a green credit line to provide financing to producers participating in the project for implementation of CSL practices (traditionally, BanEcuador has been the leading state bank funding purchases of livestock in this country). The green credit line (pilot) managed to mobilise around USD 473 000 from November 2019 to May 2020, at an annual interest rate of 9.76 percent. The resources were allocated to the implementation of CSL practices on 65 farms spread across the seven provinces in which the project was implemented. Women were the recipients of 25 percent of the credit transactions.

95. All the credits entailed a commitment by the beneficiaries to reduce GHG emissions by implementing CSL practices; to this end, the project set up a monitoring and evaluation system that verified that climate risk was mitigated and GHG emissions were reduced by an amount equal to some one million kg CO_2eq per year.

96. The green credit line remains operational to date and, according to a statement by a representative of BanEcuador, the bank is currently negotiating with the international development bank to obtain resources that would enable the green credit line to remain open under the same credit conditions or even at lower interest rates so that the CSL approach can be replicated throughout the country.

97. In addition, the project managed to raise USD 25 200 from the producers themselves by December 2019 in order to set up seven community savings banks[15] located in five provinces (Imbabura, Loja, Manabí, Morona Santiago and Napo). These are savings and loan schemes managed directly by the producers, primarily women. In 61 percent of the cases reported, the credit transactions sought to ensure the sustainability of the CSL practices they had adopted.

98. The project also focused on promoting the creation or strengthening of local comprehensive businesses, establishing seven Agricultural Services Centres (ASC) in three provinces (Guayas, Morona Santiago and Santa Elena), which could be defined as micro-enterprises that provide the comprehensive technical services that the producers need. These centres are run by local producers and seek to foster the implementation of CSL practices and the sustainability of the practices in progress. As of December 2019, the ASC had mobilised a working capital of USD 39 400. Parallel to the development of these two financing mechanisms, financial training was given to 556 male producers and 411 female producers (42 percent) on financing mechanisms and incentives.

99. The project placed emphasis on changing livestock farming practices and seeking the financing to do so. However, one element that arose during the course of the project was the need to work on developing markets and/or marketing chains in which to include sustainable livestock production as an added incentive to reinforce the adoption of the CSL approach. This was not addressed in the project but given the producers' current level of development, it could be included in new FAO projects or initiatives.

100. The technical progress of Component 2, at the time of the evaluation, reached 98.57 percent of the project targets.

Component 3: Monitoring of GHG emissions and adaptation capacity in the livestock sector.

101. The first output of this component focuses on measuring the reduction in GHG emissions. To do this, the Global Livestock Environmental Assessment Model[16] (GLEAM) developed by FAO for analysis and adaptation was used, generating two GHG emissions monitoring tools, one at the national level and the other at farm level, so that information could be gathered at 165 pilot farms. Technical data was also compiled to calculate the carbon stocks in pastures.

> ***"Through the implementation of the project, a change was rendered in the producers' mentality, converting them from mere livestock keepers into livestock farmers managing their herds with expertise."*** *(Civil servant)*

[15] Savings banks form part of the "social and solidarity-based economy", defined as a form of economic organisation in which the members of the system, individually or as a group, organise and develop production, trade, marketing and financing processes and consumption of goods and services in order to meet their needs and generate income based on relationships of solidarity, cooperation and reciprocity, prioritising work and human beings, as the subject and aim of their activity, focusing on good living in harmony with nature, over appropriation, profit and the accumulation of wealth (Organic Law on the Popular Economy, 2011). In February 2018, the voluntary standardisation of savings banks began, opening up a formal opportunity to invigorate the economy in rural sectors of the country.

[16] The Global Livestock Environmental Assessment Model is a modelling and simulation environment that simulates the processes involved in livestock production activities and their environmental impacts. For further information: http://www.fao.org/gleam/faqs/es/.

102. The project contributed to the reduction of 50 034 tCO_2eq of direct GHG emissions by 2020 and a reduction of 75 271 tCO_2eq is predicted by 2021;[17] 347 582 tCO_2eq of carbon (stocks) were directly sequestered in pastures by 2020 and this sum is forecast to reach 506 848 tCO_2eq by 2021. In both cases, the data correspond to 165 pilot farms, using the measurements taken in 2017 as the baseline.

103. The second output of Component 3 was the design and operation of the tool tested and applied for monitoring adaptation capacity in the livestock sector. Within the project framework, a nationwide climate risk study was conducted using 46 indicators to estimate the level of vulnerability of livestock production systems to the most important climate threats in the project's seven intervention provinces. Based on this, 11 of these indicators were confirmed to help quantify climate risk and the adaptation capacity at farm level, using an online application for this purpose. Thus, farmers could enter data about their farms and obtain a risk assessment and an explanation about how good practices could aid in mitigating the risks. In addition to the information on the website, a document about the entire study, a summary and an informative text were generated.

104. By 2020, the project had reported a 7.76 percent increase in adaptation capacity, linked to a reduction in vulnerability (-4.06 percent); reduction of sensitivity (-0.03 percent); and reduction of climate risk (-5.85 percent). The data correspond to 165 pilot farms, using the measurements taken in 2017 as the baseline.

105. CSL practices also help minimise soil and water degradation, contributing to the restoration of land and waterways and the increase, restoration and conservation of forest cover.

106. The tool for calculating climate risk and measuring adaptation capacity was simplified so that it could be included in the guidelines; and the Tool for Integration of Climate Change Criteria into the Land Use and Development Plans was published by the Consortium of Provincial Autonomous Governments of Ecuador (CONGOPE) and by the MAAE in 2019.

107. To achieve these impacts, the project:

108. Developed two tools available online to monitor the reduction in GHG emissions and calculate adaptation capacity. The online tool for GHG emissions monitoring analyses livestock production, reproduction and feeding data in order to quantify GHG emissions at farm level. It is based on the GLEAM model developed by FAO,[18] adjusted with Ecuadorian sector production data. This tool predicts overall emissions and emission intensity deriving from meat and milk and also identifies livestock practices that can reduce emissions while maintaining the productivity of the system.

109. The online tool for calculating climate risk and adaptation capacity predicts the climate risk and adaptation capacity value at farm level. It is based on analysis of climate risk data for the livestock sector in the seven intervention provinces, taking into account 37 indicators.

[17] By means of the NDC, the MAG and the MAAE undertook the commitment to reduce emissions related to livestock activities, which can be seen as a guarantee of continuity of the CSL practices launched under the project and of fulfilment of the project's emissions reduction targets for 2021.

[18] The Global Livestock Environmental Assessment Model is a modelling and simulation environment developed by the Livestock Information, Sector Analysis and Policy branch of FAO that simulates the processes involved in livestock production activities and their environmental impacts. More information can be found at: http://www.fao.org/gleam/faqs/en

This tool conducts an analysis of the livestock farming practices that are necessary to reduce this risk while maintaining the productivity of the system.

> ***"There is broad acceptance by the beneficiaries because implementing CSL practices (electric fencing, reservoirs, irrigation techniques) enables them to become more efficient in terms of production, which was seen as a decrease in production costs and an increase in productivity and, ultimately, higher family income."*** *(Civil servant)*

110. Technicians at the MAG, MAAE, DAG, BanEcuador and certain universities, as well as producers, were trained in the use of these tools for decision-making so as to aid in ensuring their use after the project ends. Both tools are in the process of being launched in a mobile application developed by private company Telefónica, which will enable them to be used on a larger scale.

111. At the time of the evaluation, it was verified that Component 3 has completed the targets set in the project for this component.

Table 4: Main outcomes and outputs developed by component

<table>
<tr><th>Indicators/targets</th><th>Proposed outputs</th><th>Main outcomes/outputs developed</th></tr>
<tr><td colspan="3">COMPONENT 1 Strengthening of the coordination and of the institutional capacities to incorporate the CSL approach in the management of the territory and in the development of livestock policies and instruments.</td></tr>
<tr><td colspan="3">OUTCOME 1.1 The CSL approach was mainstreamed into climate change mitigation and adaptation policies in the livestock sector and land-use planning.</td></tr>
<tr><td>Indicator CCA-1.1.1: CSL approach incorporated into 5 LUDPs, 1 national CSL strategy and 5 local zoning plans.</td><td rowspan="3">1.1.1. CSLM strategy prepared and adopted.

1.1.2. One NAMA for the livestock sector.

1.1.3. Provincial DAG LUDP with CSL approach and livestock zoning plans.</td><td rowspan="3">• Proposal for sustainable livestock strategy by 2030 in development jointly with the MAG and the MAAE.
• Proposal for NAMA for the livestock sector in development jointly with the MAG and the MAAE.
• Incorporation of CSL, as one of the lines of action for the agricultural sector, into the NDC submitted by the Government of Ecuador to the UNFCCC in March 2019.
• Zoning methodology for pasture use in the project intervention provinces and zoning maps for pasture use in each province and also at national level.
• The 2015-2025 Loja province LUDP (updated version), which was approved by the Provincial Government Council in March 2018, incorporates the CSL approach.
• Proposed guidelines for updating LUDPs with a CSL approach submitted to the provincial DAGs of Imbabura, Guayas, Manabí, Morona Santiago and Santa Elena.</td></tr>
<tr><td>Indicator CCA-1.1.1: 5 provincial governments have tools for incorporating the CSL approach into their land planning processes, 1 national CSL strategy and 5 local zoning plans.</td></tr>
<tr><td>Indicator LD-3 i: Enhanced environment conducive to integrated landscape management: 7 integrated land management plans.</td></tr>
<tr><td colspan="3">OUTCOME 1.2 Institutional capacities for the implementation of CSLM strategies strengthened.</td></tr>
</table>

<table>
<tr><th>Indicators/targets</th><th>Proposed outputs</th><th>Main outcomes/outputs developed</th></tr>
<tr><td>Indicator CCA-2.2.1: 5 national institutions (regional offices); 2 national institutions (central government); 5 provincial agencies.</td><td>1.2.1 Key representatives of MAAE, MAG, provincial and municipal councils with strengthened capacities for the implementation of CSLM measures.</td><td>• 254 male and 194 female (43%) technicians from state institutions (MAG and MAAE at central level and in the seven project provinces; provincial, cantonal and parish DAGs; BanEcuador at the central and provincial levels) trained in the implementation of CSL measures.</td></tr>
<tr><td colspan="3">COMPONENT 2 Strategies of technology transfer, dissemination and implementation for CSLM.</td></tr>
<tr><td colspan="3">OUTCOME 2.1 CSLM approach adopted in degraded livestock areas.</td></tr>
<tr><td>30 000 hectares of degraded livestock areas have adopted CSLM.</td><td rowspan="5">2.1.1 CSLM practices disseminated in degraded livestock areas, with a participatory approach.

2.1.2 Local small-scale and medium-scale livestock producers' networks created and strengthened.</td><td rowspan="5">• 40 388 hectares influenced by the CSL approach, including 3 275 hectares conserved and 438 restored (165 pilot farms and 871 replica farms).
• 709 male and 347 female (33%) producers directly benefited.
• 7.76% increase in adaptation capacity; -4.06% reduction in vulnerability; -0.03% reduction of sensitivity; -5.85% reduction in climate risk (165 pilot farms).
• Direct GHG emissions reduced by 50 034 tCO_2eq by 2020 and a predicted 75 271 tCO_2eq by 2021 (165 pilot farms).
• 347 582 tCO_2eq of carbon (stocks) directly sequestered in pastures by 2020 and a predicted 506 848 tCO_2eq by 2021 (165 pilot farms).</td></tr>
<tr><td>Indicator CCA-3.1.1: i) pasture management: 50% (men and women); ii) animal and herd management: 50% (men and women); iii) water management: 50% (men and women); iv) supplementary feeding: 50%; v) grazing management: 50%</td></tr>
<tr><td>Indicator LD-1. ii: 3 (medium vulnerability).</td></tr>
<tr><td>Indicator CCM-5: i) 2 (development of prescriptions for sustainable livestock management); ii) emissions avoided.</td></tr>
<tr><td>78 052 ton CO_2eq of direct GHG emissions avoided.</td></tr>
<tr><td>247 050 ton CO^2eq of carbon directly sequestered.</td><td></td><td></td></tr>
<tr><td colspan="3">COMPONENT 3 Monitoring of GHG emissions and adaptation capacity in the livestock sector.</td></tr>
<tr><td colspan="3">OUTCOME 3.1 Livestock sector GHG emissions in selected areas have been reduced and monitored.</td></tr>
<tr><td>Indicator CCM-5: Carbon monitoring system: 3 (compiling and analysis of information on carbon stocks).</td><td rowspan="2">3.1.1 Measuring the reduction in CSLM emissions.</td><td rowspan="2">• Tool for measuring GHG emissions on livestock farms available online.
• Development of emission factors in the livestock sector for the national GHG inventory in the framework of the UNFCCC (moved from Level 1 to Level 2).</td></tr>
<tr><td>Emission factors in the livestock sector for national inventory: 1 proposal.</td></tr>
<tr><td colspan="3">OUTCOME 3.2 Adaptation capacity of the livestock sector has been monitored.</td></tr>
</table>

Indicators/targets	Proposed outputs	Main outcomes/outputs developed
The JICA tool and other inputs and methodologies for monitoring adaptation capacity in the livestock sector has been revised.	3.2.1 Tool for monitoring the adaptation capacity of the livestock sector.	• Tool for monitoring the adaptation capacity adjusted, evaluated and operational, available online. • Adaptation of the tool for use in the document 'Tool for Integration of Climate Change Criteria into LUDPs' (MAAE, 2019). • Adaptation of the tool for use in the document 'Supplementary Instrument to the Guidelines for Incorporating Climate Change into Updated Versions of LUDPs (CONGOPE, 2019).
The adaptation capacity monitoring tool for the project is adjusted, evaluated and operational.		
COMPONENT 4 project management, monitoring and evaluation, and knowledge management.		
OUTCOME 4.1 The project has been implemented. The lessons learned and best practices have been documented and disseminated.		
The project was implemented with a results-based management approach. Its sustainability is ensured.	Output 4.1.1. project M&E, management system. Output 4.1.2. project knowledge management system.	• The M&E system with SMART indicators has made it possible to monitor the actions implemented by the project in the seven provinces. • Linking the AOP to outcome and management indicators and activities in each component and province. • Publication of monthly progress report per component and per province. • Use of (open source) database for storage of all project documentation in a single location.

Source: Prepared by the authors using project data

Unexpected outcomes

112. In terms of public policies with national scope, the main unexpected outcomes are: i) creation of the green credit line at BanEcuador; ii) contribution to the formulation of gender indicators for the MRV system of the national climate action; iii) incorporation of the CSL approach in Ecuador's National Agriculture Plan for 2020-2030. At municipal level, the cantonal DAG Gonzanamá in the province of Loja, in alliance with the MAG, MAAE and other stakeholders, developed a certification and incentives system proposal for producers that incorporates CSL practices on their farms, which should be submitted to the cantonal authorities.

113. According to those involved in the project (producers, government and FAO-Ecuador employees) as well as FAO officials across the world, the project is considered a benchmark, due to the positive experiences realised, in terms of training, inter-institutional coordination and the development of public policies that make it possible to achieve the outcomes proposed. This led to the promotion of the dissemination of lessons, experiences and tools, and as such the project team participated in exchanges with other teams and

projects in Colombia, Uruguay, Peru and the Dominican Republic, as well as in Europe and Asia.

114. In terms of technical aspects, the development of an online tool for monitoring GHG emissions and the online tool for calculating climate risk and adaptation capacity had an unexpected reach. Both tools are in the process of being launched in a mobile phone application developed by private company Telefónica, which will enable them to be used on a larger scale, beyond the project.

115. The tool for calculating climate risk and for measuring the adaptation capacity was simplified and incorporated into practical guides that aim to contribute to the incorporation of climate change criteria in the LUDP, facilitating its use in the DAG planning processes at national level.

116. The national zoning map for pasture use that the project developed using the zoning methodology for pasture use in the intervention provinces of the CSL project, is another unforeseen outcome that is very useful for decision-making at the MAG, as it facilitates the development of land use and planning strategies at different scales.

117. Another unexpected outcome was the alliance between the project and the private company El Ordeño, which enabled the training of a group of producers from the canton of Cayambe in the province of Pichincha, linked to the company and the adoption of the CSL approach on their farms. All of the unexpected outcomes reported are positive, no negative unexpected outcomes were reported.

118. The organisation, empowerment and better government arrangements within the groups and associations of producers reflected in the creation of the savings banks and the ASC, in order to favour the socioeconomic development of such producers, was another important outcome not planned for in the project design.

3.3 Development of capacities and management of knowledge

Finding 5: A substantial proportion of the project was geared towards the management of knowledge among producers, involving good practices such as the field schools and the presence of technicians in the territories where the pilot farms were implemented, as well as outside of the project by disseminating and publishing the information. The capacity development strategy was composed of specific programmes for each province, generated under a knowledge management approach, according to the target group, its needs and existing capacities.

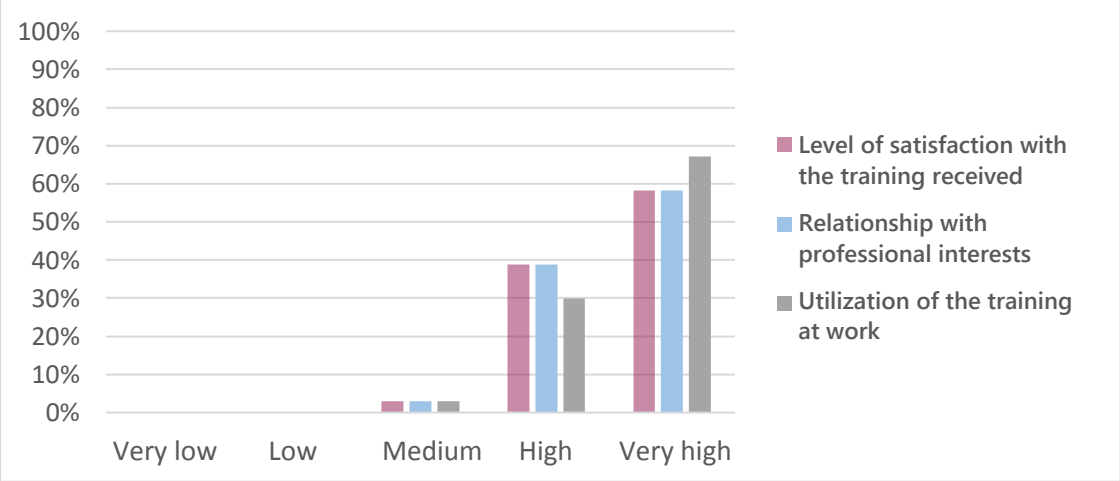
119. The project implemented a participatory rural diagnosis (PRD) in each province to identify the main problems linked to the livestock sector, needs and solutions. The inputs provided made it possible to plan and implement a Capacity Development Strategy, based on the real needs of the stakeholders, addressing two target groups: i) institutional stakeholders at the MAG and at the MAAE at national and provincial level, stakeholders at provincial, cantonal and parish DAGs, stakeholders at BanEcuador at national and provincial level, and in the world of academia; ii) livestock producers, linked to associations, trades or other forms of association, as well as individual producers not belonging to any association and civil society (consumers). The strategy included specific programmes for each province, developed under a knowledge management approach, according to the target group, its existing needs and capacities.

120. In all of the capacity-building activities, the theoretical and practical sessions that took place on the pilot farms were combined. In total, 194 female technicians (43 percent) and 254 male technicians from state institutions were trained. In relation to the second target group, 347 female producers (33 percent) and 709 male producers were trained. The project worked with stakeholders from the two target groups, on the training of promoters, using the methodology of field schools, under the assumption that the promoters contribute to the dissemination of the CSL approach and make the outcomes achieved sustainable after the project ends. In total, 859 training workshops took place as part of the 37 field schools established, with a total of 1 056 producers who graduated across the different regions. Around 22 female and 40 male technicians and producers from the provinces of Loja and Santa Elena were trained as promoters, who will contribute towards spreading and making the CSL approach sustainable. The project exceeded the target of interested parties with strengthened capacities by 6 percent.

121. The capacity-building strategy had an integrated approach, covering: i) the individual dimension of the stakeholders in terms of knowledge, levels of skills (technical and managerial), competences, attitudes, conduct and values by means of the facilitation, training and development of competences; ii) the organisational dimension focused on the institutions that are partners of the project, groups and associations of producers; iii) the favourable environment in reference to the context in which the individuals and public and private organisations work, including the commitment of each group of stakeholders, aspects of governance, power structures, incentives and social norms, among others. This comprehensive approach takes into account that the changes that individuals experience in learning, from the perspective of the chain of outcomes, affects the changes at an organisational level.

122. In a survey completed by the state institutional technicians, who participated in the capacity-building process, 58 percent said that they were highly satisfied with the training received, confirming that these had a close link to their professional interests. Sixty-seven percent confirmed that these training sessions received were extremely useful in their work, and enabled them to provide technical assistance and advise livestock farmers on the implementation of the CSL approach (Figure 4). Appendix 5 summaries all of the results of the consultation conducted online.

Figure 4: Evaluation of the training provided by the CSL project to the state institutional technicians



Source: evaluation team

123. In the case of the institutional stakeholders, given the capacities and the training of the technicians participating, the training topics were defined in a participatory manner, providing CSL methodologies, technologies and practices to improve the performance and knowledge of the technical staff, as well as of the decision-making authorities at institutional level.

3.4 Efficiency

The rating for the criterion regarding the overall efficiency of the project is ***Highly Satisfactory (HS).***

Finding 6: The management model of the project, in which FAO held the role of implementing and executing agency, proved to be efficient and suitable for the context, and facilitated the achievement of outcomes and fulfilment of objectives. The steering committee (composed of the MAG, the MAAE and FAO, with a decision-making role) and the management committee (composed of the same institutions, responsible for operational and management matters) worked effectively and facilitated inter-institutional coordination. FAO acted as a neutral third party, technical advisor and bridge when there was a change in authorities and/or in technical staff with roles in the project. The communication strategy made it possible to disseminate most of the documentation that the project generated, positioning the CSL approach among other key stakeholders, contributing to the achievement of the outcomes and targets proposed.

Finding 7: The project had a budget of USD 3.85 million from the GEF and real co-financing of USD 18.22 million provided by the MAG (56.4 percent), the MAAE (22.2 percent), the beneficiary producers and farmers (9.6 percent), national government institutions (5.7 percent), autonomous provincial, cantonal and parish governments (3.6 percent) and other key stakeholders, including co-financing not planned for during the design phase. The budget was executed by FAO, in line with that planned.

Project design

124. The project design and the framework of outcomes proposed are relevant and internally coherent, the objectives and indicators are clear and feasible, which contributed enormously in the implementation phase.

Project management model

125. The management model of the project, in which FAO held the role of implementing and executing agency, proved to be efficient and suitable for the political and social situation in the country, and facilitated the achievement of the objectives, outcomes and targets proposed. Having permanent technical staff in the seven provinces, in which the project was implemented, facilitated the interventions at local level and made it possible to reach a high number of interested parties, including state institutions, producers and private stakeholders. The budget was executed efficiently and in line with the deadlines established. The project management model fell to FAO-Ecuador, given the changes in LTO during the implementation of the project. Despite the country's social and political situation during the lifetime of the project, there were no substantial delays or effects that hindered the development of the project.

126. Generally speaking, the provision of supplies, the recruitment and purchases were relevant for the implementation of the practices in the territory, and facilitated the achievement of the objectives, outcomes and targets proposed. There were some delays resulting from the

change in technical staff to address that related to the topic of incentives and other needs not planned for. The budget was executed efficiently and in line with the deadlines established. Appendix 6 contains the financial details of the project.

127. The permanent connection and support that the technical staff in the provinces gave the producers contributed enormously to their empowerment and commitment. The recruitment of a gender specialist and a communicator highlighted the flexibility and efficiency of the project management model, focused on the achievement of the outcomes and targets proposed. The creation of a technical team that participated in the project contributed to most of the outputs being prepared by the project specialists, reducing the need to recruit consultancies, therefore showing the virtues and efficiency of the management model used. The coordination of the whole technical and administrative team, at central level and in all seven provinces, led by an excellent project coordinator, was far-reaching, and made it possible to achieve and exceed the outcomes and targets proposed.

Inter-institutional coordination

128. The project steering committee (composed of the ministers of the MAG and MAAE and the FAO representative with a role in decision-making) and the management committee (composed of focal points of the same institutions with responsibilities relating to project operation and management matters) worked effectively (in other words, with periodic meetings that made it possible to make decisions and take corrective measures in time) which promoted inter-institutional coordination focused on the project outcomes. At all times, FAO played the role of neutral third party, and facilitated the coordination between both ministries, particularly at times when there was a change in authorities and/or technical staff with roles in the project, eliminating delays and other negative impacts linked to said changes.

129. At provincial level, the level of coordination of the project with the MAG, the MAAE and DAGs was variable. In most of the provinces, the project technicians were hosted in the MAAE facilities, facilitating inter-institutional coordination, as well as an ongoing presence and trusting relationships inside each territory.

> ***"The project staff were very suitable, trained, had detailed knowledge of the topic and that is difficult to find. They worked closely with the farmers and people in the countryside, and that connection they created meant that the communities embraced the project more."***
>
> *(Civil servant)*

Communication strategy

130. The project communication strategy and the recruitment of a communication specialist were not part of the design but responded to a need felt in the first year of implementation. The project team viewed the extensive network of contacts linked to the livestock sector, the contribution of the sector to food security and the innovative nature of the project as opportunities to be addressed by the communication strategy. Having a knowledge management platform (online website), in addition to the commitment of authorities and technicians of partner institutions, facilitated the development and implementation of the strategy, making it possible to position the CSL approach among the key stakeholders of the livestock sector and civil society, to contribute to the project outcomes and targets.

131. Despite having a limited budget, the communication strategy made it possible to share the outcomes obtained to contribute to decision-making and to the proposal of public policies,

disseminate technical studies and documents generated by the project and raise awareness among the public in general of the importance of the implementation of good livestock practices and the benefit of such. The strategy was implemented with the support of the partner institutions, both at national and provincial level, using social networks, written press, radio and television, as well as the online portal of the project.

132. At the time of the final evaluation, the CSL knowledge management platform has a series of thematic documents that the project prepared, a geoportal, an online tool for monitoring GHG emissions, an online tool for calculating climate risk and adaptation capacity, and a multimedia section on CSL practices with educational videos and infographs.

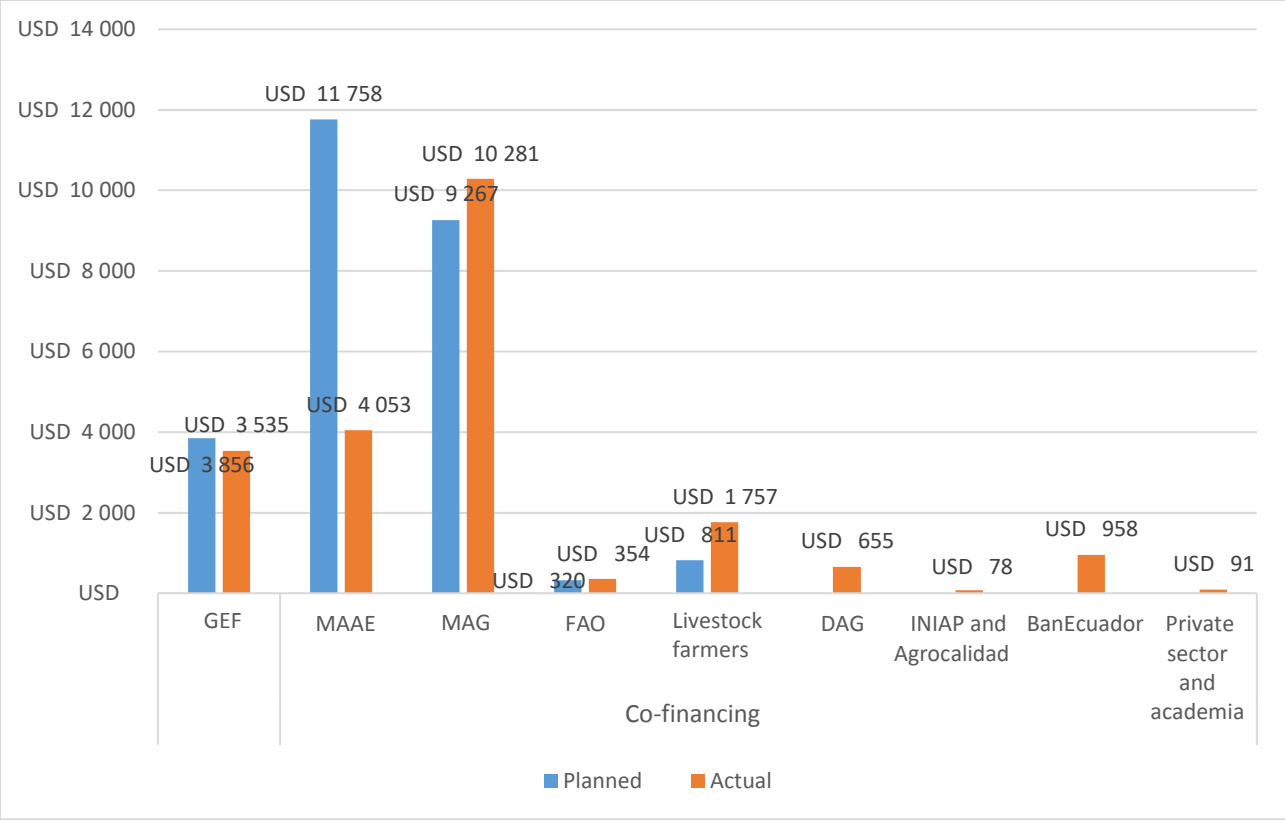
Figure 5: Platform for CSL knowledge management

Source: http://www.ganaderiaclimaticamenteinteligente.com/index.php

Co-financing

133. The project was designed to assist both ministries in the implementation of the CSL approach, at a time when the country had a relatively stable macroeconomic position and both ministries had resources that they would use to co-finance the project, pledging USD 22.1 million (illustration 6). However, this situation gradually changed during the execution of the project and on completing its implementation, only USD 18.2 million had been received in co-financing (includes new co-financing not planned for in the design stage), which was managed directly by the MAG, the MAAE and other partners in the case of new co-financing. Appendix 6 contains the breakdown of co-financing received.

Figure 6: Project financing (in USD)



Source: Prepared by the authors using project data

134. The new co-financing mobilised, not taken into account in the design, came from the producers who put their money in the savings banks and in the ASC, with an investment of around USD 64 600 in December 2019. This evidence shows a commitment by the beneficiaries to continue to implement the CSL approach, in addition to being a tool that enables the sustainability, and even the promotion, of the replication of the CSL practices implemented. In addition, the project mobilised USD 473 000 corresponding to the green credit line implemented by BanEcuador, granted to the producers linked to the project.

3.5 Monitoring and evaluation

*The rating for the monitoring and evaluation system of the project is **Highly Satisfactory (HS).***

Finding 8: The project monitoring and evaluation system (M&E) was efficient and contributed to the implementation of the activities planned at national level and in the seven intervention provinces. The provincial AOP included management and outcome indicators, and facilitated the monitoring and evaluation of the outcomes and achievements fulfilled every month. In addition, indicators were prepared to measure the impact of the CSL model by means of the reduction of GHG emissions, the adaptation capacity and increased productivity.

135. The project has a M&E system with SMART indicators[19] which made it possible to closely monitor the implementation of the activities of each component, both at national level and in the provinces. The provincial AOP, developed based on the needs and other factors specific to each province, contain outcome and management indicators, linked to the specific activities providing the foundations for the monitoring of the outcomes and targets achieved vs. those proposed in the project design.

Figure 7: Main elements of the project monitoring and evaluation system

Year	Month	Activities
2016	Dec	First meeting of the project steering committee for the presentation of progress and review and validation of the 2016-2017 AOP
		Half-yearly project progress report (PPR), for the period from August to December 2016
2017	Feb	Information bulletin no. 1
	Apr	Progress report no. 2
	Jun	Submission of the FAO-GEF project Implementation Review (PIR) for the period from 1 July 2016 to 30 June 2017
	Jul	Informative bulletin no. 3
		Fifth meeting project management committee for presentation and validation of the planning and fulfilment of project activities
	Oct	Meeting of the project steering committee for the presentation of progress, presentation of provincial intervention plans and review and validation of the proposal for the budgetary reform
	Dec	Half-yearly project progress report (PPR), for the period from July to December 2017
2018	Feb	Progress report no. 4
	Jun	Progress report no. 5
		Submission of the FAO-GEF project Implementation Review (PIR) for the period from 1 July 2017 to 30 June 2018
		Half-yearly project progress report (PPR), for the period from January to June 2018
	Nov	Progress report no. 6
	Dec	Report on Financial Mechanisms and Incentives Systems for Climate-Smart Livestock farming
		Global report on the Progress of Financial Mechanisms and Incentives
		Half-yearly project progress report (PPR), for the period from July to December 2018
2019	Apr	Progress report no. 7
	Jun	Progress report no. 8
		Submission of the FAO-GEF project Implementation Review (PIR) for the period from 1 July 2018 to 30 June 2019
		Half-yearly project progress report (PPR), for the period from January to June 2019
	Sep	Progress Report no. 9
	Dec	Progress Report no. 10

[19] Specific, Measurable, Achievable, Realistic and Time-Bound.

Year	Month	Activities
		project progress report (PPR), for the period July to December 2019
2020	Jan	Eleventh meeting of the project management committee for the presentation and feedback on the fulfilment of the CSLP activities in 2019 and presentation of the approval of the 2020 Annual Operating Plan
		Fifth meeting of the project steering committee for the presentation and feedback on the fulfilment of the CSLP activities in 2019 and presentation and approval of the 2020 Annual Operating Plan
	Mar	Communication Content Report
	May	Progress Report no. 11
	Jun	Submission of the FAO-GEF project Implementation Review (PIR) for the period from 1 July 2019 to 30 June 2020
		Half-yearly project progress report (PPR), for the period from January to June 2020

Source: Prepared by the authors using project data

136. The project M&E system was not modified during the implementation phase. The frequency of the collection of data and the monitoring visits to the territories was variable, based on the progress reported by each province. As part of the monitoring system, the technical team in each province held weekly planning meetings and, in some cases, periodic coordination workshops, with the focal points of the MAG and MAAE.

137. The publication of monthly progress reports based on the data from the M&E system, detailing the progress per component and per province, facilitated the decision-making in real time by identifying the components and/or provinces with delays in the implementation, that required advice and/or additional support from the project specialists with headquarters in Quito. In many cases, visits were programmed to the provinces that experienced the longest delays in the implementation of activities, as a monitoring strategy to avoid delays and ensure the achievement of the outcomes and targets proposed.

138. The use of an online (free) application to store all of the project documentation in a single location made it possible for the technicians in the provinces to share and access work documents directly. The progress reports published periodically during the implementation of the project are another important tool for monitoring the scope of the outcomes and targets, as well as offering transparency and accountability in relation to the project activities. These small actions strengthened the M&E system and turned it into an accessible and useful tool for the whole project team and even contributed to completing an evaluation remotely by means of the detailed review of documents.

3.6 Commitment of the project stakeholders and interested parties

*The criterion regarding the involvement of stakeholders is rated as **Highly Satisfactory (HS)***

Finding 9: The work methods used in the provinces made it possible to ensure the participation and empowerment of the interested parties in the processes of diagnosis, planning and implementation of CSL practices. The producers of the pilot farms committed to a period of three years (they signed a LoA for the co-execution of the project) to implement the CSL practices, to participate in training, to use the materials, inputs and equipment of the project responsibly and supplement the investments required to implement CSL practices (investment of own resources), among other obligations.

Participation of the interested parties in the diagnosis, planning and implementation of CSL practices

139. The completion of a participatory rural diagnosis (PRD) in each province made it possible to identify the main needs, problems and the potential of the livestock sector, combined with possible alternative solutions, facilitating the creation of a capacity-building strategy focused on two target groups: i) institutional stakeholders at the MAG and at MAAE at national and provincial level, stakeholders at provincial, cantonal and parish DAGs, stakeholders at BanEcuador at national and provincial level, and in the world of academia; ii) livestock producers, linked to associations, trades or other forms of association, as well as individual producers not belonging to any association and civil society (consumers).

140. The involvement of different stakeholders in each territory in which the project was executed made it possible to establish alliances and promote the active participation of the producers, from the definition of the problem to the search for community solutions. This explains the high and ongoing participation of the producers and of the staff of the ministries in the project training activities. Another example of the involvement of stakeholders is the investments made in the plots of the livestock producers in order to maintain the lessons learned in the CSL project.

141. At local level, LoA were signed for the co-execution between the project and the producers, in which such undertook, for a period of three years, to fulfil the implementation of the CSL practices. The commitments made included participating in the training provided by the project; using the materials, input and equipment provided by the project responsibly; and complementing the investments required for the implementation of the CSL practices. These agreements were key for achieving the outcomes and targets proposed, particularly those related to the adoption of CSL practices.

142. To ensure the participation and empowerment of the parties, the project sought the inclusion of the livestock producers (local communities) from the participatory rural diagnosis to the planning and implementation of CSL practices. This was also closely related to the strengthening of skills that combined theoretical and practical sessions that took place on the producers' farms. The completion of a PRD in each province, combined with the field schools, made it possible to ensure the participation and empowerment of the interested parties in the diagnosis, planning and implementation of CSL practices.

Participation of other stakeholders

143. The private company El Ordeño[20] established an alliance with the project in order that its milk-producing members in the canton of Cayambe, province of Pichincha (outside of the area of implementation of the project), could be trained on the implementation of CSL practices. El Ordeño ensured that the farms that provided it with milk in one of its areas of operation implemented the CSL approach. This company is known for promoting sustainable development by means of an inclusive model of general wellbeing that aims to grow together with its members. Several of those interviewed from the project team stated that other private companies reached out to join the project but nothing came to fruition,

[20] El Ordeño is an Ecuadorian private company, and dairy producer, which promotes the comprehensive development of society, by means of an associative and inclusive business model and a principle of governance that is based on peoples' wellbeing. It has 72 community collection centres and it is supplied by around 6000 small and medium milk producers distributed across 11 provinces. For further information: https://www.facebook.com/elordeno/?rf=185927861544384

partly because of the current complexity[21] at FAO to develop work strategies together with private stakeholders.

144. The NGO *Children of the Andes Humanitarian* with headquarters in the canton of Otavalo, province of Imbabura, manages the intercultural community educational centre "Bilingüe Saminay–El Legado" which since 2009 provides free services in the field of education, transport and food for young people (in the majority indigenous) of low economic resources from several communities in the province. The project established a cooperation agreement with the NGO to implement CSL practices in the farm owned by the educational centre, providing it with a dairy processing plant, in order to give added value to the milk produced by the educational centre and the neighbouring communities. It is foreseen that young students will be able to replicate the CSL practices in their communities.

> ***"The technicians promoted the participation of women, as in some locations, migration has meant that women are fronting livestock systems, and as such, thanks to the practices implemented by the project, the work that these women do has been made easier."*** *(Civil servant)*

Institutional agreements and alliances

145. The participation of the DAGs in the intervention provinces was variable. In the case of the province of Loja, the coordination between the project team, the MAG, MEEA and provincial DAG was excellent, making it possible to achieve outcomes such as the incorporation of the CSL approach in the provincial LUDP. Along these same lines, two cantonal DAG from the province developed innovative initiatives to monitor the outcomes achieved by the project.

146. The agreement between FAO-Ecuador and BanEcuador to open a green credit line to finance the implementation of CSL practices for the producers linked to the project (pilot), is an outcome that goes beyond the targets proposed in the design, in addition to generating co-financing for the project amounting to USD 473 000.

3.7 Cross-cutting topics: social equality and gender aspects

Finding 10: From the moment the gender equality strategy was developed, the project was focused on promoting gender equality by supporting men and women in all actions they perform linked to livestock production, promoting equal opportunities and the generation of affirmative actions geared particularly towards smallholders, female heads of households and women who head livestock farming, in order to contribute to the elimination of obstacles that hinder their development. The strategy responded to the specific needs and problems of men and women working with dairy cattle and cattle for meat, including members of indigenous communities and vulnerable groups.

The cross-cutting topic criterion is rated as ***Highly Satisfactory (HS)***

Gender-sensitive considerations in the design and implementation of the project

147. The project did not take the mainstreaming of the gender approach into consideration in its design. The recruitment of a gender and social affairs specialist made it possible to develop the participatory analysis of the gender relations in the meat and dairy livestock farming systems with different outcomes for the coastal, mountainous and Amazon

[21] For example, the signing of letters of agreement, the times required to approve agreements, and the fulfilment by the partners of the FAO standards such as due diligence, among others.

regions, that served as a basis to prepare the gender equality strategy that aimed to promote the participation of women in the project spaces. Despite not having a specific budget, the mainstreaming of the gender-sensitive approach in three project components, its alignment with the provincial AOP and the recruitment of a specialist to lead the implementation of the strategy confirm the efficiency of the project management model, which facilitated the mainstreaming of the gender-sensitive approach from national to provincial level, reaching the producers' farms.

Participation of women

148. The gender equality strategy focused on the need to improve the quality of the participation of women in the project spaces, develop and strengthen their capacities to promote the adoption of CSL practices.

149. In the capacity-building processes, 33 percent of the participants are female producers. In many cases, the project worked jointly with couples (men and women) as a means of support for the role of women as drivers of transformation and appropriation of CSL practices, who have been taking on leadership roles and starting to actively participate in decision-making.

150. In the specific training sessions regarding financial education topics, 42 percent of the participants are female producers, many with an important role in the handling of the family livestock farming economy or of small scale livestock farms. The creation of community savings banks enabled women to participate under equal conditions to men, with women making up 49 percent of the constituents of these credit and savings systems, and a 46 percent participation of women in the management and decision-making spaces of the savings banks. In the case of the ASC, 15 percent of its members or constituents are women with a 21 percent participation in the decision-making spaces.

151. In relation to the access to credits, 25 percent of the green credit line credits from BanEcuador were granted to women. Fifty-five percent of the credits granted by the savings banks were provided to female producers.

152. In the capacity-building processes geared towards technicians of public institutions, 43 percent of the participants are women. Some of those interviewed stated that having women on the project team, and in the institutional counterparts, was an important factor for ensuring the participation of women producers throughout the project.

153. It was found that the project had no negative impacts on women. However, the analysis performed clearly showed how the daily working days are greater for rural women linked to livestock farming. The project focused on promoting equal opportunities and generating affirmative actions with a particular focus on women, such as the creation of income opportunities for female heads of households; special technical consultancy for beneficiaries who requested one of the incentives available at national level; participation of women in the creation of local networks of small and medium male and female producers; promotion of the participation of women in training, meetings and technical assistance from the project; among others. This was all done to enhance their role in livestock production and make it more visible.

Equal participation and benefits

154. The project focused on promoting gender equality by supporting male and female producers in purely livestock farming activities; developing new livestock management methods and techniques (Appendix 3), in order to contribute to improving their income, reducing environmental degradation and combating climate change. The gender equality strategy made it possible to mainstream the gender approach in the project actions, seeking equal opportunities and the development of affirmative actions geared towards small farmers, focusing on female heads of households who head livestock farming, to therefore contribute to the elimination of obstacles that hinder their personal development and the development of the sector.

155. The strategy incorporated a series of guidelines, which respond to the specific needs and problems in each territory of the men and women working with dairy and meat livestock farming, including members of indigenous communities and vulnerable groups. The emphasis on women complied with the need to improve the quality of their participation, and develop and strengthen their capacities geared towards promoting the adoption of CSL practices. The participatory analysis of the gender relations in the meat and dairy production systems and the PRD, completed in the seven provinces were used as an input for the formulation of the strategy; and the FAO gender equality policy was used as a reference and guide. The actions and effects linked to the implementation of the gender equality strategy were incorporated into the M&E system, under the recommendation of the MTR. In the provinces of Imbabura and Napo, some of the project participants belong to indigenous communities. Although the FAO policy on indigenous and tribal communities was not explicitly considered in the implementation of the project, in accordance with that stated by the MTR and confirmed by several stakeholders during the interviews, participatory work methods were used that facilitated the implementation of the project within a framework of respect and collaboration with the stakeholders belonging to indigenous communities, in line with the FAO internal policy principles.

3.8 Sustainability

*The sustainability criterion is rated as **Moderately Unlikely (MU)**.*

Finding 11: The project managed to anchor the CSL approach in public policy instruments, highlighting the commitment made by the MAG, the MAAE, BanEcuador and the Loja provincial DAG to ensure the sustainability of the outcomes achieved in the environmental, social, institutional and financial sphere. In the other provinces, the involvement of the DAGs was variable, but the foreseen actions and coordination were maintained. The main barrier that limits the sustainability of the project achievements is the economic crisis that Ecuador has been facing over the last two years, exacerbated by the COVID-19 pandemic since March 2020, as well as the lack of a formal project exit strategy that all of the stakeholders and parties involved are aware of.

> ***"We started working with timid women, who just awaited orders from their husbands. By means of the training provided, however, the women began to become aware of their skills and their leadership role in livestock farming."*** *(Female producer from Morona*

Commitment by the state institutions to continue promoting CSL

156. The incorporation of CSL in the NDC (submitted to the UNFCCC), as a line of action for the agricultural sector, in combination with the fulfilment of the national target to reduce GHG emissions from livestock farming, shows the commitment made by the MAG and the MAAE

of continuing to promote the CSL approach in the country. The creation of a green credit line, at BanEcuador, to promote CSL is also a clear sign of institutional commitment at the highest level.

157. The preparation of the 2030 sustainable livestock farming strategy proposal and the livestock sector NAMA proposal, together with the MAG and the MAAE, reflect the institutional commitments to continue promoting the CSL approach and even extend it to other provinces of the country. The integration of the CSL approach in Ecuador's National Agriculture Plan for 2020-2030 submitted by the MAG to the Presidency of the Republic, shows the commitment of this ministry to sustain this approach.

158. At provincial level, the incorporation of the CSL approach in the LUDP in the province of Loja, updated in March 2018, confirms the commitment of the Loja provincial DAG. The university Universidad Nacional de Loja (UNL) incorporated themes from the project into the ongoing training programme for the management of risk, the adaptation of climate change and the mitigation of its effects. The Provincial Department of the MAG incorporated into its work team a professional who was part of the provincial team of the project, in order to provide sustainability and replicate the CSL approach.

Commitment by the livestock producers to continue implementing CSL

159. The producers interviewed stated that they will continue to implement the CSL approach, given that the CSL practices have led them to increase productivity, of both meat and milk, and they have also noted tangible environmental benefits such as improvements in the quality of the soil, pastures and access to water. In addition, the project is closely linked to matters of food security, by supporting livestock farmers in the production of better quality meat and milk that is safe and nutritional.

160. In addition, the project greatly contributed to the organisation and empowerment of the groups and associations of participating livestock farmers, combined with the creation of savings banks and the ASC. The signing of the LoA for co-execution by the project and the producers, in which such undertook to complement the investments required for the implementation of the CSL practices, and to use their own resources to create savings banks and the ASC, highlight the intention of the producers to continue implementing the CSL approach on their farms. A pending matter is working on the commercial insertion of the outputs resulting from CSL as an incentive to adopt sustainable practices.

Exit strategy

161. The project undertook a series of actions to give continuity to the outcomes achieved and promote the extension of the approach at national level. However, it did not formalise an exit strategy in a specific document, which the interested parties were aware of, and even some of those interviewed said that they did not know the project would be ending soon.

Elements that could limit the sustainability of the benefits generated.

162. The economic crisis that the country has been facing over recent years, exacerbated by the COVID-19 pandemic is the main barrier limiting the sustainability of the benefits the project has created. However, this crisis also involves the opportunity of connecting the implementation of CSL practices to international financing for the climate linked to the reduction of GHG emissions, the adaptation to climate change and the reduction of environmental degradation. In addition, the existence of tangible benefits among the producers could become motivation for replicating the model. All of the producers

interviewed stated that the production of meat and/or milk improved with the implementation of the CSL practices. Data from the project indicates that by 2019, there was a 12.63 percent average increase in the productivity of milk and a 13.08 percent average increase in meat productivity, using a 2017 survey the project offered to producers, which was based on perceptions, as a baseline. In the case of dairy livestock farming, producers also reported improvements in the quality of the milk, reflected in the increase of solids and the reduction of bacteria.

163. The average increase in income that the producers received was 15.83 percent. According to the specialists consulted, the meat livestock farming systems, as well as the investments made in infrastructure would have greater increases in productivity three or four years after the implementation of the CSL practices.

164. A risk that could affect the replicability of the project in other provinces of the country is linked to the political sphere, in other words, the lack of political will combined with a poor understanding of the approach, which incorporates complex technical elements such as the reduction of GHG emissions, the use of technology and the strengthening of local government.

165. At local level, the lack of support for the producers from the technicians at the MAG, MAAE and DAG could limit the continuity of the approach. Added to this are external factors such as land ownership and local governance that could have a negative impact, for example, on the access to credit to continue with the approach.

Measures and actions that contribute to ensuring the sustainability of the benefits generated

166. In addition to the incorporation of the CSL approach into public policies, the project supported the creation of initiatives that promote the sustainability of the outcomes at provincial and cantonal level: i) zoning methodology for pasture use in the intervention provinces of the CSL project and associated maps, used by the MAG as a guide for decision-making; ii) research projects in the area of academia (UPSE, Universidad de Guayaquil, UNL and Escuela Politécnica del Chimborazo); iii) CSL programmes and projects to be implemented within the framework of the LUDP of the Paltas cantonal DAG in the province of Loja iv) agreement with the NGO *Children of the Andes Humanitarian* for the implementation of the CSL approach and the production of dairy in the province of Imbabura; v) certification and incentives system proposal of the Gonzanamá cantonal DAG, in the province of Loja; vi) agreement with the private company El Ordeño for the implementation of CSL practices in the Cayambe canton, province of Pichincha.

167. In addition, the MAG is in the process of developing a methodological guide on sustainable livestock farming certification with the aim of promoting sustainable production systems that contribute to improving the productivity of the livestock sector and to mitigating GHG emissions, promoting animal welfare and guaranteeing the origin of the product for the end consumer. The guide was prepared by the MAG with technical support from the project and from the MAAE, Agrocalidad and the project ProAmazonía. The MAG is committed to this certification becoming a tool that will make it possible to ensure the sustainability of the CSL approach.

168. The noteworthy pending elements include the finalisation of the sustainable livestock farming strategy by 2030 and its formalisation by the MAAE; the finalisation of the livestock sector NAMA and its formalisation by the MAAE before the UNFCCC, to later identify possible sources of financing in order to implement both proposals, which would make it possible to make the implementation of the CSL approach sustainable.

169. One pending topic that was not addressed by the project is the need to connect the producers who adopted the approach with new market options and analyse the value chains of milk and meat to identify market alternatives with better economic conditions for them. This would make it possible to generate an additional incentive to adopt the CSL approach.

170. Another pending topic, which goes beyond the scope of the project, is the relationship and joint work of these kinds of projects with the private sector and how FAO, by means of alliances with private stakeholders, could promote the adoption of the CSL approach (or other approaches) and their extension across the country. To this end, it would be necessary to consider a strategy, as part of the design of new projects, to fulfil the standards required by FAO, for example, due diligence.

3.9 Progress towards impact

Finding 12: The project made it possible to validate and consolidate a livestock development model by means of which the producers adopt environmentally sustainable practices and benefit from an improvement in the management of their farms that involves an increased income and reduced losses or hardship.

171. The project contributed sound methodological bases, developed public policy documents and positioned CSL on the national agricultural agenda. It also strengthened capacities adapted to the needs of an extensive group of stakeholders distributed across seven provinces, setting out the correct path for the implementation of CSL in Ecuador, which will increase and improve the provision of goods and services from livestock production in a sustainable manner.

172. One of the gaps in the project is the lack of a connection with the market that would make it possible for the farms that adopted the CSL approach to strengthen the production of meat and milk, offering an additional benefit for the producers. It is a topic that was not addressed by the ToC at the time either.

173. The project alliance with the private company El Ordeño enabled its members to train and implement CSL practices in one of the areas of intervention of this company in the Ecuadorian Sierra. At cantonal level, the DAGs of Gonzanamá and Paltas of the province of Loja developed proposals for continuing to implement the approach in their territories, with support from the provincial DAG, the MAG and the MAAE. Both initiatives offer good perspectives of making the CSL approach sustainable and contributing to the reduction of land degradation and the mitigation of GHG emissions in the livestock sector in Ecuador.

Figure 8: Evaluation of the project according to the GEF rating criteria

FAO-GEF ratings criteria	Rating	Brief comments
1) RELEVANCE		
General reference to the project	HS	The project maintained its relevance and pertinence from start to finish.
2) ACHIEVEMENT OF THE PROJECT OUTCOMES (EFFECTIVENESS)		
General evaluation of the project outcomes	HS	The project fulfilled the targets defined in the design and others that were not planned.
Outcome 1.1 The CSL approach was mainstreamed into climate change mitigation and adaptation policies in the livestock sector and land-use planning.	S	The sustainable livestock strategy and the livestock sector NAMA have to be formalised by the ministries.
Outcome 1.2: Institutional capacities for the implementation of CSLM strategies strengthened.	HS	The expected targets were fulfilled.
Outcome 2.1: CSLM approach adopted in degraded livestock areas.	HS	The expected targets were fulfilled.
Outcome 3.1: Livestock sector GHG emissions in selected areas have been reduced and monitored.	S	The targets proposed will be fulfilled in 2021.
Outcome 3.2: Adaptation capacity of the livestock sector has been monitored.	HS	The expected targets were fulfilled.
Outcome 4.1: The project has been implemented. The lessons learned and best practices have been documented and disseminated.	HS	The expected targets were fulfilled.
3) EFFICIENCY, IMPLEMENTATION AND EXECUTION OF THE PROJECT		
General quality of the adaptive management and implementation (implementation agency)	HS	The project was implemented in a satisfactory and efficient manner.
Quality of execution (execution agencies)	HS	The project was executed in a satisfactory and efficient manner without delays.
Efficiency (including the cost-effectiveness ratio and punctuality)	HS	The project was efficient. No flaws or delays were detected in the efficiency.
4) MONITORING AND EVALUATION		
General quality of the M&E	HS	The M&E was of high quality and made it possible to monitor and take corrective measures in time.
M&E design at the start of the project	HS	
M&E implementation plan.	HS	
5) SUSTAINABILITY		
General sustainability	MU	The economic crisis in the country and the COVID-19 pandemic put sustainability at risk.
INVOLVEMENT OF THE STAKEHOLDERS		
General quality of the involvement of the interested parties	HS	There was a high involvement and commitment by the interested parties (technicians, producers, authorities) at national and provincial level.

4. Lessons learned

Lesson learned 1: To develop a project aligned with the national priorities and policies, the ongoing monitoring of this relationship makes it possible to directly contribute to resolving problems that arise during the implementation, and resolve the needs of the interested parties. This also makes it possible to take precise adaptation measures, which becomes more relevant in times of crisis and sociopolitical instability. (Relevance)

Lesson learned 2: The use of participatory work methods such as the PRD made it possible to design a capacity-building strategy that addressed the main needs, problems and solutions for the livestock sector in each province, addressing institutional stakeholders and livestock producers as target groups. The direct relationship of the project technicians with the individual producers rather than through groups, associations or trades that often prioritise private interests was also key for achieving the outcomes and targets proposed. (Effectiveness)

Lesson learned 3: For projects implemented by two or more ministries, with different objectives and competences, in many cases, it is very useful to have a neutral third party with a high technical level and an active role in inter-institutional coordination. The project shows that, for future actions, the technical and support role of the FAO National Office makes it possible to minimise negative impacts related to changes in authorities and in technical staff, conflicting objectives between ministries, etc., focusing on the project activities and outcomes. (Efficiency)

Lesson learned 4: The M&E and knowledge management systems, including the use of online applications to store and share project documentation, together with the mode of implementation handled by the project technical team (without the hiring of external services), made it possible to generate a project documentation bank, stored online on the platform for CSL knowledge management, very useful for making the actions implemented sustainable and promoting their replication. The portal stores technical documents, technical recommendations packages, field manuals, bank of videos of good practices, infographs and training methods, among others. (Monitoring and evaluation)

Lesson learned 5: The permanent presence of project technical staff in the provinces made it possible to provide constant support to the producers, achieving their empowerment and commitment. The formalisation of the commitment of each producer to voluntarily join the project by signing the LoA for co-execution, which stipulates the obligation to complement the investments required to implement CSL practices with their own resources, proved to be the right strategy to strengthen the project's contribution to the male and female producers (provision of materials, inputs, equipment and contributions in terms of development of capacities) and ensure their appropriation and commitment of maintaining CSL practices after the project ends. (Participation and commitment of the interested parties)

Lesson learned 6: The prior diagnosis of the specific roles, problems and needs of the different groups of male and female beneficiaries, indigenous communities, vulnerable groups, etc., in relation to a specific activity, is an essential input when it comes to generating an effective intervention strategy, locally, in line with the situation and needs of the participants of a specific project or activity. Another lesson is the incorporation of the gender-sensitive approach from the design stage of a project, which must be implemented by the whole team of project technicians, guided by a specialist. (Gender and social equality aspects)

Lesson learned 7: One important outcome of the project, which did not have a lot of visibility, is the development of capacities and internal specialisation of the technical team and professionals involved. One important lesson is the need to promote the integration of the members of the technical team of the project in other institutional spaces and new initiatives, which will contribute

enormously to the sustainability of the outcomes achieved, as well as to the strengthening of the institutional technical teams. (Sustainability)

Lesson learned 8: One lesson learned is the need to integrate the commercial approach, the value chains, the insertion into the markets and the relationship with the private sector within the dynamic of FAO projects, given that it would make it possible to give incentives and contribute to ensuring better income for the producers who adopted the climate-smart livestock farming approach. (Progress towards impact)

5. Conclusions and recommendations

5.1 Conclusions

Conclusion 1. Relevance. From the outset, the project demonstrated and addressed a great need in the agricultural sector. In addition, it was pertinent and relevant in relation to the instruments, operational and strategic tools of the donor (GEF), FAO and national development plans and the priorities and policies regarding climate change and sustainable livestock farming.

Conclusion 2. project outcomes. The project achieved the outcomes and targets defined in its design, and exceeded some of the targets proposed. In addition, outcomes that were not contemplated in the project were achieved, in terms of policies and partnerships with the private sector.

Conclusion 3. Development of capacities and knowledge management. The project capacity development strategy was composed of specific programmes for each province, organised under a knowledge management approach, according to the target group, its needs and existing capacities. The work methods ensured the participation and empowerment of the various stakeholders in the diagnosis, planning and implementation processes of climate-smart livestock farming practices, including gender equality. A high amount of documentation was prepared, promoting its dissemination beyond the stakeholders linked to the project, positioning the climate-smart livestock farming approach in other authorities.

Conclusion 4. Efficiency, implementation and execution of the project. The role of FAO as the project executing and implementing agency – acting as a high level technical advisor, neutral third party and bridge between two ministries, often with diverging objectives and roles – enabled fluid inter-institutional coordination, focused on achieving the project targets and outcomes. When there were changes in authorities and/or in technical staff of the project, the role of FAO made it possible to give continuity to the actions, avoid delays and other negative impacts that would have been able to limit the performance of the project team.

Conclusion 5. Monitoring and evaluation. The project monitoring and evaluation system was efficient and contributed to the implementation of the activities planned at national level and in the intervention provinces. The monitoring and evaluation system implemented is a useful and relevant tool accessible to the whole project team, and facilitates accountability and the remote completion of this final evaluation.

Conclusion 6. Participation and commitment of the interested parties. The stakeholders and interested parties showed ongoing commitment and appropriation. This was decisive in achieving the outcomes and targets proposed. The provincial political environment had an impact on the appropriation of the climate-smart livestock farming approach in each territory at institutional as well as producer level. The project strengthened the level of organisation of the producers, which had a positive impact on their quality of life, linked to a greater relationship with their communities, generating actions such as the distribution of milk to children from vulnerable areas and contributing to food security.

Conclusion 7. Gender and social equality aspects. The project promoted gender equality by supporting men and women in all actions they perform linked to livestock production, seeking equal opportunities and the generation of affirmative actions geared particularly towards smallholders, female heads of households and women who head livestock farming, in order to contribute to the elimination of obstacles that hinder their development. The emphasis on women complied with the need to improve the quality of their participation, in addition to developing and

strengthening their capacities geared towards promoting the adoption of climate-smart livestock farming practices.

Conclusion 8. Sustainability. The main barrier limiting the sustainability of the outcomes achieved in the environmental, social, institutional and financial sphere is the economic crisis that Ecuador has suffered in recent years, exacerbated by the COVID-19 pandemic. Given that the latter arose towards the end of the project, it was not contemplated. However, the current scenario also represents an opportunity for climate-smart livestock farming, which includes small and medium scale family farming, given its contribution to food security by promoting the production of quality meat and milk that is safe and nutritional. In addition, by reducing greenhouse gas emissions, contributing to adaptation to climate change and reducing environmental degradation, climate-smart livestock farming can be the beneficiary of resources from international sources of climate financing.

Conclusion 9. Progress towards impact. The project managed to fulfil the targets proposed related to the reduction of soil degradation, the mitigation of greenhouse gas emissions and the improvement of the adaptation capacity of the Ecuadorian livestock sector. In terms of technical aspects, the development of online tools to monitor greenhouse gas emissions and to calculate climate risk and the adaptation capacity of the sector, is noteworthy. These tools are in the process of being launched in an application for mobile phones and will be very useful in the search for international financing for climate matters.

Conclusion 10. Progress towards impact. One gap shown in the project throughout the whole process of consultation with the interested parties, is the lack of connections to the market and the private sector that, although not contemplated in the design, arises as a recurring element during the implementation. The partnership established with the private company El Ordeño to train a group of its providers who later implemented climate-smart livestock farming practices in their farms, is an example of the role the private sector can play to promote and disseminate the climate-smart livestock farming approach (or another sustainable agriculture activity or approach) by means of incentives for environmentally-friendly production.

5.2 Recommendations

174. **The recommendations of the final evaluation** are grouped into recommendations specific to the area of action of the project and into those that address matters beyond the sphere of control of the project.

Recommendations specific to the area of action of the project:

Recommendation 1. In terms of pertinence. In order for the project to contribute to the country commitments regarding climate change:

i. For the project team - it is recommended that they finalise the 2030 Sustainable Livestock Farming Strategy proposal and the livestock sector NAMA proposal as soon as possible. Work with the government for awareness raising and consultation of the livestock sector NAMA, for its adoption.

ii. For the Ministry of Agriculture and Livestock and the Ministry of Environment and Water of Ecuador - it is suggested that they review and assess whether the livestock sector NAMA can be adopted, or that they work on it so that it can be sent to the United Nations Framework Convention on Climate Change. Consider whether the work performed can contribute to the search for financing among international donors, including the NAMA Facility of the Inter-American Development Bank, which has shown interest. International financing for the livestock sector NAMA will make it possible to make the climate-smart livestock farming

practices sustainable and fulfil the target regarding the reduction of greenhouse gas emissions established in the nationally determined contributions, as well as generate environmental, social and economic benefits for the country.

iii. For the Ministry of Agriculture and Livestock - it is suggested that they assess the inclusion of the 2030 Sustainable Livestock Farming Strategy to have a political framework that facilitates the international financing of the actions proposed in the livestock sector NAMA and in other similar initiatives.

Recommendation 2. In terms of effectiveness. In order for Ecuador to consolidate the green credit line in the state development bank:

i. For BanEcuador - it is suggested that they find agreements with the international development bank to make the green credit line sustainable, under the same credit conditions, or even with lower interest rates than other development loans.

ii. For FAO - it is recommended that it promote the coordination and creation of synergies between BanEcuador and Corporación Nacional de Finanzas Populares y Solidarias, with a view to generating greater financial inclusion to support the popular and solidarity-based financial sector organisations (savings and credit cooperatives, mutual entities, savings banks and community banks) so that they can offer the green credit line, broadening the opportunities for the producers who want to implement the climate-smart livestock farming approach in their farms. It is also recommended that FAO-Ecuador assist BanEcuador in the search for international financing to maintain a green credit line, linked to a system of reduction of greenhouse gas emissions.

Recommendation 3. In order to maintain the climate-smart livestock farming practices implemented by the livestock producers, particularly in the province of Loja:

i. For the Ministry of Agriculture and Livestock, for the Ministry of Environment and Water of Ecuador and for FAO - it is suggested that they support the Loja provincial decentralised autonomous government in the implementation of the climate-smart livestock farming approach as part of the actions that it proposes in its Land Use and Development Plan; and support the Gonzanamá and Paltas cantonal decentralised autonomous governments in their initiatives to implement the climate-smart livestock farming approach in their lands. Support the initiatives geared towards the partner universities of the project in the different provinces and in the non-governmental organisation *Children of the Andes Humanitarian* in the province of Imbabura that seeks to ensure the sustainability and replication of the project outcomes.

ii. For FAO - it is recommended that on the basis of the project evidence, it promote outreach actions with private stakeholders that can contribute towards providing sustainability and to replicating the climate-smart livestock farming approach in other regions where there may be of interest.

Recommendation 4. It is recommended that the Loja provincial decentralised autonomous government and the provincial departments of the Ministry of Agriculture and Livestock and the Ministry of Environment and Water of Ecuador in Loja, give continuity to the implementation of the gender equality strategy developed by the project, to promote equal opportunities and the generation of affirmative actions geared particularly towards smallholders, female heads of households and women who head livestock farming, in order to contribute to the elimination of barriers that hinder their development. It is recommended that FAO share the lessons learned in Loja with other provinces where similar work is being done.

Recommendation 5. In order to maintain the outcomes (sustainability) achieved in the environmental, social, institutional and financial field:

i. For FAO - it is recommended that it promote the design and financing of new projects that make it possible to give continuity to the implementation of the climate-smart livestock farming approach in the country and in the region, taking into account the lessons learned with regard to the processes to develop capacities, commitment and appropriation by the interested parties, social equality, participation of the private sector and access to markets, among others, at all times highlighting the contribution made by climate-smart livestock farming to food security. Include members of the project technical team in these new initiatives that could provide substantial added value to the implementation of the climate-smart livestock approach, its continuity and replication.

ii. For the institutions involved - it is suggested that they assess the possibility of including the members of the project technical team in the new initiatives (2030 sustainable livestock strategy, livestock sector NAMA, nationally determined contributions, etc.) that aim to offer sustainability and replicate the climate-smart livestock farming approach. Given that the project technical team provided excellent performance, in addition to the fact that all members are specialised in the implementation of climate-smart livestock farming practices, they would undoubtedly provide immense added value to new projects and activities linked to the topic. This would make it possible to guarantee that the project human capital can continue to work on the climate-smart livestock approach, ensuring its full adoption in the country.

Recommendations that address topics beyond the area of control of the project:

Recommendation 6. It is recommended that the GEF Coordination Unit in Rome and FAO-Ecuador clearly identify the components of a project, the execution of which presents benefits when carried out by FAO as implementing agency and holder of an executing role, based on an analysis of risks that includes the technical and institutional capacities. For example, when involving projects that link two or more ministries or portfolios of the State with diverging objectives and roles, or where there are strong risks linked to political instability, FAO can play a key role as a high level technical advisor, neutral third party, and bridge between two or more ministries, facilitating fluid inter-institutional coordination, focused on achieving the project targets and outcomes. In addition, it can facilitate operations to buy inputs and recruit staff, maximising efficiency in the management and implementation of the project.

Recommendation 7. In terms of monitoring and evaluation, it is recommended that FAO consider the monitoring and evaluation system developed in the project as a model to follow in new projects, which can be reflected from the design phase of new initiatives. In this regard, it is recommended that the lessons learned be systematised and distributed across other Global Environment Facility projects, inside and outside of the country.

Recommendation 8. In terms of impact, it is recommended that, for future programmes and projects that promote climate-smart livestock farming and/or sustainable agricultural production, FAO include components relating to value chains, access to markets, the identification of special markets and partnerships with the private sector, as elements that can contribute substantially to the adoption of larger scale and longer term sustainable production practices. In addition, FAO's connection to private stakeholders must be agile and efficient to be able to respond to the demands of the sector and work in a joint manner.

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Appendix 1. List of stakeholders interviewed

Surname	First name	Institution	Position
Albán Bedón	Susana	FAO-CSLP/Quito	Gender Specialist
Álvarez Montero	Xavier	Universidad de Guayaquil/Guayas	Teacher
Angamarca	Alexander	MAAE/Morona Santiago	Natural Heritage Coordinator-Focal point with CSLP
Arias Alemán	Luis	ESPOCH/Morona Santiago	Teacher
Arias	Rosa	FAO-CSLP/Loja	Extensionist Technician
Ávalos	Diego	FAO-CSLP/Imbabura	Skills Strengthening and Planning Technician Imbabura
Ávila	Emilia	FAO-CSLP/Quito	Technical Assistant
Aymara	Jaime Enrique	MAG/Imbabura	Livestock Area Technician
Bastidas	Diego	MAG/Quito	Director of Livestock Productivity and Nutrition
Baque	Eliana	FAO-CSLP/Santa Elena	Skills Strengthening and Planning Technician Santa Elena
Cáceres	Vanessa	FAO Ecuador/Quito	Administrative Manager of FAO Ecuador Office
Calles	Juan	FAO/Quito	GEF Portfolio Coordinator
Cárdenas	Daysy	MAAE/Quito	Climate Change Mitigation Specialist
Castillo	Norman	BanEcuador/Imbabura	Imbabura Provincial Manager
Chávez Pisco	Yessica	UNESUM/Manabí	Teacher
Cornejo Cornejo	Richard	MAG/Manabí	Sustainable Livestock Farming Manager
Chuquimarca	Mariana	Aso. Ganaderos de San Francisco de Borja/Napo	Partner
Duchitanga	Mercy	Sinaí/Morona Santiago parish DAG	Chairman
Estrella	René	Livestock Farmer Network/Napo	Chairman
Fernández Guarnizo	Paulina Vanesa	UNL/Loja	Manager/Coordinator of Agronomy Studies at UNL
Flores	Johanna	FAO Ecuador/Quito	Programme Assistant Manager
Fuentes	Richard	Asociación de Ganaderos Unidos Somos Mas/Guayas	Livestock Producer
Gallardo	Fernando	FAO-CSLP/Manabí	Manabí Extensionist Technician
Gerber	Pierre	World Bank	LTO (Lead Technical Officer)
Gonzales	Valeria	FAO	FLO (Funding Liaison Officer)
Guamán	Raquel	Changaimina/Loja Parish	Livestock Farmer
Guaras	Luis	FAO-CSLP/Napo	Extensionist Technician
Jara	Roberto	FAO-CSLP/Morona Santiago	Extensionist Technician
Jiménez	Javier	FAO-CSLP/Quito	Capacity-building Specialist
Jiménez	Otto	MAG/Napo	Manager
López Chacón	Dina	ASOPROLEMA - Asociación Productores de Leche/Morona Santiago	Livestock Farmer
López Guale	Fulton	Dos Mangas/Santa Elena Commune	Producer
López	Osmani	FAO-CSLP/Loja	Skills Strengthening and Planning Technician Loja
Luebert	Germán	Independent	MTR Evaluator
Mancino Valdivieso	Mario	Provincial Government/Loja	Livestock Consultant

Surname	First name	Institution	Position
Manitio	Pedro	Cuyuja/Napo Parish DAG	Chairman
Medina	Diana	MAAE/Napo	Technician
Mendoza	Fernando	Chone/Manabí DAG	project Manager
Merino Suing	Juan	FAO-CSLP/Quito	National Coordinator
Meza Orellana	Ximena	BanEcuador/Morona Santiago	Manager
Morán	Miguel	MAG/Guayas	Sustainable Livestock Farming Manager
Moreira	Claudio	ASOGAN – Convento/Manabí	Chairman
Moreira G	Johanna	MAAE/Manabí	Wildlife Technician
Opio	Carolyn	FAO	LTO (Lead Technical Officer)
Orellana Palomeque	Guido	Sinaí/Morona Santiago community savings bank	Chairman
Ortiz	Hivy	FAO	LTO (Lead Technical Officer)
Panama	Zoila	Makipurashpa Wiñachikuna Community Savings Bank, Producers of the Tangalí Community (Quichinche parish, Otavalo canton)/Imbabura	President of Community Savings Bank and Producer
Pardo Ríos	George Xavier	AGROCALIDAD/Santa Elena	Livestock Technician
Pasquel	Xavier	Asociación de Productores 24 de junio, Buenos Aires/Imbabura Parish	Producer
Paucar	Edwin	FAO-CSLP/Napo	Extensionist Technician
Peñafiel	Alberto	Pedro Carbo/Guayas cantonal DAG	Environmental Director
Pilay Mero	Jhonny Wilmer	MAG/Santa Elena	Sustainable Livestock Farming Manager
Placencia Berrú	Stalin Vladimir	MAG/Loja	Provincial Director
Pluas	Yonny	ASOBULCAM/Guayas	Livestock Producer
Quiroz	Daniel	FAO-CSLP/Quito	Financial Mechanisms and Incentives Specialist
Ríos	María Isabel	FAO-CSLP/Imbabura	Extensionist Technician
Rivadeneira	José Luis	FAO-CSLP/Morona Santiago	Skills Strengthening and Planning Technician
Rodríguez	Milton	Changaimina/Loja Parish DAG	Representative of the parish DAG of the canton of Gonzanamá
Rosales	Johanna	El Ordeño/Quito	Sustainability Manager
Rugel	Jhonatan	Guayas Provincial DAG	Productivity Department Coordination
Ruiz	Rodrigo	Parish DAG of Buenos Aires/Imbabura	Parish DAG spokesperson
Salinas	Karina	MAAE/Quito	National Director of Climate Change Adaptation
Samaniego Dumas	Roberth Cristóbal	MAG/Morona Santiago	District Director
Sangoluisa	Pamela	FAO-CSLP/Quito	Mitigation Specialist
Solis Lucas	Ligia Araceli	UPSE/Santa Elena	Teacher
Torres	Jonathan	FAO-CSLP/Quito	Climate Change Adaptation Technician
Túquerres	Néstor	Asociación de Productores San Francisco de El Abra / Centro de Acopio de Leche (El Abra community, La Esperanza parish, Ibarra/Imbabura canton)	President/Producer
Velásquez	Paulo	BanEcuador/Quito	Specialist in financial products

Surname	**First name**	**Institution**	**Position**
Vélez Cevallos	Germán Alberto	MAAE/Loja	Provincial Director
Vinueza	Edwin	Saminay Educational Centre, Quichinche, Otavalo parish/NGO *Children of the Andes Humanitarian/*Imbabura	Executive Director project Manager
Viscarra	Carlos	MAAE/Quito	National Director of Climate Change Mitigation
Zambrano	Johanna	FAO-CSLP/Manabí	Skills Strengthening and Planning Technician
Zambrano	Xavier	FAO-CSLP	Guayas Extensionist Technician
Zimmermann	Agustín	FAO Ecuador	FAO Ecuador Representative

Annexes

Available in the original Spanish language version of the report:

Anexo 1. Matriz de evaluación
http://www.fao.org/3/cb1414es/cb1414es.pdf

Anexo 2. Prácticas de ganadería climáticamente inteligente (GCI) implementadas por el proyecto
http://www.fao.org/3/cb1415es/cb1415es.pdf

Anexo 3. Carta de acuerdo de coejecución firmada con productores/as
http://www.fao.org/3/cb1416es/cb1416es.pdf

Anexo 4. Resumen de resultados de consultas en línea a técnicos de instituciones estatales
http://www.fao.org/3/cb1417es/cb1417es.pdf

Anexo 5. Datos financieros del proyecto, incluyendo el cofinanciamiento
http://www.fao.org/3/cb1418es/cb1418es.pdf

Anexo 6. Cuadro de valoración de los criterios del FMAM
http://www.fao.org/3/cb1419es/cb1419es.pdf

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

Food and Agriculture Organization of the United Nations
Rome, Italy

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